Government of **Western Australia**
Department of **Water and Environmental Regulation**

Your ref:
Our ref: CPS 7196/1
Enquiries: Jaren Hart
Phone: 6364 7151
Email: info-der@dwer.wa.gov.au

Mr Michael Rabbitt
164 Lennard Street
HERNE HILL WA 6056

Dear Mr Rabbitt

REFUSAL OF APPLICATION TO CLEAR NATIVE VEGETATION UNDER THE *ENVIRONMENTAL PROTECTION ACT 1986*

I refer to your application to clear 9.4 hectares of native vegetation within Lot 3361 on Deposited Plan 156362, Hill River, for the purpose of a marron farm (reference CPS 7196/1). This application was received on 26 July 2016.

The former Department of Environment Regulation (DER) wrote to you on 29 May 2017, inviting you to address the environmental issues identified during the assessment of your application, or alternatively to withdraw your application. To date no response has been received in respect to this application. I understand from a telephone conversation with your consultant Mr Donald Williams on 25 August 2017 that you do not intend to provide a response.

As previously advised, the area under application to be cleared has been assessed, taking into account the information you have provided and further information the Department of Water and Environmental Regulation (DWER) has obtained through consultation. In considering your application, the Chief Executive Officer of DWER must have regard to the clearing principles contained in Schedule 5 of the *Environmental Protection Act 1986* and any planning instruments or other matter the CEO considers relevant.

After finding the proposed clearing to be at variance to a number of these clearing principles, I have decided to refuse the application. The reasons for my decision are contained in the attached decision report.

If you disagree with the decision an appeal may be lodged with the Minister for Environment. If you choose to appeal, it must be in writing, setting out the grounds of your appeal, and be received by the Minister within 21 days of being notified of the decision. More information on lodging an appeal is available from the Office of the Appeals Convenor on telephone 6467 5190. Completed appeals should be posted or delivered to:

Office of the Appeals Convenor
Level 22 Forrest Centre
221 St George's Terrace, PERTH WA 6000
Tel: 6467 5190 Fax: 6467 5199
Email: admin@appealsconvenor.wa.gov.au
Web: www.appealsconvenor.wa.gov.au

If you intend to reapply for a clearing permit please ensure that all relevant approvals have been obtained and the potential environmental impacts outlined in the letter of 29 May 2017 have first been addressed.

If you have any queries regarding this decision, please contact A/ Manager Clearing Regulation Ms Emma Bramwell on 6364 7168.

Yours sincerely

Adrian Wiley
A/ SENIOR MANAGER
CLEARING REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

30 August 2017

Attached: Decision Report for application CPS 7196/1

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7196/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Mr Michael Rabbitt

1.3. Property details

Property: Lot 3361 on Deposited Plan 156362, Hill River
Local Government Authority: Shire of Dandaragan
DER Region: Midwest
DPaW District: Moora
LCDC: Dandaragan
Localities: Hill River

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
9.4	-	Mechanical Removal	Marron farm

1.5. Decision on application

Decision on Permit Application: Refusal
Decision Date: 30 August 2017
Reasons for Decision: This application for a clearing permit was received on 26 July 2016.

The 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 been concluded that the proposed clearing is at variance to clearing principles (a), (e), (f), (g), (h) and (i), may be at variance to clearing principles (b) and (c) and is not likely to be at variance to the remaining clearing principles.

The Delegated Officer determined that:

- The application area is a significant remnant of vegetation located within an extensively cleared area, and may form part of a significant ecological linkage that facilitates indigenous flora and fauna movement and gene flow across the landscape, including between areas of conservation estate.
- The vegetation within the application area is growing in association with a palusplain wetland with environmental values that are commensurate with a conservation category wetland. The palusplain wetland within the application area is hydrologically connected to the Hill River, which is located within the Hill River Nature Reserve. The proposed clearing may deteriorate the surface water quality of the palusplain wetland and Hill River through alteration of groundwater flow and salinity.
- The proposed clearing is likely to cause appreciable land degradation in the form of salinity and eutrophication.
- The application area may contain rare and priority flora.

On 29 May 2017, the applicant was advised of the identified environmental impacts, notified that the application was likely to be refused and given the opportunity to provide comment. As of 30 August 2017, no reply from the applicant has been received.

In making the decision to refuse the application, the Delegated Officer also had regard to outstanding planning approval from the Shire of Dandaragan and licence to take groundwater.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description
Two Beard vegetation associations are mapped within the application area:

- 1031 is described as a mosaic of hakea scrub-heath/ shrublands and banksia heath; and
- 1034 is described as a medium woodland of *Corymbia calophylla* (**marri**), *Eucalyptus wandoo* (**wandoo**) and *Eucalyptus accedens* (**powderbark**) (Shepherd et al., 2001).

