



1. Application details

1.1. Permit application details

Permit application No.: 6758/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Downsview Pty Ltd

1.3. Property details

Property: LOT 619 ON PLAN 206858, HOPETOUN
LOT 335 ON PLAN 147485, HOPETOUN

Colloquial name:
Local Government Authority: RAVENSTHORPE, SHIRE OF
DER Region: South Coast
DPaW District: ALBANY
LCDC: Ravensthorpe
Localities: HOPETOUN

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
343		Mechanical Removal	Grazing & pasture

1.5. Decision on application

Decision on Permit Application: Refusal

Decision Date: 18 April 2016

Reasons for Decision: The applicant has applied to clear 343 hectares of native vegetation.

The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and it has concluded that the proposed clearing is seriously at variance to Principle (g), at variance to Principles (a),(b), (d), (f), (i) and may be at variance to Principles (c), (e) and (h), and is not likely to be at variance to Principle (j).

An assessment has determined that the proposed clearing will cause appreciable land degradation in the forms of salinity, waterlogging and eutrophication and subsequent deterioration in water quality, will impact on native vegetation that comprises a high level of biological diversity, habitats for conservation significant fauna, a mapped nationally-listed threatened ecological community, a mapped conservation-significant wetland system, and a mapped regionally significant fauna corridor, and may impact on rare and priority flora.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49 hectares, to establish 4.77 hectares of trees, and to fence adjacent vegetation located outside the application area, in order to mitigate the risk of land degradation in the form of salinity and waterlogging and the impact to black cockatoo habitat. The applicant also submitted that native vegetation on adjacent land will maintain access between the Jerdacuttup River, lakes and bushland, and that approximately 10 hectares of black cockatoo foraging habitat was excluded from the original application.

Taking into account the applicant's additional advice, the Delegated Officer considered that the proposed clearing is still likely to result in appreciable land degradation and water quality deterioration, and has unacceptable environmental impacts to flora and fauna including species of conservation significance and a nationally-listed threatened ecological community.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Association 47 is described as shrublands comprising tallerack mallee-heath (Shepherd et al, 2001).	The applicant proposes to clear 343 hectares of native vegetation within Lot 335 on Deposited Plan 147485 and Lot 619 on Deposited Plan 206858, Hopetoun, for	Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The description and condition of the vegetation under application was determined via a site inspection undertaken by the Department of Environment Regulation in October (DER, 2015).
Beard Vegetation Association 4048 is described as		To	

shrublands comprising scrub-heath in the Esperance Plains including Mt Ragged scrub-heath (Shepherd et al, 2001).

the purpose of pasture for grazing.

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994).

The vegetation under application comprises low shrublands with scrub heath and Mallee heath with sedges, dense heath and *Melaleuca cuticularis* within damp areas (DER, 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 applicant proposes to clear 343 hectares of native vegetation within Lot 335 on Deposited Plan 147485 and Lot 619 on Deposited Plan 206858, Hopetoun, for the purpose of grazing and pasture. The vegetation under application ranges from very good to degraded (Keighery, 1994) condition, with the majority of the vegetation in good (Keighery, 1994) condition (DER, 2015). Aerial imagery indicates that the application area has been previously cleared for agriculture, with significant regrowth since initial clearing. The vegetation under application comprises low shrublands with scrub heath and mallee heath with sedges, dense heath and *Melaleuca cuticularis* within damp areas (DER, 2015).

There are 15 priority flora species and two rare flora species recorded within the local area (defined as a 10 kilometre radius around the application area). Of these, 12 priority flora species and both rare flora species have been recorded within the same mapped soil and vegetation type to that of the application area. The application area covers an extensive area and includes vegetation in predominately good (Keighery, 1994) condition, therefore there is a reasonable probability that these species could occur within the application area. An appropriately timed flora survey undertaken by a qualified botanist would be required to determine whether any rare or priority flora species occur within the application area.

There are 20 conservation significant fauna species recorded (2000-onwards) within a 30 kilometre radius of the application area (Parks and Wildlife, 2015a). Of these species, the proposed clearing has the potential to impact significantly on malleefowl (*Leipoa ocellata*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and Carnaby's cockatoo (*Calyptorhynchus latirostris*), as suitable habitat for these species was identified on site. These species are listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950*. A fauna survey undertaken by a qualified fauna specialist would be required to determine the presence of habitat and/or fauna species utilising the vegetation under application.

