Government of Western Australia
Department of Environment Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6084/3
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Mowanjum Aboriginal Corporation

1.3. Property details

Property: LOT 253 ON PLAN 238348, MEDA
Local Government Authority: SHIRE OF DERBY-WEST KIMBERLEY
DER Region: North West
DPaW District: WEST KIMBERLEY
Localities: MEDA

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
223	-	Mechanical Removal	Agriculture

1.5. Decision on application

Decision on Permit Application: Refusal
Decision Date: 20 October 2016
Reasons for Decision:

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

The Delegated Officer determined that the application area may contain significant habitat for indigenous fauna including species of conservation significance, may cause appreciable land degredation, may cause deterioration in the quality of surface water, and may impact on the environmental values of a nearby conservation reserve. In response to the Delegated Officers request of 20 September 2016 for additional information on these matters, the applicant, on 29 September 2016, provided a submission detailed within this report and requested the decision be made on the application without delay.

In making the decision to refuse the application, the Delegated Officer had regard to advice from the Department of Water that a licence to extract groundwater is required. State and other relevant policies have been taken into consideration in this decision.

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
One Beard vegetation association is mapped within the application area (Shepherd et al., 2001): • 764: Shrublands, pindan; *Acacia eriopoda* and *A. tumida* shrubland with scattered low bloodwood and *Eucalyptus setosa* over ribbon and curly spinifex. A site inspection undertaken by the Department of Parks and Wildlife (Parks and Wildlife) on 7 May 2014 identified the vegetation within the application area as: • medium open woodland/shrubland of *Acacia* sp., *Eucalyptus* sp., *Corymbia* sp. and *Bauhinia cunninghamii* over *Sida* sp., curly spinifex and other unidentified grasses of moderate density. A flora and fauna survey covering an area of 208,566 hectares, including the application area, mapped the application area as (Ecologia, 2015):	The applicant proposes to clear up to 223 hectares of native vegetation within a project footprint of approximately 1334 hectares for the purpose of pivot irrigation and dryland cropping.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).	Vegetation condition was determined during a site inspection of the project footprint, undertaken by Parks and Wildlife on 7 May 2014 (Parks and Wildlife, 2014).

- *Corymbia greeniana* low closed woodland over *Acacia tumida* var. *tumida* and *Grevillea pyramidalis* tall sparse shrubland over *Sorghum timorense* and *Chrysopogon pallidus* low closed tussock grassland; and
- *Erythrophleum chlorostachys* and *Corymbia greeniana* low sparse woodland over *Dodonaea hispidula* var. *arida* and *Flueggea virosa* subsp. *melanthesoides* mid open shrubland over *Sorghum timorense* low closed tussock grassland.

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 may be at variance to this Principle

The applicant proposes to clear up to 223 hectares of native vegetation within a project footprint of approximately 1,334 hectares for the purpose of pivot irrigation and dryland cropping. The application area is comprised of a northern portion (footprint of approximately 505 hectares) and a southern portion (footprint of approximately 829 hectares).

The application area is located within the Dampierland Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, which is characterised by acacia thickets with scattered trees, grasslands, and savannahs over extensive plains, ranges and gorges (Bastin and ACRIS Management Committee, 2008). The Dampierland bioregion retains approximately 99 per cent of its pre-European extent of native vegetation cover (Government of Western Australia, 2015). The application area is mapped as Beard vegetation association 764, which is well-represented within the Dampierland bioregion (Government of Western Australia, 2015).

Based on aerial imagery, the local area (defined as a 20 kilometre radius around the application area) is well vegetated and retains an estimated 99 per cent of the pre-European extent of native vegetation cover.

A fauna survey of a 208,566 hectare area, including the application area, mapped the fauna habitat within the application area as *Acacia* shrubland characterised by tall shrubland of *Acacia tumida* var. *tumida* and *Grevillea pyramidalis*, with thickets of *Acacia tumida* var. *tumida* in places, and a ground cover of tussock grasses on sandy soils (Ecologia, 2015). Minor drainage lines cut through this habitat type in some areas (Ecologia, 2015). The fauna survey determined that 88 fauna species of conservation significance have the potential to occur within the area, of which three mammals, 24 birds and 29 invertebrates have been assessed as having a medium to high likelihood of occurrence (Ecologia, 2015). Two of these mammals are listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act).

The greater bilby (*Macrotis lagotis*) is listed as vulnerable under the WC Act and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The fauna survey determined that suitable habitat for this species occurs within the survey area (*Acacia* shrubland) and that there are a number of recent regional records of this species (Ecologia, 2015). On this basis it is considered that the application area may support this species.

The northern quoll (*Dasyurus hallucatus*) is listed as endangered under the WC Act and EPBC Act. There are several recent records (2001-16) of the species within the local area (Parks and Wildlife, 2016). The fauna survey determined that the species may use the grassy savannah and open savannah woodland habitat types identified within the application area for foraging and dispersal. Given this, the application area may support this species. Given the biological lifecycle of this species as described in Hill and Ward (2010), it is considered that the proposed clearing has the potential to have a significant impact on any local population of the species.