During a site inspection conducted by the former Department of Environment Regulation (**DER**) (**DER site inspection**), it was determined that Beard vegetation association 1034 (medium woodland of marri, wandoo and powderbark) does not occur within the application area (DER, 2015).

Clearing Description
Mr Michael Rabbitt proposes to clear up to 9.4 hectares of native vegetation within a footprint area of 21.28 hectares for the purpose of a marron farm.

Vegetation Condition
Excellent; Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

To:

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

Vegetation condition was determined via aerial imagery and the DER site inspection (DER, 2015).

Comment
The proposed marron farm will comprise several rectangular ponds separated by corridors of native vegetation (Rabbitt, 2015a).

Vegetation within the application area has been historically cleared. The majority of vegetation within the application area is in an excellent condition (Keighery, 1994). Areas that are in a completely degraded to degraded condition (Keighery, 1994) include approximately 0.11 hectares cleared between 10 and 35 years ago, and one small area affected by salinity following historic clearing (DER, 2015; Rabbitt, 2015b).

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 application area consists of 9.4 hectares of native vegetation within a footprint area of 21.28 hectares. The majority of the vegetation proposed to be cleared within the application area is in good to excellent (Keighery, 1994) condition. The applicant advised that clearing will occur in areas with clay soils, and will avoid sandy areas associated with large *Banksia* spp. (Rabbitt, 2015a). The applicant advised that clearing will occur in long strips, separated by vegetated corridors (Rabbitt, 2015a).

Nine rare and 40 priority flora species have been recorded within the local area (10 kilometres radius). Habitat within the application area is consistent with the habitat requirements of five of the nine rare flora and 33 of the 40 priority flora species, which are therefore considered to potentially occur within the vegetation proposed to be cleared (Parks and Wildlife, 2015a).

A flora survey of the application area was undertaken on 30 January 2016 (Williams and Son, 2016a). Whilst the flora survey did not identify rare flora within the application area, the survey methodology was not consistent with the Environmental Protection Authority's (EPA) Technical Guidance *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016). In addition, the flora survey report includes species that are inconsistent with current taxonomy. Given the identified inaccuracies, the flora survey is not able to be relied upon in determining the presence or absence of rare and priority flora. The proposed clearing therefore may impact on priority and rare flora.

Five conservation significant fauna species have been recorded within the local area (10 kilometre radius) (Parks and Wildlife, 2007-). Given the habitat types present within the application area, three of these species may utilise the application area; Carnaby's cockatoo (*Calyptorhynchus latirostris;* endangered), woolly bush bee (*Hylaeus globuliferus*; priority 3) and the western brush wallaby (*Macropus irma*; priority 4).

No threatened ecological communities (TECs) or priority ecological communities (PECs) have been recorded within the local area. A DER site inspection identified that the application area is unlikely to contain vegetation consistent with a PEC or TEC (DER, 2015).

The application area forms part of an ecological linkage, connecting the Hill River Nature Reserve (75 metres north and 17 kilometres west), Coomallo Nature Reserve (715 metres north), approximately 512 hectare remnant (contingent to the south) and Badgingarra National Park (13 kilometres south-east). The Hill River Nature Reserve, Coomallo Nature Reserve, 512 hectare remnant and application area form a largely contiguous, 1300 hectare remnant of native vegetation. The greater the size of an area of remnant vegetation, the greater its capacity to maintain a larger and more viable suite of species (Molloy et al., 2009). Noting this, the application area together with adjoining vegetation is likely to support discrete fauna populations and is likely to support a high biodiversity of indigenous fauna.

The former Department of Parks and Wildlife (**Parks and Wildlife**) advised that the contiguity of the application area and wetland vegetation with surrounding native vegetation and the Hill River Nature Reserve is likely to support a regional ecological linkage and provide migration routes for faunal species and indicate that the area may support habitat suitable for many of the 61 locally recorded species (Parks and Wildlife, 2015b).

When core habitat reserves are isolated from one another by human land uses, the diversity of native species generally declines and the probability of species extinction increases. Ecological linkages and buffers contribute to the functioning and viability of existing conservation estate by establishing connectivity between conservation areas and other areas of native vegetation, contributing to the maintenance or restorability of one or more key ecological processes required to sustain the conservation areas (DER, 2014).

Based on the above, the proposed clearing is likely to increase habitat fragmentation within the local area. Given this the application area may be significant in the maintenance of biodiversity across the landscape.

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

A flora survey targeting rare and priority flora taxa, undertaken at the appropriate time of year by a suitably qualified botanist conducted in accordance with the EPA's Technical Guidance *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016) would determine the potential impacts to conservation significant flora.