The application area is part of a contiguous remnant of native vegetation that forms part of a macro habitat corridor, identified as an important landscape scale connection, and mapped within Strategic Zone A of the Western Australian South Coast Macro Corridor Network (Wilkins et al, 2006). Zone A cells are defined as containing areas of woody vegetation where remnants greater than 30 hectares in size are spaced no more than one kilometre apart and potentially form the most direct link between core habitat/major protected areas (Wilkins et al, 2006). In the South Coast region landscape connectivity is considered a high priority, and the proposed clearing will contribute to the regional decline in available fauna habitat, and exacerbate the edge effects on the adjacent remnant vegetation within nearby private properties and Crown reserves. It is considered that the proposed clearing will directly remove suitable fauna habitat and contribute to the degradation of suitable nearby habitat.

The local area retains approximately 30 per cent native vegetation. The application area is mapped as Beard vegetation associations 47 and 4048 which retain approximately 35 and 50 per cent of their pre-European vegetation extents respectively (Government of Western Australia 2014).

According to available datasets, approximately 85 hectares of the application area is mapped as part of the Dunns Swamp Suite, which has been recognised as Conservation class. The Dunns Swamp Suite is mapped as a group of wetlands, rather than as individual wetland boundaries (Parks and Wildlife, 2015b). The Suite occupies an area of approximately 900 hectares, which includes the southern area of Lot 335, and extends west into nearby freehold and Crown lands. The application area comprises a variety of habitats for flora and fauna, and includes wetland species, particularly around lower lying areas on site. Further, aerial imagery from November 2012 shows various small areas of open water surrounded by dense vegetation within the application area (Parks and Wildlife, 2015b).

The majority of the application area is within a mapped nationally-listed threatened ecological community (TEC) known as 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Kwongkan Shrublands TEC). This TEC is listed as endangered and protected under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In Western Australia, this TEC has been afforded Priority 3 conservation status by the Department of Parks and Wildlife. While the majority of the application area is within the mapped Kwongkan Shrublands TEC, the Commonwealth of Australia (2013) notes that detailed mapping of this community is not available and that ground-truthing is required to verify if a site meets the required diagnostic criteria to be the described TEC.

Based on the condition of the vegetation, the reasonable probability of rare and priority flora, the presence of habitat for fauna including species of conservation significance, and the mapping of portions of the application area within a conservation significant wetland system, a nationally-listed TEC and a South Coast Macro Corridor, it is considered that the vegetation under application comprises a high level of biological diversity.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49 hectares, to establish 4.77 hectares of trees, and to fence adjacent vegetation located outside the application area. The applicant also submitted that native vegetation on adjacent land will maintain access between the Jerdacuttup River, lakes and bushland, and that approximately 10 hectares of black cockatoo foraging habitat was excluded from the original application.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to biodiversity. However the modified application area is mapped within a conservation significant wetland system, a nationally-listed TEC and a regionally-significant fauna corridor, and is likely to include vegetation in very good (Keighery, 1994) condition that comprises habitats for flora and fauna including species of conservation significance. As such it is still considered that the vegetation under application comprises a high level of biological diversity.

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

Methodology

References:
Commonwealth of Australia (2013)
CSLC (2015)
DER (2015)
Government of Western Australia (2014)
Keighery (1994)
Parks and Wildlife (2007-)
Parks and Wildlife (2015a)
Parks and Wildlife (2015b)
Parks and Wildlife (2015c)
Wilkins et al (2006)

GIS Databases:
SAC Bio Datasets (Accessed December 2015)
South Coast Significant Wetlands
Parks and Wildlife Tenure

(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 at variance to this Principle

The application area is part of a contiguous remnant of native vegetation that forms part of a macro habitat corridor, identified as an important landscape scale connection, and mapped within Strategic Zone A of the Western Australian South Coast Macro Corridor Network (Wilkins et al, 2006). Zone A cells are defined as containing areas of woody vegetation where remnants greater than 30 hectares in size are spaced no more than one kilometre apart and potentially form the most direct link between core habitat/major protected areas (Wilkins et al, 2006). In the South Coast region landscape connectivity is considered a high priority, and the proposed clearing will contribute to the regional decline in available fauna habitat, and exacerbate the edge effects on the adjacent remnant vegetation within nearby private properties and Crown reserves. It is considered that the proposed clearing will directly remove suitable fauna habitat and contribute to the degradation of suitable nearby habitat.

The application area includes vegetation in a very good (Keighery, 1994) condition (DER, 2015) and is likely to comprise suitable habitat for a variety of indigenous fauna, including species of conservation significance.