The fauna survey recorded the avian species rainbow bee-eater (*Merops ornatus*, listed as migratory under the WC Act), bush stone-curlew (*Burhinus grallarius*, listed as Priority 4) and pictorella mannikin (*Heteromunia pectoralis*, listed as Priority 4) (Ecologia, 2015). The application area contains suitable habitat for these species, however noting that the fauna habitat recorded within the application area is well represented within the local area, it is considered that the application area is unlikely to comprise significant habitat for these species. Migratory bird species may utilise habitat within the application area for opportunistic foraging, however are unlikely to be specifically reliant on habitats within the application area. Noting the extent of the proposed clearing and the size of the project footprint, it is considered that the proposed clearing is likely to cause habitat fragmentation on a local scale that may impede fauna movement through the landscape for species with small home ranges or low dispersal ability.

A level 1 flora survey of a 208,566 hectare area, including the application area, recorded 161 flora taxa in the survey area (Ecologia, 2015). No priority of threatened ecological community was recorded within the survey area (Ecologia, 2015). Of the 161 taxa recorded, eight could not be fully identified to species level or equivalent, and five species of priority flora were identified including *Eriochloa fatmensis* (P3), *Gomphrena cucullata* (P3), *Goodenia sepalosa* var. *glandulosa* (P3) and *Triodia caelestialis* (P3) (Ecologia, 2015). Each of these priority species are recorded as Priority 3 by the Department of Parks and Wildlife (Parks and Wildlife). It was also determined that a further 10 priority flora species have a medium to high likelihood of occurrence (Ecologia, 2015). The flora survey involved the assessment of 17 releves within the survey area, with a survey effort of 10 person days. Given the broad nature of the flora survey it is considered to be insufficient to confirm the presence or absence of rare flora within the application area.

No rare flora species have been recorded within the local area. This may be on account of insufficient data for the area. Parks and Wildlife advised that given the limited survey data for the region, a flora survey would be required in order to determine the proposed impact on conservation significant flora (Parks and Wildlife, 2016).

Based on the size of the project footprint, the extent of clearing proposed and the potential for conservation significant fauna and flora species to occur within the application area, it is considered that the application area may comprise a high level of biological diversity on a local or regional scale.

A Department of Environment Regulation (DER) Delegated Officer wrote to the applicant, advising (among other things) that the application area may contain significant habitat for the greater bilby and northern quoll, and may include priority flora species. In response the applicant provided the following information relevant to this Principle:

- In respect to fauna generally, the applicant submitted that DER's assessment of Principle (b) for this application differs significantly from its assessment for Clearing Permit CPS 6084/1 (July 2014). The applicant noted that in the decision report for Clearing Permit CPS 6084/1, DER concluded that the proposed clearing is not likely to be at variance to the Principle, and recognised that the local area retains approximately 90 per cent native vegetation cover and that suitable fauna habitats are located in the native vegetation surrounding the application area. The applicant advised that the extent of native vegetation in the local area has not changed, and that DER should have reached the same conclusion for this application that the proposed clearing is not likely to be at variance to Principle (b). The applicant contended that spending resources on targeted fauna surveys is unjustified taking the above into account, and that the risk is low and DER should proceed to grant a clearing permit.
- In respect to the greater bilby, the applicant submitted that the application area contains broad *Acacia* shrubland as described by Ecologia (2015), and that as this habitat type covers an expansive area (29,609 hectares) of the Oil Basins Limited survey area, the proposed clearing of 223 hectares has low risk to the species. The applicant noted that the National Recovery Plan for the Greater Bilby (2006) outlines a number of key threats to the species, and was of the view that there appear to be greater threats to the species than presented by the proposed clearing. The applicant contended that a requirement to undertake survey work is nonsensical given the extent of the proposed clearing in a substantially uncleared landscape, and acknowledged that the situation could be viewed differently if the proposed clearing was located within a fragmented or moderately to highly-cleared landscape. The applicant submitted that the biodiversity knowledge of the local Aboriginal people should be taken into account, which indicates that the application area does not contain significant habitat for this species.
- In respect to the northern quoll, the applicant noted that the report by Ecologia (2015) and the National Recovery Plan for the Northern Quoll (2010) indicate that potential critical habitat for this species is located to the south-east of the Oil Basins Limited survey area, which is located more than 60 kilometres from the application area. The applicant advised that no evidence of the northern quoll has been found on the property.
- In respect to priority flora, the applicant submitted that extent of the proposed clearing and corresponding risk does not justify a targeted flora and vegetation survey, and that DER should note the area to be cleared is heavily grazed.

The assessment of Principle (a) in relation to Clearing Permit CPS 6084/1 (and /2) considered the impacts of the proposed clearing of 76 hectares of native vegetation, and found that the vegetation within the application area was in good (Keighery, 1994) condition and that the proposed clearing may impact priority flora associated with watercourses. The assessment concluded that the proposed clearing may be at variance to Principle (a). Clearing Permit CPS 6084/1 (and /2) was granted subject to conditions including a requirement that the Permit Holder does not clear native vegetation within 100 metres of riparian vegetation.

The assessment of the current application notes the size of the application footprint (1,334 hectares) and found that the application area may support the greater bilby and northern quoll, and may contain a number of priority flora species known from similar habitats as found within the application area. In the absence of on-ground surveys to confirm otherwise, a precautionary approach has been taken in finding that the proposed clearing may be at variance to this Principle.