Methodology

References:
DER (2014)
DER (2015)
EPA (2016)
Johnstone and Storr (1998)
Keighery (1994)
Molloy et al. (2009)
Parks and Wildlife (2007-)
Parks and Wildlife (2015a)
Parks and Wildlife (2015b)
Rabbitt (2015a)
Williams and Son (2016a)

GIS Databases:
SAC bio datasets (Accessed September 2016)

(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 may be at variance to this Principle

Fauna habitat within the application area consists of *Hakea* scrub-heath/ shrublands and *Banksia* heath (DER, 2015). A review of aerial imagery indicates that extensive areas have been previously cleared within the surrounding landscape, particularly along the Hill River which is located approximately 75 metres north of the application area. The application area is located within one of the few areas within which remnant vegetation occurs both north and south of the river.

As outlined in Principle (a), the application area forms part of an ecological linkage facilitating fauna movement through the landscape, and is likely to contain a high fauna diversity. The applicant advised that the clearing will occur in long strips separated by vegetation corridors (Rabbit, 2015a)

Five conservation significant fauna species have been recorded within the local area (10 kilometre radius) (Parks and Wildlife, 2007-). Given the habitat types present within the application area, three of these species may utilise the application area; Carnaby's cockatoo (*Calyptorhynchus latirostris*; endangered), woolly bush bee (*Hylaeus globuliferus*; priority 3) and the western brush wallaby (*Macropus irma*; priority 4).

The habitat requirements and biology of Carnaby's cockatoo are well documented (Valentine and Stock, 2008; Parks and Wildlife, 2013). The application area is located within the northern range of the species where habitat loss and range contraction are the most marked (Saunders, 1990; Johnstone and Storr, 1998). Confirmed nesting sites have been recorded approximately 800 metres, four kilometres and five kilometres from the application area. No large eucalyptus trees of an age and size suitable as potential nesting habitat occur within the application area (DER, 2015).

The vegetation within the application area is consistent with foraging habitat for Carnaby's cockatoo (DER, 2015). Parks and Wildlife advised that Carnaby's cockatoo is known to forage, roost and nest in vegetation surrounding the application area (Parks and Wildlife, 2015a; 2015c). As the application area contains some foraging habitat for Carnaby's cockatoo and is located within close proximity to known breeding sites, the proposed clearing may impact vegetation considered to be critical for the species.

The applicant advised that a stand of *Banksia* species occurring on sandy soil along the southern boundary of the application area will not be cleared (Rabbitt, 2015c), however *Banksia* spp., *Hakea* spp. and *Grevillea* spp. occur elsewhere within the application area and will be impacted by the proposed clearing. In addition, the applicant also intends to erect artificial nest boxes for the Carnaby's Cockatoos (Williams and Son, 2016a).

The woolly bush bee is known to feed on the flowers of *Adenanthos cygnorum* and *Adenanthos flavidiflorus*, but has also been collected from the flowers of *Grevillea cagiana* (*Grevillea* sp. aff. *hookeriana*), *Banksia grossa* and *Banksia attenuata* (Parks and Wildlife, 2015c). The distribution of the woolly bush bee is restricted to the locations of foraging plant species, with the main threat to this species being fire and clearing activities. Given the presence of suitable habitat within the application area and elsewhere within the property (DER, 2015), the woolly bush bee is likely to occur. If the woolly bush bee is present, the proposed clearing may impact this species on a local scale (Parks and Wildlife, 2015c). However, as the applicant proposes to maintain vegetated corridors between cleared strips (Rabbitt, 2015c), the proposed clearing is not likely to contain significant habitat for this species.

The western brush wallaby is likely to utilise habitat within the application area for foraging and movement between vegetated areas. However, given its conservation status and as it is not likely to rely solely on habitat within the application area, the proposed clearing is not likely to contain significant habitat for the species.

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

Methodology

References:
DER (2015)
Johnstone and Storr (1998)
Parks and Wildlife (2007-)
Parks and Wildlife (2013)
Parks and Wildlife (2015a)
Parks and Wildlife (2015c)
Rabbitt (2015a)
Rabbitt (2015c)
Saunders (1990)
Valentine and Stock (2008)
Williams and Son (2016a)

GIS Databases:
Parks and Wildlife tenure
SAC bio datasets (Accessed September 2016)

(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

A total of nine rare flora have been recorded within the local area (10 kilometre radius). Based on the vegetation types present within the application area and the known habitat requirements of the rare flora species, each has the potential to occur within the application area (Western Australian Herbarium, 1998-).

A flora survey of the application area was undertaken on 30 January 2016 (Williams and Son, 2016a). As discussed under Principle (a), the methodology of the flora survey is not able to be relied upon to determine the presence or absence of conservation significant flora on site.