A number of conservation-significant fauna have been recently recorded (2000-onwards) within a 30 kilometre radius of the application area, including black-browed albatross (*Thalassarche melanophris*), western bristlebird (*Dasyornis longirostris*), curlew sandpiper (*Calidris fuscicollis*), ruddy turnstone (*Arenaria interpres interpres*), wood sandpiper (*Tringa glareola*), grey plover (*Pluvialis squatarola*), common greenshank (*Tringa nebularia*), red knot (*Calidris canutus*), sharp-tailed sandpiper (*Calidris acuminata*), red-necked stint (*Calidris ruficollis*), sanderling (*Calidris alba*), rainbow bee-eater (*Merops ornatus*), peregrine falcon (*Falco peregrinus*), hooded plover (*Charadrius rubricollis*), western whipbird (southern WA subsp.) (*Psophodes nigrogularis oberon*), malleefowl (*Leipoa ocellata*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*) (Parks and Wildlife, 2007-) and water-rat (*Hydromys chrysogaster*),

Noting the composition and condition of the vegetation under application, the proposed clearing has the potential to impact on malleefowl, Baudin's cockatoo and Carnaby's cockatoo, all of which are listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* and as vulnerable or endangered under the *Environment Protection and Biodiversity Conservation Act 1999*.

Malleefowl are found in southern Australia, in semi-arid shrublands and low woodlands dominated by mallee eucalypts and acacias, and feed opportunistically on a variety of flora, fungi and invertebrates (Parks and Wildlife, 2015a). Malleefowl often require sandy substrate and abundant leaf litter for breeding. Two records (2000 and 2003) of malleefowl occur within 20 kilometres of the application area, with multiple other records within 30 kilometres (Parks and Wildlife, 2007-). It is possible that malleefowl nest and forage within the application area (Parks and Wildlife, 2015a). A survey for malleefowl and malleefowl mounds, both active and

inactive, undertaken by a qualified fauna specialist would be required to determine the potential impacts of the proposed clearing on this species.

Carnaby's cockatoo are endemic to Western Australia's southwest and opportunistically forage in proteaceous woodlands and kwongan heath, with a preference for hakea, grevillea, banksia and eucalypt species (Valentine and Stock, 2008). They nest in hollows of large salmon gum and Wandoo eucalypts (Parks and Wildlife, 2015a). There are numerous records (2000-onwards) of Carnaby's cockatoo within 10 kilometres of the application area, with multiple other records in the vicinity. Based on knowledge of the preferred foraging habits of Carnaby's cockatoos, the application area contains suitable foraging habitat for this species. It is noted that foraging habitat for this species also occurs within nearby freehold and Crown lands. To determine the significance of the vegetation under application for this species, a fauna survey undertaken by a qualified fauna specialist would be required. No large primary habitat trees were observed on-site (DER, 2015), and it is considered that the proposed clearing is unlikely to impact nesting habitat for this species.

Baudin's cockatoo are endemic to the higher rainfall areas of Western Australia's southwest region, in temperate forest and woodlands dominated by jarrah, karri and marri (Parks and Wildlife, 2015a). They opportunistically feed on marri, jarrah and banksia species, and nest in hollows of mature eucalypts (Commonwealth of Australia, 2012). Three records (2003) of Baudin's cockatoos are within 10 kilometres of the application area, with multiple other records within 30 kilometres (Parks and Wildlife, 2007-). Based on the knowledge of preferred foraging habits of Baudin's cockatoo, it is likely that the application area is opportunistically used for foraging by this species. It is noted that foraging habitat for this species may also occur within nearby freehold and Crown lands. To determine the significance of the vegetation under application for this species, a fauna survey undertaken by a qualified fauna specialist would be required. No large primary habitat trees were observed on-site (DER, 2015), and it is considered that the proposed clearing is unlikely to impact nesting habitat for this species.

The application area is located in proximity to extensive conservation significant wetlands and coastal waters, and a number of migratory birds and other coastal birds have been recorded within a 30 kilometre radius. These species are highly mobile, and given that the application area is largely terrestrial and located approximately 550 metres from the coast and 2.1 and 11 kilometres from Jerdacuttup Lake and Culham Inlet respectively, it is considered that the proposed clearing is unlikely to impact significant habitat for these species.

The rainbow bee-eater and peregrine falcon are highly mobile avian species with large home ranges and are thus unlikely to be significantly impacted upon by the proposed clearing.

The water-rat inhabits a wide variety of permanent aquatic habitats. It can be found in most types of freshwater habitats, including artificially irrigated sites, and can also occur in mangrove and estuarine areas. The species nests within bankside tunnels or logs, with most food taken from the water (Aplin et al 2008). While there is a wetland mapped within the southern portion of the application area, there were no permanent aquatic habitats identified on site, and more suitable habitat for this species is available within the vegetation surrounding the nearby Jerdacuttup Lake and Culham Inlet.