Taking into account the applicant's response, and noting the size of the project footprint, the extent of clearing proposed and the potential for conservation significant fauna and flora species, it is considered that the application area may comprise a high level of biological diversity.

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

Targeted surveys undertaken at appropriate times by suitably-qualified persons would determine whether the proposed clearing is likely to impact on any conservation significant species, and to guide appropriate management measures to mitigate impacts.

Methodology

References:

Bastin and ACRIS Management Committee (2008)
Ecologia (2015)
Government of Western Australia (2015)
Hill and Ward (2010)
Parks and Wildlife (2016)

GIS Database:
SAC bio datasets (Accessed August 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

A site inspection of the project footprint undertaken by Parks and Wildlife identified the vegetation within the application area as medium open woodland/shrubland of *Acacia* sp., *Eucalyptus* sp., *Corymbia* sp. and *Bauhinia cunninghamii* over *Sida* sp., curly spinifex and unidentified grasses of moderate density in a good (Keighery, 1994) condition (Parks and Wildlife, 2014). The local area (20 kilometre radius) retains approximately 99 per cent native vegetation cover.

A fauna survey of a 208,566 hectare area, including the application area, mapped the fauna habitat within the application area as *Acacia* shrubland characterised by tall shrubland of *Acacia tumida var. tumida* and *Grevillea pyramidalis*, with thickets of *Acacia tumida* var. *tumida* in places, and a ground cover of tussock grasses on sandy soils (Ecologia, 2015). Minor drainage lines cut through this habitat type in some areas (Ecologia, 2015). The fauna survey determined that 88 fauna species of conservation significance have the potential to occur within the area, of which three mammals, 24 birds and 29 invertebrates have been assessed as having a medium to high likelihood of occurrence within the surveyed area (Ecologia, 2015). Two of these mammals are listed as rare or likely to become extinct under the WC Act.

A total of forty six conservation significant fauna (including nine threatened and 31 migratory fauna protected under international agreements) have been recorded within the local area (Parks and Wildlife, 2007-).

The greater bilby (*Macrotis lagotis*) is listed as vulnerable under the WC Act EPBC Act. The fauna survey determined that suitable habitat for this species occurs within the survey area (*Acacia* shrubland) and that there are a number of recent regional records of this species (Ecologia, 2015). On this basis it is considered that the application area may support this species.

The greater bilby once occurred across 70 per cent of mainland Australia, but has now disappeared from up to 90 per cent of its historical range and occurs in fragmented populations in south-western Queensland, drier areas of the Northern Territory and northern Western Australia (Pavey, 2006; Narayan et al., 2014). In Western Australia, the species occurs in a portion of the Gibson Desert and Great Sandy Desert bioregions, portions of the Pilbara bioregion, the Dampierland bioregion along Eighty Mile Beach and north to Beagle Bay, and in the Central Kimberley and Ord-Victoria Plains bioregions south of the Fitzroy and Margaret Rivers (Pavey, 2006). The distribution of the greater bilby is contracting northwards with significant contraction into the Kimberley from the Northern Territory in the past 20 years (Parks and Wildlife, 2016).

Parks and Wildlife advised that the application area contains suitable habitat for the greater bilby as populations are known from similar vegetation, landform and soil types elsewhere in the Dampierland bioregion (Parks and Wildlife, 2016). With consideration to the size of the project footprint, the proposed clearing will reduce the quality and quantity of food resources available to a local sub-population and will increase habitat fragmentation, which is likely to impact the species on a local scale by impacting breeding success (Parks and Wildlife, 2015a and 2015b). The proposed clearing may cause direct mortality to bilbies (including pouched young, depending on the timing of clearing) and the exposure or collapse of burrows (Parks and Wildlife, 2015a and 2015b).

The northern quoll (*Dasyurus hallucatus*) is listed as endangered under the WC Act and EPBC Act. There are several recent records (2001-16) of the species within the local area (Parks and Wildlife, 2016). The fauna survey determined that the species may use the grassy savannah and open savannah woodland habitat types for foraging and dispersal (Ecologia, 2015). On this basis it is considered that application area may support this species.

The current distribution of the northern quoll is discontinuous across northern Australia. In Western Australia the northern quoll has been recorded from many areas in the Kimberley and several areas in the Pilbara (Hill and Ward, 2010). Northern quolls do not have highly specific habitat requirements, they occur in a variety of habitats across their range (Hill and Ward, 2010). Daytime den sites provide important shelter and protection for northern quolls from predators and weather (Hill and Ward, 2010). Habitat critical to the survival of the species is outlined as that where northern quolls are least exposed to threats or least likely to be in the future; rocky areas and offshore islands form the prime critical habitat for this species (Hill and Ward, 2010).

The northern quoll reproduces only once in its lifetime with male death after reproduction recorded in some populations, and given this, local extinctions of quoll populations may occur in a single year if disturbance causes complete juvenile mortality (Hill and Ward, 2010). Population loss is more likely where populations are isolated and recruitment is not able to occur (Hill and Ward, 2010). On this basis it is considered that the proposed clearing may directly impact on individuals of the species through mortality and decreased breeding success and has the potential to cause a local population to become extinct.