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

A flora survey targeting rare and priority flora taxa, undertaken at the appropriate time of year by a suitably qualified botanist, in accordance with EPA's Technical Guidance *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016), would determine the potential impacts to conservation significant flora.

Methodology

References:
EPA (2016)
Western Australian Herbarium (1998-)
Williams and Son (2016a)

GIS Databases:
SAC bio databases (Accessed September 2016)

(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 not likely to be at variance to this Principle

There are no TECs mapped within the local area (10 kilometre radius). A site inspection identified the application area as a mosaic of *Hakea* scrub-heath/ shrublands and *Banksia* heath (DER, 2015). The site inspection identified that the application area is unlikely to contain vegetation consistent with a TEC (DER, 2015).

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

Methodology

References:
DER (2015)

GIS Databases:
SAC bio datasets (Accessed September 2016)

(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 is at variance to this Principle

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).

The local area (10 kilometre radius) retains approximately 33.2 per cent native vegetation cover (11,172.6 hectares). Clearing the vegetation within the application area will reduce the remaining native vegetation cover by 0.028 per cent.

The application area occurs within the Geraldton Sandplains Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 45 per cent of the pre-European vegetation remains. The application area is mapped as Beard vegetation association 1031, which retains 34.45 per cent pre-European vegetation within the Geraldton Sandplains IBRA bioregion (Government of Western Australia, 2015). Vegetation statistics are found in Table 1.

Aerial imagery indicates that extensive areas have been previously cleared along the Hill River, and the application area occurs in the only inland area where vegetated remnants occur both north and south of the river. Given this and the amount of vegetation remaining within the local area and the function of the vegetation as an ecological linkage, the proposed clearing is considered to be significant as a remnant within an extensively cleared landscape.

The application area is located approximately 700 metres south of the Coomallo Nature Reserve, which covers approximately 8,647 hectares of native vegetation north of the Hill River. The application area is bordered by cleared land along its southern boundary, and is 75 metres south of Hill River. Therefore, the application area is likely to function as an ecological linkage. This ecological linkage is likely to be used by both flora and fauna for the movement and/or gene flow in both an east to west direction, and between vegetated remnants north and south of the river.

Given the high quality of vegetation within the application area, location within an extensively cleared landscape, availability of suitable habitat for conservation significant flora and fauna, and value as an ecological linkage, the application area is a significant remnant.

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

Table 1: Vegetation statistics

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Geraldton Sandplains	3,136,038	1,404,375	45	40
Local government authority*				
Dandaragan	671,022	296,632	44	42
Beard Vegetation Association in Bioregion*				
1031	241,350	83,155	34	44
Local Area				
10 kilometre radius	33,646	11,173	33.2	n/a

Methodology

References:
Commonwealth of Australia (2001)
*Government of Western Australia (2015)

GIS Databases:
Hydrography, linear
Parks and Wildlife tenure
Remnant 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 at variance to this Principle

The application area is located within a mapped palusplain wetland associated with the Hill River. Wetland vegetation was identified within the proposed clearing area during a site inspection undertaken by DER (2015).

The former Department of Water (**DoW**) advised "The proposal is within the Palusplain of the Hill River, as mapped in [Parks and Wildlife's] Geomorphic Wetlands – Cervantes-Eneabba dataset. Palusplain is seasonally waterlogged flat land that readily transports any applied nutrients or other contaminants to adjacent water bodies ... The Hill River and Estuary is recognised as a high-value waterway, including the associated conservation values of the adjacent riparian vegetation. It is recommended that [the applicant] be advised that the current site is not suitable for the proposal, that it would involve clearing of riparian vegetation, and that an alternative pond location should be investigated. It is suggested that the proposal would be more appropriately situated in the south-eastern or south-western part of the property outside of the Palusplain ... No riparian zone vegetation should be cleared. This means that the proposed clearing extent and location is not supported by [DoW]" (DoW, 2015).

Parks and Wildlife advised that based on the available information it is reasonably likely that an on-site evaluation would result in the full extent of the palusplain wetland UFI 231 being assigned a management category of 'conservation', and that the proposed clearing is likely to directly and indirectly impact approximately 20 hectares of palusplain wetland that may support values commensurate with a conservation category wetland (Parks and Wildlife, 2015b).

The proposed clearing is likely to have a direct impact on riparian vegetation as well as indirect impacts to the adjoining riparian vegetation of the Hill River system, including the adjacent contiguous wetlands.