Based on the composition and condition of the vegetation, the presence of suitable habitats for a variety of fauna including migratory birds and species of conservation significance, and the mapping of portions of the application area within a South Coast Macro Corridor that has been classified as regionally significant for the movement of endemic fauna, it is considered that the vegetation under application comprises significant habitat for indigenous fauna.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49 hectares. The applicant also proposed to fence adjacent vegetation located outside the application area, submitted that native vegetation on adjacent land will maintain access between the Jerdacuttup River, lakes and bushland, and that approximately 10 hectares of black cockatoo foraging habitat was excluded from the original application.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to fauna habitats. However the modified application area is mapped within a regionally significant fauna corridor, and is likely to include vegetation in very good (Keighery, 1994) condition that comprises habitat for a variety of indigenous fauna including species of conservation significance. As such it is still considered that the vegetation under application comprises significant habitat for indigenous fauna.

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

Methodology

References:
Aplin et al (2008)
Commonwealth of Australia (2012)
DER (2015)
Keighery (1994)
Parks and Wildlife (2007-)
Parks and Wildlife (2015a)
Valentine and Stock (2008)
Wilkins et al (2006)

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

Comments Proposed clearing may be at variance to this Principle

Two rare flora species have been recorded within the local area (10 kilometre radius) on the same soil and vegetation type to those mapped within the application area.

The closest of these species, an orchid that occurs in deep well drained sands in mallee shrubland and woodland (DEC, 2011), has been recorded approximately 6.3 kilometres south-west of the application area, with 12 records in the local area. The application area contains mallee shrubland and soils largely comprising grey deep sandy duplex soils with associated pale deep sands and minor duplex sandy gravels (CSLC, 2015). It is considered that the application area may include suitable habitat for, and occurrences of, this species. An appropriately timed flora survey undertaken by a qualified botanist would be required to confirm whether this species occurs within the application area.

The second species, an erect, pine-like shrub that grows within white sands on rocky quartzite slopes (Western Australian Herbarium, 1998-), has been recorded approximately nine kilometres south-west of the application area, with two records in the local area. The application area occupies the lower slope position in the landscape and there were no rocky quartzite slopes identified during a site inspection (DER, 2015; CSLC, 2015). It is considered that the application area is not likely to include this species.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49 hectares.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to rare flora. However the modified application area is likely to include soil and vegetation types consistent with habitats for rare flora. As such it is still considered that the vegetation under application may include habitat for or occurrences of rare flora.

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

Methodology References:
CSLC (2015)
DEC (2011)
DER (2015)
Western Australian Herbarium (1998-)

GIS Databases:
SAC Bio Datasets (Accessed December 2015)

(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 majority of the application area is within a mapped nationally-listed threatened ecological community (TEC) known as 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (Kwongkan Shrublands TEC). This TEC is listed as endangered and protected under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In Western Australia, this TEC has been afforded Priority 3 conservation status by the Department of Parks and Wildlife.

The Kwongkan Shrublands TEC is predominantly located within the Esperance Sandplains and Mallee bioregions, and typically occurs on sandplains, occupying lower and upper slopes and ridges, as well as uplands, where rainfall ranges from 400 to 800 millimetres a year. It largely occurs on duplex soils and deep to shallow soils on the sandplains, and is dominated by plants from the family Proteaceae including from the genera *Adenanthos*, *Banksia*, *Grevillea*, *Hakea*, *Isopogon* and *Lambertia* (Threatened Species Scientific Committee, 2014).

This TEC occurs within a global hotspot of biodiversity which is home to an array of unique plant species, and provides habitat for a number of native fauna species. In total, fifty-four plant and eighteen animal species that are listed as threatened, either state or nationally, are known to occur within the Kwongkan Shrublands (Threatened Species Scientific Committee, 2014).

This TEC has a fragmented geographic distribution whereby a significant portion of its mapped distribution has been lost, with remaining areas left vulnerable to the impacts of land clearing, dieback, changing fire regimes, climate change and invasive species (Threatened Species Scientific Committee, 2014). The community is intolerant of frequent disturbance due to land modification and clearance, and the intention of the community's listing as a TEC is to protect it from further fragmentation.

Whilst the majority of the application area is within the mapped Kwongkan Shrublands TEC, the Commonwealth of Australia (2013) notes that detailed mapping of this community is not available, and ground-truthing is required to verify if a site meets the required diagnostic criteria to be the described TEC.

A site inspection identified that the application area is dominated by flowering shrub species from the Proteaceae family, including *Banksia speciosa* and *Lambertia inermis* which are characteristic species for this TEC (DER, 2015), therefore it is likely that the application area includes the Kwongkan Shrublands TEC. The proposed clearing would increase fragmentation locally, and contribute towards the continued degradation of the community. A flora survey undertaken by a suitably qualified botanist would be required to determine the extent of this TEC and thus help to determine the extent of impact as a result of the proposed clearing.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49 hectares.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to TECs. However the modified application area is mapped within a nationally-listed TEC. As such it is still considered that the vegetation under application comprises a TEC.