The fauna survey recorded the avian species rainbow bee-eater (*Merops ornatus*, listed as migratory under the WC Act), bush stone-curlew (*Burhinus grallarius*, listed as Priority 4) and pictorella mannikin (*Heteromunia pectoralis*, listed as Priority 4) (Ecologia, 2015). The application area contains suitable habitat for these species, however noting that the fauna habitat recorded within the application area is well represented within the local area, it is considered that the application area is unlikely to constitute significant habitat for these species. The remaining migratory bird species may utilise habitat within the application area for opportunistic foraging, however are unlikely to be specifically reliant on habitat within the application area.

Noting the extent of the proposed clearing and size of the project footprint, it is considered that the proposed clearing is likely to cause habitat fragmentation on a local scale that may impede fauna movement through the landscape for species with small home ranges or low dispersal ability. Noting the potential for the greater bilby and northern quoll to occur within the application area, it is considered that the application area may be necessary for the maintenance of, and may comprise, significant habitat for indigenous fauna.

A Department of Environment Regulation (DER) Delegated Officer wrote to the applicant, advising (among other things) that the application area may contain significant habitat for the greater bilby and northern quoll, and may include priority flora species. In response the applicant provided the following information relevant to this Principle:

- In respect to fauna generally, the applicant submitted that DER's assessment of Principle (b) for this application differs significantly from its assessment for Clearing Permit CPS 6084/1 (July 2014). The applicant noted that in the decision report for Clearing Permit CPS 6084/1, DER concluded that the proposed clearing is not likely to be at variance to the Principle, and recognised that the local area retains approximately 90 per cent native vegetation cover and that suitable fauna habitats are located in the native vegetation surrounding the application area. The applicant advised that the extent of native vegetation in the local area has not changed, and that DER should have reached the same conclusion for this application that the proposed clearing is not likely to be at variance to Principle (b). The applicant contended that spending resources on targeted fauna surveys is unjustified taking the above into account, and that the risk is low and DER should proceed to grant a clearing permit.
- In respect to the greater bilby, the applicant submitted that the application area contains broad *Acacia* shrubland as described by Ecologia (2015), and that as this habitat type covers an expansive area (29,609 hectares) of the Oil Basins Limited survey area, the proposed clearing of 223 hectares has low risk to the species. The applicant noted that the National Recovery Plan for the Greater Bilby (2006) outlines a number of key threats to the species, and was of the view that there appear to be greater threats to the species than presented by the proposed clearing. The applicant contended that a requirement to undertake survey work is nonsensical given the extent of the proposed clearing in a substantially uncleared landscape, and acknowledged that the situation could be viewed differently if the proposed clearing was located within a fragmented or moderately to highly-cleared landscape. The applicant submitted that the biodiversity knowledge of the local Aboriginal people should be taken into account, which indicates that the application area does not contain significant habitat for this species.
- In respect to the northern quoll, the applicant noted that the report by Ecologia (2015) and the National Recovery Plan for the Northern Quoll (2010) indicate that potential critical habitat for this species is located to the south-east of the Oil Basins Limited survey area, which is located more than 60 kilometres from the application area. The applicant advised that no evidence of the northern quoll has been found on the property.

The assessment of Principle (b) in relation to Clearing Permit CPS 6084/1 (and /2) considered the impacts of the proposed clearing of 76 hectares of native vegetation, and found that the vegetation within the application area may provide fauna habitat, that suitable fauna habitat is located outside of the application area, and that fauna habitat is well-represented within the local area. The assessment concluded that the proposed clearing was not likely to be at variance to Principle (b).

The assessment of the current application notes the size of the application footprint (1,334 hectares) and found that the application area may support the greater bilby and northern quoll. In the absence of on-ground surveys to confirm otherwise, a precautionary approach has been taken in finding that the proposed clearing may be at variance to this Principle.

Taking into account the applicant's response, and noting the size of the project footprint, the extent of clearing proposed and the potential for conservation significant fauna, it is considered that the application area may be necessary for the maintenance of, and may comprise, significant habitat for indigenous fauna.

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

A targeted fauna survey undertaken by a suitably-qualified person would determine whether the proposed clearing is likely to impact on the greater bilby or northern quoll.

Methodology

References:
Ecologia (2015)
Hill and Ward (2010)
Keighery (1994)
Narayan et al. (2014)
Parks and Wildlife (2007-)
Parks and Wildlife (2014)
Parks and Wildlife (2015a)

Parks and Wildlife (2015b)
Parks and Wildlife (2016)
Pavey (2006)

GIS Databases:
SAC bio datasets (Accessed August 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

According to available databases, no rare flora species have been recorded within the local area (20 kilometre radius). This could however, be on account of insufficient data for the area. Officer level advice from Parks and Wildlife indicated that given the limited survey data for the region, a flora survey would be required in order to determine the proposed impact on conservation significant flora (Parks and Wildlife, 2016).

A level 1 flora survey of a 208,566 hectare area, including the application area, did not record any rare flora species (Ecologia, 2015). The flora survey involved the assessment of 17 releves within the survey area, with a survey effort of 10 person days. Given the broad nature of the flora survey it is considered to be insufficient to confirm the presence or absence of rare flora within the application area.

According to aerial imagery, the Beard vegetation association mapped within the application area is well-represented within the local area (Government of Western Australia, 2015). It is understood that the Beard mapping within this region was undertaken at a broad scale of 1:1,000,000 and may therefore not identify local vegetation communities.