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

Methodology

References:
DER (2015)
DoW (2015)
Parks and Wildlife (2015b)

GIS Databases:
Geomorphic wetlands Cervantes Eneabba
Hydrography, linear

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

Comments

Proposed clearing is at variance to this Principle

The proposed clearing has been mapped within the following land sub-systems (Schoknecht et al., 2004):

- Nylagarda 2 Subsystem (64.3 per cent of application area) which is described as poorly drained areas - Hill River - hardpan and saline areas;
- Yerramullah 3 Subsystem (27.7 per cent of application area) which is described as colluvial slopes and some plateau remnants, very gently to gently inclined hillslopes and sand filled minor valleys; pale and yellow deep sands, pale sandy gravels, shallow gravel over duricrust, some sandy duplexes and sandy earths; and
- Yerramullah 2 Subsystem (eight per cent of application area) which is described as plateau residuals, very gently to gently inclined hillcrest and hillslopes; pale sandy gravels, shallow gravel over duricrust, gravelly pale deep sand, pale and yellow deep sands.

The application area is located on an area of mostly flat topography, with an incline from 100 metres to 110 metres above sea level from north to south.

The cleared area has been mapped within land degradation risk categories (Schoknecht et al., 2004). Of particular note:

- Nylagarda 2 Subsystem: 50-70 per cent of the map unit has a high to extreme wind erosion risk, 70 per cent of the map unit has a moderate to high salinity risk and a high subsurface acidification risk or is presently acid, and 30-50 per cent of the map unit has a moderate to very high waterlogging risk;
- Yerramullah 3 Subsystem: greater than 70 per cent of the map unit has a high to extreme wind erosion risk, 30-50 per cent of the map unit has a moderate to high salinity risk or is presently saline, 70 per cent of the map unit has a high subsurface acidification risk or is presently acid, 30-50 per cent of the map unit has a high to extreme phosphorus export risk; and
- Yerramullah 2 Subsystem: 30-50 per cent of the map unit has a high to extreme wind erosion risk, 10-30 per cent of the map unit has a high to extreme water erosion risk, 30-50 per cent of the map unit has a moderate to high salinity risk or is presently saline, 10-30 per cent of the map unit has a high subsurface acidification risk or is presently acid, and 10-30 per cent of the map unit has a high to extreme phosphorus export risk.

Areas with deep sandy soils such as those within map unit 224Ye_3 are likely to be prone to wind erosion during high winds following the removal of vegetation. However, the majority of the application area is mapped as map unit 224Ny_2, which is likely to be less susceptible to wind erosion. The Commissioner of Soil and Land Conservation (**CSLC**) advised that the risk of wind erosion causing land degradation as a result of the proposed clearing is low (CSLC, 2015).

The application area is located within the palusplain of Hill River. Soils associated with map unit 224Ny_2 have a low permeability to rainfall, with waterlogging following rainfall characteristic of the hydrology associated with the palusplain wetland (DoW, 2015). While the proposed clearing is likely to increase the occurrence of waterlogging, given that waterlogging is characteristic of palusplain environments, the proposed clearing is unlikely to cause appreciable land degradation via waterlogging (CSLC, 2015).

A site inspection conducted by the former Department of Agriculture and Food Western Australia (**DAFWA**) observed evidence of salinity both within and outside the north-western corner of the application area (CSLC, 2015). This was also noted on the DER site inspection (DER, 2015). The applicant advised that the majority of the application area has been historically cleared, which has led to salinity within these low-lying areas.

The CSLC advised "The assessment report indicates that salinity is occurring in the area and that the risk of this form of land degradation arising from the clearing the vegetation is moderate to high...Therefore, I conclude that the proposed land clearing is likely to cause appreciable land degradation in the forms of salinity and eutrophication and is likely to be at variance with principle g" (CSLC, 2015).

DAFWA's land degradation report also indicates that the risk of water erosion causing land degradation is low (CSLC, 2015). Given the application area is located over a flat area within the landscape, it is unlikely that the proposed clearing will result in land degradation via water erosion.

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

Methodology

References:
CSLC (2015)
DoW (2015)
DER (2015)
Schoknecht et al. (2004)

GIS Databases:
Geomorphic wetlands Cervantes Eneabba
Land degradation datasets

(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 located approximately 75 metres south of the Hill River Nature Reserve, and occurs within a largely continuous vegetated corridor that is connected to the south side of the Hill River Nature Reserve for two to three kilometres. The application area is adjacent to (and downslope of) a DAFWA heritage site.

As outlined in Principles (a) and (e), the application area forms part of an ecological linkage facilitating fauna and flora movement through the landscape. The clearing of 9.4 hectares within a footprint area of 21.28 hectares is likely to impede fauna movement both across the application area and between the Hill River Nature Reserve, Coomallo Nature Reserve and vegetation east and west of the application area.