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

Methodology References:
Commonwealth of Australia (2013)
DER (2015)
Parks and Wildlife (2015c)
Threatened Species Scientific Committee (2014)

GIS Databases:
SAC Bio Datasets (Accessed December 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 application area occurs within the Esperance Plains Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 51 per cent of the pre-European native vegetation cover remains (Government of Western Australia, 2014). The Shire of Ravensthorpe retains approximately 62 per cent of the pre-European native vegetation, and the local area (10 kilometre radius) retains approximately 30 per cent. The application area is mapped as Beard vegetation associations 47 and 4048, which retain approximately 35 and 50 per cent of their pre-European vegetation extents within the IBRA bioregion respectively (Government of Western Australia 2014).

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). Neither of the vegetation associations mapped within the application area occur at below the 30 per cent threshold, however the local area is on the limit of this threshold.

Based on the extent of native vegetation cover within the local area, and noting that the application area is part of a contiguous remnant of native vegetation that has been classified as regionally significant for the movement of endemic fauna, and includes areas mapped within a nationally-listed threatened ecological community and a conservation significant wetland system, it is considered that the vegetation under application may be significant as a remnant in an area that has been extensively cleared.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49 hectares.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to vegetation extent remaining in the local area and the significance of the vegetation under application as a remnant. However the modified application area is mapped within a conservation significant wetland system, a nationally-listed TEC and a regionally-significant fauna corridor. As such it is considered that the vegetation under application may be significant as a remnant in an area that has been extensively cleared.

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Esperance Plains	2,899,941	1,495,049	51	55
Shire*				
Shire of Ravensthorpe	982,194	605,475	62	32
Beard Vegetation Association in Bioregion*				
47	959,936	336,785	35	52
4048	39,026	19,454	50	66

Methodology References:
Commonwealth of Australia (2001)
*Government of Western Australia (2014)

GIS Databases:
SAC Bio Datasets (Accessed December 2015)
South Coast Significant Wetlands

(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 at variance to this Principle

Approximately 85 hectares of the application area (southern portion) is located within an area mapped in the South Coast Significant Wetlands dataset as the Dunns Swamp Suite, which has been recognised as conservation class. The Dunns Swamp Suite has been mapped to represent a group of wetlands rather than individual wetland boundaries (Parks and Wildlife, 2015b). The suite covers the southern area of Lot 335 and extends to the west within freehold and Crown Land. Jerdacuttup Lake is located approximately two kilometres east of the application area within Jerdacuttup Lakes Nature Reserve.

The application area comprises varied habitats for flora and fauna, and includes wetland species, particularly around lower lying areas on site. Further, aerial imagery from November 2012 shows various small areas of open water surrounded by dense vegetation within the application area (Parks and Wildlife, 2015b). Riparian vegetation was identified during a site inspection (DER, 2015).

A study of some of the wetlands within the Dunns Swamp Suite to the west of the application area indicates that rising saline groundwater is occurring and is a threat to these wetlands (Parks and Wildlife, 2015b). A Resource Condition Report for Dunns Swamp (DEC 2009) comparing data from 1998 and 2008 found that the wetlands were deteriorating in condition due to surrounding agricultural practices.

A land degradation assessment undertaken by the Department of Agriculture and Food Western Australia (DAFWA) identified that the proposed clearing is highly likely to significantly increase salinity and groundwater levels on site (Commissioner of Soil and Land Conservation (CSLC, 2015)). The proposed clearing also has the potential to alter the hydrology through changes to infiltration rates and surface flow patterns.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49, and to fence adjacent vegetation located outside the application area. The applicant also submitted that approximately 10 hectares of black cockatoo foraging habitat was excluded from the original application. These excluded areas also contain wetlands, two of which are within the Dunns Swamp Suite.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to wetlands. It is noted that although the excluded wetland areas were not part of the original application, the proposed clearing will result in their fragmentation and the removal of buffering vegetation, which may affect their capacity to be self-sustaining in the long term. The proposed clearing is also likely to impact the quality of surface water and groundwater in the local area. The modified application area is mapped within a conservation significant wetland system. As such it is still considered that the vegetation under application includes vegetation growing in association with a wetland.

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

Methodology References:
CSLC (2015)
DEC (2009)
Parks and Wildlife (2015b)

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

Comments Proposed clearing is seriously at variance to this Principle

The application area has been mapped as two soil landscape map units.