Based on the size of the project footprint, the extent of clearing proposed and the condition of the vegetation within the application area, and noting the absence of suitable on-ground surveys to confirm otherwise, it is considered that the application area may be necessary for the continued existence of rare flora.

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

Methodology

References
DER (2016)
Ecologia (2015)
Government of Western Australia (2015)
Parks and Wildlife (2016)

GIS Databases:
SAC bio datasets (Accessed August 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

According to available databases, there are no known threatened ecological communities (TECs) within the local area (20 kilometre radius). The nearest TEC is the 'Assemblages of Big Springs organic mound springs', located approximately 46 kilometres north of the application area.

The vegetation within the application area is not considered to represent a TEC. A site inspection undertaken by Parks and Wildlife on 7 May 2014 did not identify a TEC within the application area (Parks and Wildlife, 2014). A broad flora survey covering a 208,566 hectare area, including the application area, did not record a TEC (Ecologia, 2015).

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

Methodology

References:
Ecologia (2015)
Parks and Wildlife (2014)

GIS Database:
SAC bio datasets (Accessed August 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 not 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 percent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The application area is located within the Dampierland Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, which retains approximately 99 per cent of the pre-European extent of native vegetation cover (Government of Western Australia, 2015). The application area is mapped as Beard vegetation association 764, which retains approximately 98 per cent of its pre-European extent at a bioregional level (Government of Western Australia, 2015). The application area is located within the Shire of Derby-West Kimberley, within which there is approximately 99 per cent pre-European vegetation extent remaining (Government of Western Australia, 2015).

Based on aerial imagery, the local area (20 kilometre radius) is well vegetated and retains an estimated 99 per cent of the pre-European extent of native vegetation cover.

On the basis that the native vegetation extents present within the application area, the Shire, the bioregion and the local area retain more than 30 per cent representation, it is considered that the application area is not significant as a remnant of native vegetation within an area that has been extensively cleared.

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Dampierland	8,343,939	8,319,873	99	1
Local government*				
Derby-West Kimberley	11,955,816	11,897,912	99	4
Beard vegetation association in Bioregion*				
764	53,248	51,955	98	0

Methodology

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

GIS Database:
IBRA WA (Regions - Sub Regions)
Pre-European Vegetation

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

Comments

Proposed clearing is at variance to this Principle

Two minor non-perennial watercourses are mapped within the southern portion of the application area. The application area receives approximately 700 millimetres of rainfall a year primarily during the monsoonal wet season of November to April.

Officer level advice from Parks and Wildlife indicated that sections of the southern portion of the application area appear to contain seasonally inundated wetlands and drainage lines, particularly in the south-west and west (Parks and Wildlife, 2016). A site inspection undertaken by Parks and Wildlife observed a wetland in close proximity to the north of the northern portion of the application area (Parks and Wildlife, 2014). It is noted that this inspection was limited to one hour and not all areas (in particular the northern area) could be accessed due to flooded roads and locked gates.

Overland flow from the southern portion of the application area is likely to flow west into Mowanjum Wetland Reserve, located approximately 2.5 kilometres from the application area. This wetland reserve is valued for its fauna, flora, indigenous history and freshwater qualities (Shire of Derby-West Kimberley, 2016).

Within the Monsoonal climate of the Kimberley, the presence of groundwater flows over soil with impeded drainage suggest that portions of the application area may be growing in association with Mowanjum wetland.

The Commissioner of Soil and Land Conservation (CSLC) advised that more detailed site investigations would be required in order to determine the acceptability of the site to be cleared for agricultural purposes (CSLC, 2016).

The Department of Water (DoW) advised that further information is required in order for a hydrological assessment of the application area to be made (DoW, 2016).

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

Further hydrological assessment and retaining a condition on the permit to avoid watercourses would assist in minimising impacts to riparian vegetation.

Methodology

References:
CSLC (2016)
DoW (2016)
Parks and Wildlife (2014)
Parks and Wildlife (2016)
Shire of Derby-West Kimberley (2016)

GIS Databases:
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 may be at variance to this Principle

The application area is mapped within the Camelgooda and Waganut land systems. The northern portion of the application area falls entirely in the Camelgooda system while the southern portion of the application area falls within both land systems. The Camelgooda land system is described as extensive dune fields, pindan and other low woodlands. The Waganut land system is described as low lying sandplains and dune fields with through going drainage supporting pindan acacia shrublands with emergent eucalypt trees.

The southern portion of the application area appears to contain seasonally inundated wetlands and drainage lines, particularly in the south-west and west (Parks and Wildlife, 2016).

The CSLC advised that the sandy soils within the application area are inherently susceptible to wind erosion (CSLC, 2016). The Department of Agriculture and Food Western Australia (DAFWA) advised that the risk of wind erosion will be increased during the initial clearing and development phases when native vegetation is removed to allow planting for irrigated production (DAFWA, 2014). Irrigated production of Rhodes grass will maintain a high level of groundcover and therefore protect the soil from wind erosion.

Irrigated production of annuals such as sorghum will have minimal groundcover to protect the soil from wind erosion during the establishment phase each year and low groundcover for a short period after each cut (DAFWA, 2014). The risk of wind erosion can be managed by carefully planning the timing of ground disturbing operations, irrigation and management after baling or grazing and retention of sufficient stubble for at least 50 per cent ground cover (CSLC, 2016).