Ecological linkages between areas of conservation value are important for enabling fauna to continue to move through the landscape and between reserves. This is vital both for species that are nomadic and for maintaining populations of less mobile species that may otherwise become locally extinct in individual reserves. Remnant patches within the vicinity of large contiguous areas of native vegetation (outliers) are more likely to support wildlife than more isolated patches – with greater separation distances fewer species will have the mobility necessary to maintain access (DER, 2014).

As discussed under Principle (a), Parks and Wildlife advised that the contiguity of the application area and wetland vegetation with surrounding native vegetation and the Hill River Nature Reserve is likely to support a regional ecological linkage and provide migration routes for faunal species and indicate that the area may support habitat suitable for many of the 61 locally recorded species (Parks and Wildlife, 2015b).

The proposed clearing and development also has the potential to cause salinity and disturb acid sulphate soils, which may impact water quality within the Hill River. As discussed under Principle (f), DoW advised that "Palusplain is seasonally waterlogged flat land that readily transports any applied nutrients or other contaminants to adjacent water bodies...The Hill River and Estuary is recognised as a high-value waterway, including the associated conservation values of the adjacent riparian vegetation. It is recommended that [the applicant] be advised that the current site is not suitable for the proposal, that it would involve clearing of riparian vegetation, and that an alternative pond location should be investigated. It is suggested that the proposal would be more appropriately situated in the south-eastern or south-western part of the property outside of the Palusplain" (DoW, 2015).

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

Methodology

References:
DAFWA Heritage
DER (2014)

DoW (2015)
Parks and Wildlife (2015b)

GIS Databases:
Imagery
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 20 hectares of the application footprint (approximately 95 per cent) is located within a palusplain wetland associated with the Hill River, which is approximately 75 meters north of the application area. Palusplain wetlands are characterised by seasonally waterlogged flats, which is consistent with the soil sub-systems mapped over the application area.

The land degradation risk categories for the mapped soil sub-systems are discussed under Principle (g).The majority of the application area has been mapped as having a risk of subsurface acidification or is presently acid, and the whole application area has been mapped as having a risk of salinity or is presently saline (Schoknecht et al., 2004).

As discussed under Principle (f), DoW advised "The proposal is within the Palusplain of the Hill River, as mapped in [Parks and Wildlife's] Geomorphic Wetlands – Cervantes-Eneabba dataset...The Hill River and Estuary is recognised as a high-value waterway, including the associated conservation values of the adjacent riparian vegetation. It is recommended that [the applicant] be advised that the current site is not suitable for the proposal, that it would involve clearing of riparian vegetation, and that an alternative pond location should be investigated. It is suggested that the proposal would be more appropriately situated in the south-eastern or south-western part of the property outside of the Palusplain ... No riparian zone vegetation should be cleared. This means that the proposed clearing extent and location is not supported by [DoW]" (DoW, 2015).

As discussed under Principle (g), the CSLC advised "The assessment report indicates that salinity is occurring in the area and that the risk of this form of land degradation arising from the clearing the vegetation is moderate to high...Therefore, I conclude that the proposed land clearing is likely to cause appreciable land degradation in the forms of salinity and eutrophication and is likely to be at variance with principle g" (CSLC, 2015).

Drainage from the application area is north towards the Hill River. The proposed clearing may cause deterioration in the quality of surface water through activating acid sulphate, increasing salinity and causing eutrophication. Given the application area is located within a palusplain wetland, any deterioration in water quality is likely to affect downstream areas.

Impacts to the palusplain wetland and the adjacent Hill River would be further informed by a hydrogeology study that addressed the potential for impacts to the palusplain and adjacent Hill River as a result of the proposed clearing.

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

Methodology

References:
CSLC (2015)
DoW (2015)
Schoknecht et al. (2004)

GIS Databases:
Geomorphic wetlands Cervantes Eneabba

(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

The mapped land sub-systems within the application area and land degradation risk categories are discussed under Principle (g). Less than three per cent of the mapped land sub-systems are mapped as having a high risk of flooding (Schoknecht et al., 2004).

The application area is located within a palusplain wetland associated with the Hill River, located approximately 75 metres north of the application area. The application area is likely to become seasonally waterlogged during winter months, however the proposed clearing is unlikely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology

References:
Schoknecht et al. (2004)

GIS Databases:
Geomorphic wetlands Cervantes Eneabba

Hydrography, linear
Imagery

Planning instruments and other matters.

Comments

The application is to clear up to 9.4 hectares of native vegetation within Lot 3361 on Deposited Plan 156362, Hill River, for a marron farm. The applicant has previously applied to clear the application area for horticulture (CPS 6716/1). On 8 December 2015 the applicant was sent a letter outlining the significant environmental impacts identified in the assessment of application CPS 6716/1. On 25 January 2016 the applicant withdrew application CPS 6716/1. Applications CPS 6716/1 and CPS 7196/1 are for the same application area.