The dominant map unit within the application area is Munglinup 5 Subsystem - Map unit 245Mu_5. This unit comprises level and gently undulating plain of low relief with occasional isolated hillocks on Tertiary marine sediments of the Pallinup formation in the western part of the Esperance Sandplain Zone (CSLC, 2015). The soils within this landform unit comprise grey deep sandy duplex (gravelly) soils with associated pale deep sands and minor duplex sandy gravels and saline wet soils (CSLC, 2015).

The second map unit occurring within a small portion of the application area is the Gore 1 Subsystem - Map unit 245Go_1. This unit comprises poorly drained low lying coastal plains with gently undulating sand dunes and some lakes and swamps on Quaternary sediments with aeolian sands intruding from coastal dunes over Tertiary sediments in the southern coastal part of the Esperance Sandplain Zone (CSLC, 2015). The soils of this unit largely comprise alkaline grey sandy duplex soils and pale deep sands, minor calcareous deep sands and saline wet soils (CSLC, 2015).

A land degradation assessment undertaken by the Department of Agriculture and Food WA (DAFWA) identified that the risk of flooding, water erosion and wind erosion causing appreciable land degradation as a result of the proposed clearing is low (CSLC, 2015), although there is the potential for the proposed clearing to result in some soil erosion (particularly immediately post clearing) and elevated sediment levels associated with post rainfall runoff into lower lying areas.

DAFWA's land degradation assessment identified that salinity was observed on and off site (CSLC, 2015). The groundwater levels within the application area are close to the surface and low lying areas are likely to become inundated during wetter periods. In saline areas any evaporation post inundation associated with the clearing of lower lying areas will result in the accumulation of salts, especially if the ground is bare for any length of time (CSLC, 2015). Therefore, the clearing of significant areas of native vegetation, as proposed, is highly likely to significantly increase salinity and water table levels within the application area.

As noted above, groundwater levels on site are close to the surface, and the risk of waterlogging causing land degradation as a result of the proposed clearing is high, particularly within lower lying areas during winter months (CSLC, 2015).

Based on the very high risks associated with salinity and the high risks associated with waterlogging and eutrophication, it is considered that the proposed clearing will cause appreciable land degradation.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49 hectares, and to establish 4.77 hectares of trees, aimed at specifically at reducing issues associated with waterlogging and salinity.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to land degradation. However the modified application area is still of a substantial size, and noting that salinity is already present both on site and that the majority of the site is low-lying, there is still a high risk of salinity and waterlogging. As such it is still considered that the proposed clearing will cause appreciable land degradation.

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

Methodology References:
CSLC 2015

(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 may be at variance to this Principle

The vegetation under application ranges from very good to degraded (Keighery, 1994) condition, with the majority of the vegetation in good (Keighery, 1994) condition (DER, 2015).

The application area is located approximately 2.1 kilometres west of the Jerdacuttup Lakes Nature Reserve . Fitzgerald River National Park is the next closest conservation area, located approximately 13 kilometres west of the application area.

Approximately 85 hectares of the application area (southern portion) is mapped within a conservation significant wetland system. Studies (Green Skills, 2008; DEC, 2009) have shown that the water quality and vegetation are being impacted by land degradation issues from agricultural activities. No surface water was

evident on site during a site inspection (DER, 2015).

The application area is part of a contiguous remnant of native vegetation that forms part of a macro habitat corridor, identified as an important landscape scale connection and mapped within Strategic Zone A of the Western Australian South Coast Macro Corridor Network (Wilkins et al, 2006). In the South Coast region landscape connectivity is considered a high priority, and the proposed clearing will exacerbate the edge effects on the adjacent remnant vegetation within nearby private properties and Crown reserves. It is considered that the proposed clearing will contribute to the degradation of nearby habitat.

Specifically, the application area, together with the an extensive area of remnant native vegetation immediately west, provides a corridor between Jerdacuttup Lakes Nature Reserve (east) and Fitzgerald River National Park and Culham Inlet (east). While the proposed clearing is unlikely to completely sever the connectivity between these areas, the removal of a large area of vegetation within a local landscape retains 30 per cent native vegetation cover will contribute towards further landscape fragmentation and may limit fauna movement through the landscape and between the abovementioned conservation reserves.

In response to environmental concerns raised by DER, the applicant proposed to modify the application by reducing the extent of clearing proposed to 189.49 hectares. The applicant also submitted that native vegetation on adjacent land will maintain access between the Jerdacuttup River, lakes and bushland.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to nearby conservation areas. However the modified application area is mapped within a regionally-significant fauna corridor, and is likely to include vegetation in very good (Keighery, 1994) condition that provides connectivity between conservation areas and a buffer against edge effects. As such it is still considered that the proposed clearing may impact on the environmental values of nearby conservation areas.