The deep free draining soils identified within the majority of the application area have a low salt storage capacity and salinity is unlikely to occur either as a result of the proposed land clearing or subsequent agricultural use (DAFWA, 2014). The CSLC advised that the risk of salinity or eutrophication occurring as a result of the proposed clearing is low (CSLC, 2016).

The CSLC advised that the southern portion of the application area contains an appreciable area of the Waganut land system drainage floor land unit (CSLC, 2016). The soil description for this land unit indicates a complex of yellowish and scalded grey soil over clay, probably supporting *Melaleuca*. Being a riparian species the presence of *Melaleuca* suggests that some areas may have impeded drainage (CSLC, 2016).

With the monsoonal climate of the Kimberley, surface water flows during intense rainfall events over bare ground, may lead to water erosion. Based on the potential for impeded drainage, it is also considered that the proposed clearing may cause or exacerbate waterlogging in some areas following heavy rainfall. However, waterlogging is likely to be temporary and is unlikely to cause appreciable land degradation.

Given the extent of clearing proposed and the sandy soils present within the application area, it is considered that the proposed clearing may cause appreciable land degradation in the forms of wind and water erosion.

A Department of Environment Regulation (DER) Delegated Officer wrote to the applicant, advising (among other things) that the application area may contain significant habitat for the greater bilby and northern quoll, and may include priority flora species. In response the applicant provided the following information relevant to this Principle:

- In respect to the risk of wind and water erosion, the applicant submitted that the management of risk associated with irrigated fodder operations will continue, that there is no evidence of erosion from the clearing done a year ago for the first pivot, and that it has been demonstrated that the clearing has not caused land degradation. The applicant advised that the clearing was closely followed by land preparation, commencement of irrigation and seeding which has controlled any risk of land degradation, and was of the view that the retention of native vegetation around the cleared areas also mitigates land degradation risks. The applicant submitted that this aligns with advice given by DAFWA to DER during the assessment for Clearing Permit CPS 6084/1, and that DAFWA staff have visited the trial irrigation area on a number of occasions and should be aware that there is no land degradation resulting from the clearing or landuse.

The assessment of Principle (g) in relation to Clearing Permit CPS 6084/1 (and /2) considered the impacts of the proposed clearing of 76 hectares of native vegetation, and took into account advice provided by DAFWA. The assessment found that the sandy soils are susceptible to wind erosion, and concluded that the proposed clearing may be at variance to Principle (g).

The assessment of the current application notes the extent of the proposed clearing (223 hectares), and has taken into account advice provided by CSLC. Consistent with the assessment in relation to Clearing Permit CPS 6084/1 (and /2), the assessment of the current application found that the sandy soils are susceptible to erosion, and concluded that the proposed clearing may be at variance to Principle (g).

Taking into account the applicant's response, and noting the extent of clearing proposed and the sandy soils present within the application area, it is considered that the proposed clearing may cause appreciable land degradation in the forms of erosion.

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

The CSLC advised that more detailed site investigations would be required in order to determine the acceptability of the site to be cleared for agricultural purposes (CSLC, 2016). DoW advised that further information is required in order for a hydrological assessment of the application area to be made (DoW, 2016).

Methodology

References:
CSLC (2016)
DAFWA (2014)
DoW (2016)
Parks and Wildlife (2016)

GIS Databases:
Imagery
Rangeland land system mapping

(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 local area (20 kilometre radius) does not include any Parks and Wildlife managed lands. Given this, the proposed clearing is unlikely to impact on the environmental values of Parks and Wildlife conservation estate.

Sections of the southern portion of the application area appear to contain seasonally inundated wetlands and drainage lines, particularly in the south-west and west (Parks and Wildlife, 2016).

Overland flow from the southern portion of the application area is likely to flow west into Mowanjum Wetland Reserve, located approximately 2.5 kilometres from the application area. This wetland reserve is valued for its fauna, flora, indigenous history and freshwater qualities (Shire of Derby-West Kimberley, 2016). The CSLC advised that the southern portion of the application area contains an appreciable area of the 'Waganut land system' drainage floor land unit (CSLC, 2016). The soil description for this land unit indicates a complex of yellowish and scalded grey soil over clay, probably supporting Melaleuca. Being a riparian species the presence of *Melaleuca* suggests that some areas may have impeded drainage (CSLC, 2016).

Given the proximity to Mowanjum Wetland Reserve and the low lying soil type identified, the proposed clearing may alter groundwater and surface water flows into the reserve and impact on its environmental value. DoW advised that further information is required in order for a hydrological assessment of the application area to be made (DoW, 2016).

A Department of Environment Regulation (DER) Delegated Officer wrote to the applicant, advising (among other things) that the application area may contain significant habitat for the greater bilby and northern quoll, and may include priority flora species. In response the applicant provided the following information relevant to this Principle:

- In respect to impacts to a nearby reserve, the applicant submitted that there is already a condition on Clearing Permit CPS 6084/2 requiring that watercourses are avoided. The applicant advised that the existing centre pivot avoids watercourses accordingly, and that work is being undertaken through the licencing process under the *Rights in Water and Irrigation 1914* to explain the hydraulic drivers of the Munkayarra wetlands, which will deal with this matter.