The Department of Fisheries advised that the proposed activities require an aquaculture licence under section 92 of the *Fish Resources Management Act 1994* once marron are ready for sale (Department of Fisheries, 2015).

DoW advised that the applicant has applied for a licence to take groundwater, which is on hold pending the finalisation of the clearing permit process (DoW, 2015). In regards to impacts as a result of the proposed clearing activity, DoW advised that no riparian zone vegetation should be cleared, and that the proposed clearing would be more appropriately situated in the south-eastern or south-western parts of the property, outside the mapped palusplain wetland (DoW, 2015). DoW also advised that a native vegetation buffer should be retained between the proposed clearing and the palusplain wetland, and recommended a 50 metre buffer, measured from the margin of the mapped palusplain wetland and the proposed clearing and subsequent proposed land use within seasonally waterlogged soil may expose acid sulphate soils if they are present (DoW, 2015).

According to available databases, the application area occurs within areas mapped with a high subsurface acidification risk (Schoknecht et al., 2004).

The Shire of Dandaragan advised that use of Lot 3361 on Deposited Plan 156362 for a marron farm is not permitted unless planning approval has been granted (Shire of Dandaragan, 2015). At present, no planning approval has been applied for (Shire of Dandaragan, 2016). An application for planning approval must demonstrate that it does not impact adversely upon adjoining rural activity, is environmentally acceptable, and meets the Scheme objectives for the rural zone; this would include demonstration that the land use would not result in an increase of nutrient release into the soil and water, and will be subject to all other necessary approvals (Shire of Dandaragan, 2015). The Shire advised that the clearing of land in close proximity to Hill River may have a detrimental impact on the Hill River catchment (Shire of Dandaragan, 2015; Shire of Dandaragan, 2016).

The CSLC, DoW and Parks and Wildlife advised that the construction and operation of ponds for aquaculture has the potential for nutrient transport off-site, causing eutrophication and pollution within the adjacent Hill River (CSLC, 2015; DoW, 2015; Parks and Wildlife, 2015b). It is noted, however, that the risk of eutrophication is dependent on the management measures implemented as part of operational activities (CSLC, 2015).

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

The clearing permit application was advertised in *The West Australian* newspaper on 29 August 2016 with a 21 day submission period. No public submissions were received in relation to this application.

Methodology

References:
Commissioner of Soil and Land Conservation (2015)
Department of Fisheries (2015)
DoW (2015)
EPA (2016)
Keighery (1994)
Parks and Wildlife (2015b)
Shire of Dandaragan (2015)

GIS Databases:
Aboriginal Sites Register System

4. Applicant's Submissions

Comments

A flora survey was provided in support of application CPS 7196/1. The flora survey report indicates that the vegetation is in very good (Keighery, 1994) condition, and states that there appears to be no evidence of *Phytophthora* sp. (dieback) infestation, that this status be maintained through implementing dieback hygiene practices, and that the main excavator will be thoroughly cleaned of soil debris prior to entering the project site (Williams and Son, 2016a). The flora survey report contains the following recommendations and effects:

Flora survey (Williams and Son, 2016a)	Department's comment
"The area surveyed is somewhat degraded in most sections and the loss of a small area of the wettest sections will have no great effect on the traditional flora or [f]auna of the area".	The condition of vegetation under application and assessment of the impact to flora and fauna is acknowledged in the assessment against clearing principles (a), (b), (c), (d), (e) and (h).
"The clearing of the large areas of adjoining farmland to the south would have had a far greater effect on flora, fauna and rising water tables".	Although the amount of vegetation remaining in the local area is taken into consideration, the impact of previous clearing is beyond the scope of an assessment of an application to clear native vegetation under section 51O of the *Environmental Protection Act 1986.*
"The [applicant] intends not to remove any woodland species that are above 2.5 metres high. This is to preserve habitat for [a]vian fauna. This includes the species [*Eucalyptus todtiana*]".	Although this may preserve some fauna habitat value, black cockatoo foraging habitat will still be impacted. The height of vegetation is not a determining factor in its significance as foraging habitat for black cockatoos. The application areas value as habitat for fauna is assessed under principle (b).
"The dry area in the [s]outh west corner evident on the map in section 4 will be left intact as this soil type is not suitable for pond construction. The area also is the most typical representation of woodland that historically occurred in this area".	The vegetation within this location does not fall within the application area and was not removed as a measure to minimise the impacts of clearing native vegetation. The application area has not altered from CPS 6716/1.
"There should be no noticeable effect on the level of the water table in the Hill River area as a result of the removal of the mainly sedge and rush species. The removal of the transpiration by the plant species will be replaced by evaporation that will occur in the aeration process that is used to increase and maintain satisfactory oxygen levels in the pond water". "There should be no change in the salinity level of the Hill River area. The small area cleared for pond construction should have no noticeable effect on the salt levels of this large body of water".	The comments on water quality are not quantitative and do not address the impacts as identified by the CSLC and assessed in the assessment against clearing principles (g) and (i), planning instruments and other matters.
"When the project is up and running [the applicant] intends to erect artificial nest boxes for the Carnaby's [cockatoo]. There appears to be a large number that feed on the large [*Eucalyptus/Corymbia*] species along Cantabilling Road. These species do not lend to nesting sites therefore the use of artificial nest boxes can only be advantageous for this species".	The statement on the preferred breeding habitat of Carnaby's cockatoo is erroneous. It is also noted that the assessment against the clearing principles did not identify potential Carnaby's cockatoo breeding habitat within the application area therefore, impacts to breeding habitat are not required to be offset.