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

Methodology References:
DEC (2009)
Green Skills (2008)
Keighery (1994)
Wilkins et al (2006)

GIS Databases:
Parks and Wildlife Tenure

(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 at variance to this Principle

Approximately 85 hectares of the application area (southern portion) is mapped within a conservation significant wetland system. Studies (Green Skills, 2008; DEC, 2009) have shown that the water quality and vegetation are being impacted by land degradation issues from agricultural activities. No surface water was evident on site during a site inspection (DER, 2015).

A land degradation assessment report undertaken by the Department of Agriculture and Food WA (DAFWA) identified that the risk of wind and water erosion causing appreciable land degradation is low (CSLC, 2015), although there is the potential for the proposed clearing to result in some soil erosion (particularly immediately post clearing) and elevated sediment levels associated with post rainfall runoff into lower lying areas. This may result in the deterioration of surface water of any areas that have the potential to hold water.

DAFWA's land degradation assessment identified that salinity was observed on and off site (CSLC, 2015). The groundwater levels within the application area are close to the surface and low lying areas are likely to become inundated during wetter periods. It was identified that the clearing of significant areas of native vegetation, as proposed, is highly likely to significantly increase salinity and water table levels within the application area. A rise in groundwater levels would likely result in the deterioration in the quality of groundwater as it will accumulate salt as it rises. In turn, an increase in salinity would lead to a deterioration in surface water quality should the application area hold water (most likely during winter months) within the mapped wetland area. Aerial imagery from November 2012 shows various small areas of open water surrounded by dense vegetation within the application area (Parks and Wildlife, 2015b).

As noted above, groundwater levels on site are close to the surface, and the risk of waterlogging causing land degradation as a result of the proposed clearing is high, particularly within lower lying areas during winter months (CSLC, 2015).

There is also a high risk of eutrophication causing land degradation as a result of the proposed clearing which could result in the deterioration of surface water quality, particularly within lower lying areas that become waterlogged during wetter periods (CSLC, 2015).

In response to environmental concerns raised by DER, the applicant proposed to modify the application by

reducing the extent of clearing proposed to 189.49 hectares, and to establish 4.77 hectares of trees, aimed at specifically at reducing issues associated with waterlogging and salinity.

Taking into account the applicant's additional advice, it is acknowledged that a reduction in the size of the application area is likely to reduce the risk of impacts in respect to the quality of surface water and groundwater. However the modified application area is still of a substantial size, and noting that salinity is already present both on site and that the majority of the site is low-lying, there is still a high risk of salinity and waterlogging. As such it is still considered that the proposed clearing will cause deterioration in the quality of surface or underground water.

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

Methodology References:
CSLC (2015)
DEC (2009)
DER (2015)
Green Skills (2008)
Parks and Wildlife (2015b)

GIS Databases:
South Coast Significant Wetlands

(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 likely to be at variance to this Principle

Approximately 85 hectares of the application area (southern portion) is mapped within a conservation significant wetland system. No surface water was evident on site during a site inspection (DER, 2015).

The annual rainfall of the Region is 600 millimetres per annum.

Advice from the Commissioner of Soil and Land Conservation indicates that the risk of flooding causing land degradation as a result of the proposed clearing is low (CSLC, 2015).

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
CSLC (2015)
DER (2015)

GIS Databases:
Rainfall, Mean Annual

Planning instruments and other relevant matters.

Comments The proposed clearing is for the purpose of cropping and pasture. The applicant has advised that the application area was previously cleared.

The application was advertised in The West Australian for a period of 21 days. One public submission was received in response to the proposed clearing. The submission objected to the proposed clearing on the basis that the application area is located within highly sensitive south coast/kwongan remnant vegetation, is likely to contain rare, restricted, endemic and threatened flora and fauna species, is within Australia's only global biodiversity hotspot, and is close to or upstream of important protected areas and wetland systems, and that the proposed clearing would compromise the work area of Gondwanalink, a widely supported community project aimed at restoring native vegetation and habitat across the lower south west (Submission, 2015). These concerns are acknowledged, and have been addressed within the relevant Clearing Principles.

The application area is zoned 'general agriculture' under the Shire of Ravensthorpe Town Planning Scheme No. 5.

The vegetation is within the agricultural area defined in Environmental Protection Authority Position Statement No.2 (EPA 2000), which states that significant clearing of native vegetation has already occurred on agricultural land, leading to a reduction in biodiversity and increase in land salinisation. Therefore there is a general presumption against clearing within this area for agricultural purposes (EPA, 2000).