The assessment of Principle (h) in relation to Clearing Permit CPS 6084/1 (and /2) found that there were no conservation areas within the local area, and concluded that the proposed clearing was not likely to be at variance to Principle (h).

The assessment of the current application notes the size of the application footprint (1,334 hectares) and has taken into account advice provided by DoW. The assessment found that although there are no Parks and Wildlife managed lands within the local area, the nearby Mowanjum Wetland Reserve may be impacted through altered hydrology as a result of the proposed clearing.

It is acknowledged that Clearing Permit CPS 6084/1 (and /2) was granted subject to conditions including a requirement that the Permit Holder does not clear native vegetation within 100 metres of riparian vegetation. This requirement may address direct impacts relating to riparian habitats, however there is insufficient information available to determine whether an exclusion zone along watercourses is sufficient to mitigate the risk of hydrological impacts as a result of the proposed clearing.

Taking into account the applicant's response, and noting the size of the project footprint, the proximity of Mowanjum Wetland Reserve and the potential for hydrological changes, it is considered that the proposed clearing may impact on the environmental values of a nearby conservation area.

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

Methodology

References:
CSLC (2016)
DoW (2016)
Parks and Wildlife (2016)
Shire of Derby-West Kimberley (2016)
GIS Databases:
Parks and Wildlife tenure
RAMSAR, Wetlands

(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 may be at variance to this Principle

Two minor non-perennial watercourses are mapped within the southern portion of the application area. The application area receives approximately 700 millimetres of rainfall a year primarily during the monsoonal wet season of November to April.

Sections of the southern portion of the application area appear to contain seasonally inundated wetlands and drainage lines, particularly in the south-west and west (Parks and Wildlife, 2016). A site inspection undertaken by Parks and Wildlife observed a wetland in close proximity to the north of the northern portion of the application area (Parks and Wildlife, 2014). It is noted that this inspection was limited to one hour and not all areas (in particular the northern area) could not be accessed due to flooded roads and locked gates.

Overland flow from the southern portion of the application area is likely to flow west into Mowanjum wetland, located approximately 2.5 kilometres from the application area. This wetland is valued for its fauna, flora, indigenous history and freshwater qualities (Shire of Derby-West Kimberley, 2016). The CSLC advised that the southern portion of the application area contains an appreciable area of the 'Waganut land system' drainage floor land unit (CSLC, 2016). The soil description for this land unit indicates a complex of yellowish and scalded grey soil over clay, probably supporting Melaleuca. Being a riparian species the presence of *Melaleuca* suggests that some areas may have impeded drainage (CSLC, 2016).

With the monsoonal climate of the Kimberley, the presence of groundwater flows over soil with impeded drainage may suggest that portions of the vegetation within the application area are growing in association with Mowanjum wetland. The CSLC advised that more detailed site investigations would be required in order to determine the acceptability of the site to be cleared for agricultural purposes (CSLC, 2016). DoW advised that further information is required in order for a hydrological assessment of the application area to be made in order to ensure the adjoining wetland is not impacted (DoW, 2016).

The potential flow of surface water across the application area and into Mowanjum wetland during high rainfall events may lead to a decline in the quality of surface water through increased sedimentation if not appropriately managed. An alteration of groundwater flows as a result of the proposed clearing may also impact on the quality of surface water within Mowanjum wetland if hydrologically connected.

The CSLC has advised that given the low salt storage capacity of soils identified within the majority of the application area, salinity or eutrophication are unlikely to occur as a result of the proposed clearing (CSLC, 2016). Given this, it is considered that the proposed clearing is unlikely to impact on the quality of groundwater.

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

Methodology

References:
CSLC (2016)
DoW (2016)
Parks and Wildlife (2014)
Parks and Wildlife (2016)
Shire of Derby-West Kimberley (2016)

GIS Databases:
Groundwater salinity, statewide
Hydrography, linear
Mean annual rainfall

(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 application area receives approximately 700 millimetres of rainfall a year primarily during the monsoonal wet season of November to April.

Sections of the southern portion of the application area appear to contain seasonally inundated wetlands and drainage lines, particularly in the south-west and west (Parks and Wildlife, 2016). A site inspection undertaken by Parks and Wildlife observed a wetland in close proximity to the north of the northern portion of the application area (Parks and Wildlife, 2014).

The CSLC advised that the occurrence of *Melaleuca* sp. within the application area may indicate that some areas have variable soil profiles and possibly impeded drainage (CSLC, 2016). Based on this information, it is considered that the proposed clearing may cause or exacerbate waterlogging in some areas following heavy rainfall, however this is not likely to cause or exacerbate the incidence or intensity of flooding within or adjacent to the application area.

Noting that the risk of standing water and water erosion is associated with high rainfall events and that local runoff is likely to be for short durations, it is considered that 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:
CSLC (2016)
Parks and Wildlife (2014)
Parks and Wildlife (2016)

GIS Database:
Mean annual rainfall

Planning instruments and other relevant matters.