It is noted that some of the findings in the flora survey report are inconsistent with or contrary to the findings of DER's preliminary assessment, and require further clarification. As assessed under principle (a), the flora survey methodology was not consistent with the EPA's Technical Guidance *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016), and as such the flora survey is not able to be relied upon to determine the presence or absence of conservation significant flora within the application area.

In support of application CPS 7196/1, the applicant also provided a report addressing the clearing impacts identified during the assessment of application CPS 6716/1. This report notes the following:

Report (Williams and Son, 2016b)	Department's comment
"The flora has been surveyed and priority and [declared rare flora] species searched for. None were located".	As stated above the flora survey is not able to be relied upon to determine the presence or absence of conservation significant flora within the application area.
"It is obvious that the water table has risen in the [application] area over the last 40 years with land clearing. This has resulted in a reduction in the number of species". "The original Kwongan to Woodland flora has been all but replaced by the sedge and rush species".	No quantitative data has been provided in support of these statements. The potential for the application area to impact on local and regional water quality has been assessed under clearing principle (g) and (i). It is noted that the application area is mapped within a wetland and sedges and rush species would be expected to be found in this environment.

"No water will be extracted to fill the ponds and non pumped out with the ponds being constructed to make use of the static water level. The system will have a non-measurable effect on the surrounding massive watertable. The water quality of the palusplain wetland and Hill River will not be [a]ffected as no water will be extracted or contributed to the surrounding area".	(refer above)
"There is marginal value as a linkage as to the south is highly cleared cattle grazing land. The frog population should suffer minimal disturbance as the actual area of [p]onds is insignificant in comparison to the total wet areas nearby". "There does not appear to be any evidence of nest sites for water birds".	The significance of the application area to indigenous fauna has been assessed within clearing principles (a), (b) and (e).
"Salinity will not be altered as the evaporation on the area will remain constatt as the ponds will be constructed in areas where surface water is currently evident. The problem of eutrophication will be managed by emptying the waste products from the bottom of the pond by pumping out and drying the material". "As the construction of the ponds will not involve movement of soils [off] site[, no] problem is envisaged with the slightly acidic soils".	These measures relate predominantly to the end land use impacts on water quality which is beyond the scope of this assessment.

On 29 May 2017, a DER Delegated Officer wrote to the applicant, outlining the environmental impacts identified during the assessment of the application (ref. A1442893):

- The vegetation within the application area is growing in association with a palusplain wetland with environmental values that are commensurate with a conservation category wetland. The palusplain wetland within the application area is hydrologically connected to the Hill River, which is located within the Hill River Nature Reserve. The proposed clearing may deteriorate the surface water quality of the palusplain wetland and Hill River through alteration of groundwater flow and salinity. DoW recommended a minimum 50 metre buffer to the palusplain wetland to reduce impacts from the proposed clearing.
- The application area is a significant remnant of vegetation located within an extensively cleared area, and may form part of a significant ecological linkage that facilitates indigenous flora and fauna movement and gene flow across the landscape, including between areas of conservation estate.
- The proposed clearing is likely to cause appreciable land degradation in the form of salinity and eutrophication.
- The application area may contain rare and priority flora. A number of rare and priority flora taxa are known to occur within the local area, and noting the habitat requirements of these species and the vegetation and soil types present within the application area, these species may occur within the application area.

The Delegated Officer's letter advised the applicant of DER's intent to refuse to grant a clearing permit under section 51E(5)(b) of the *Environmental Protection Act 1986*, and invited the applicant to provide any additional information demonstrating the applicant's ability to avoid or minimise the impacts and variances identified within 30 days. No response was received from the applicant in relation to this matter.

Methodology References:
Williams and Son (2016a)
Williams and Son (2016b)

5. References

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Shire of Dandaragan (2016) Advice received from the Shire of Dandaragan on 21 September 2016. DER ref: A1167312.
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