In exceptional circumstances the EPA would consider supporting clearing for agriculture within this region if:

- there are alternative mechanisms for protecting biodiversity;
- the area to be cleared is relatively small, depending on the scale at which biodiversity changes over the area, including extent of vegetation in the surrounding area and recognising that values will vary for different ecosystems;
- the proponent demonstrates that the elements set out in Section 4.3 of Position Statement No.2 (2000) are being met – this will require extensive local and regional biodiversity work; and/or
- land degradation, including aquatic environments and threatening processes, such as dieback, salinisation or disruption of catchment processes, on-site and off-site would not be exacerbated.

There are no Aboriginal Sites of Significance mapped within the application area.

DER wrote to the applicant on 21 January 2016 advising that the preliminary assessment had identified a number of significant environmental impacts associated with the proposed clearing and inviting the applicant to provide further advice in respect to these matters (DER Ref A10439574). The applicant responded to DER's letter, proposing to modify the application by reducing the extent of clearing proposed to 189.49 hectares, to establish 4.77 hectares of trees, and to fence adjacent vegetation located outside the application area, in order to mitigate the risk of land degradation in the form of salinity and waterlogging and the impact to black cockatoo habitat. The applicant also submitted that native vegetation on adjacent land will maintain access between the Jerdacuttup River, lakes and bushland, and that approximately 10 hectares of black cockatoo foraging habitat was excluded from the original application (DER Ref A1074051).

The applicant's response and additional information was considered in the context of this assessment, and it is considered that the proposed clearing is still likely to cause significant land degradation in the form of salinity and waterlogging and continues to have unacceptable environmental impacts to flora and fauna.

Methodology References:
EPA (2000)
Submission (2015)

GIS Databases:
Town planning Scheme Zones
Aboriginal Sites of Significance

4. References

- Aplin, K., Copley, P., Robinson, T., Burbidge, A., Morris, K., Woinarski, J., Friend, T., Ellis, M. and Menkhorst, P. 2008. *Hydromys chrysogaster*. The IUCN Red List of Threatened Species 2008.
- Commissioner of Soil and Land Conservation (2015); Land Degradation Advice and Assessment Report for clearing permit application CPS 6758/1 received 4 December 2015; Department of Agriculture and Food Western Australia (DER Ref A1016786).
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species. Commonwealth of Australia, Canberra.
- Commonwealth of Australia (2013) Map of 'Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia'. Department of the Environment, Canberra, Australia.
- Department of Environment and Conservation (2009) Resource Condition Report for Significant Western Australian Wetland: Dunns Swamp. Department of Environment and Conservation. Perth, Australia.
- Department of Environment and Conservation (2011) Fitzgerald Biosphere Recovery Plan. A landscape approach to threatened species and ecological communities for recovery and biodiversity conservation. Department of Environment and Conservation, Western Australia.

- Department of Environment Regulation (2015) Site Inspection undertaken for Clearing Permit Application CPS 6758 /1. Department of Environment Regulation, Perth (DER Ref A1027158).
- Department of Parks and Wildlife (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/> (Accessed December 2015).
- Department of Parks and Wildlife (2015a) Advice for Conservation Significant Fauna for Clearing Permit Application CPS 6758/1. Department of Parks and Wildlife, Perth, Western Australia (DER Ref A1026916).
- Department of Parks and Wildlife (2015b) Advice for Conservation Significant Wetlands for Clearing Permit Application CPS 6758/1. Department of Parks and Wildlife, Perth, Western Australia (DER Ref A1026918).
- Department of Parks and Wildlife (2015c) Advice for Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia'. Department of Parks and Wildlife, Perth, Western Australia (DER Ref A1026916).
- Environmental Protection Authority (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, Western Australia.
- Green Skills Inc. (2008) Wetland Conservation at Hopetoun WA Hopetoun Wetland Suites: Inventory and Assessment. South Coast Natural Resource Management Inc. Denmark, Western Australia.
- 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.
- 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, 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.
- Submission (2015) Public submission received in relation to Clearing Permit Application CPS 6758/1 (DER Ref A1008039).
- Threatened Species Scientific Committee (2014) Approved Conservation Advice for Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia. Department of the Environment, Canberra.
- Valentine L. and Stock W. (2008) Food Resources of Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*) in the Gnaragar Sustainability Strategy study area. Unpublished report to the Forests Products Commission. Available from: <http://ro.ecu.edu.au/ecuworks/6147>.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed December 2015).
- Wilkins, P., Gilfillan, S., Watson, J. and Sanders, A. (ed) (2006) The Western Australian South Coast Macro Corridor Network – a bioregional strategy for nature conservation. Wilkins, P., Gilfillan, S., Watson, J. and Sanders, A. (ed). Department of Conservation and Land Management and South Coast Regional Initiative Planning Team, Albany.