Comments

On 16 April 2014 the applicant applied to clear 800 hectares of native vegetation for irrigated agriculture (Application CPS 6084/1). This application was amended during assessment to 76 hectares in order to undertake a trial of the proposed agriculture. Clearing Permit CPS 6084/1 was granted to the applicant on 17 July 2014. The decision to grant Clearing Permit CPS 6084/1 was appealed by a third party on the grounds of impacts to watercourses, wetlands and biodiversity, potential to cause land degradation, and other matters. On 7 October 2014 the Minister for Environment dismissed the appeal and noted that any future clearing permit received as part of any proposed expansion would be assessed on its merits and that it was open to DER to require further information such as flora and fauna surveys as part of its assessment.

Clearing Permit CPS 6084/2 was granted to the applicant on 3 December 2015, amending the purpose of the clearing to include dryland cultivation and replacing Clearing Permit CPS 6084/1. The current application overlaps the area authorised under Clearing Permit CPS 6084/2.

The application area is located within the Canning-Kimberley Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914*. DoW advised that the applicant currently holds an existing groundwater licence for 0.75 gigalitres and has applied for an amendment of this licence to 2.75 gigalitres (DoW, 2016). DoW is currently determining the scope of further information that might be required to complete this assessment (DoW, 2016).

DoW has previously advised that it is working with the applicant to identify a potential groundwater source (DoW, 2014). There are a number of options available to provide water for the development, including deeper aquifers with no nearby surface connections. The final production bore will be designed to deliver a sustainable supply within the normal water licence constraints of having no significant impact on the environment or the groundwater resources (DoW, 2014).

DAFWA has previously identified two species proposed to be planted, *Centrosema pascuorum* Benth. and Rhodes grass (*Chloris gayana* Kunth.), as having a 'medium' and 'high' weed risk rating (DAFWA, 2014). DAFWA recommended a cleared but not fertilised buffer zone of at least four metres be maintained surrounding these species, and that this area should be treated annually to remain free of vegetation and inspected at a minimum of six month intervals (DAFWA, 2014).

The CSLC advised that given the presence of the 'Waganut land system' drainage floor land unit with potential impeded drainage (CSLC, 2016), further capability assessment of the proposed agricultural land use is warranted. Clearing Permit CPS 6084/1 was granted for the implementation of a trial of the proposed agricultural development.

The applicant has applied to amend their Pastoral Diversification Permit through the Department of Lands (DoL) to increase the size of the permitted area consistent with the proposed amended clearing permit area. DoL advised that the assessment of the application is ongoing (Pastoral Lands Board, 2016).

The Shire of Derby-West Kimberley (Shire) advised that it does not raise any objections to the proposed clearing and no further approvals are required to be obtained from the Shire for these works to commence (Shire of Derby West Kimberly, 2016).

On 20 June 2016 the application was advertised in *The West Australian* newspaper for a 21 day submission period. No public submissions have been received in relation to this application.

The Warrwa People who hold a Native title claim over the application area do not object to the clearing provided that the permit holder engages Warrwa monitors during ground clearing.

On 20 September 2016 a DER Delegated Officer wrote to the applicant, advising of the environmental impacts identified during the preliminary assessment of the application (the application area may include significant habitat for the greater bilby and northern quoll and may include priority flora species, and that the proposed clearing may cause appreciable land degradation in the forms of wind and water erosion, may impact a nearby reserve through altered hydrology and water volume, and a licence to abstract groundwater is required), and inviting the application to provide additional advice addressing these issues within 30 days (DER ref. A1167534).

On 29 September 2016 (received by DER on 4 October 2016) the applicant provided a response to the Delegated Officer's letter of 20 September 2016 (DER ref. A1179503):

- The applicant advised that an amended clearing permit will enable the expansion of the irrigated fodder production operations and allow the movement beyond a trial project to a fully-fledged and commercial pastoral enterprise. The applicant indicated difficulties presented by approval barriers to the project. The applicant submitted that the application should be viewed in the context of the need for this type of development in the Kimberley to advance regional communities in particular indigenous communities, and as identified by the State Government through the Council of Australian Governments, Regional Blueprints and projects like Water for Food.
- The applicant noted that the application had been with DER for more than three and a half months prior to the advice of DER's intent to refuse the application, and indicated confusion as to why DER considers the application high risk and didn't advise of the environmental issues prior to this time. The applicant contended that a favourable decision on the application should not be further delayed, consistent with DER's own policy on a risk-based approach. The applicant requested that DER proceed to a decision on the application without any further delay so that any decision to refuse to grant a clearing permit can be progressed through the appeals process, or so that the project can be progressed.
- The applicant submitted that DER should not be concerned with the approval processes of other Government departments in determining clearing permit applications. In respect to the requirement for a water licence, the applicant considered that this is irrelevant to the clearing permit application.
- In respect to the CLSC's advice on capability assessment for the landuse, the applicant contended that this is no basis for a refusal of a clearing permit application. The applicant advised that the existing pivot irrigation system is located on the Wanganut land system and is operating very successfully to produce hay and fatten cattle as demonstrated by a number of performance indicators.
- In respect to fauna generally, the applicant submitted that DER's assessment of Principle (b) for this application differs significantly from its assessment for Clearing Permit CPS 6084/1 (July 2014). The applicant noted that in the decision report for Clearing Permit CPS 6084/1, DER concluded that the proposed clearing is not likely to be at variance to the Principle, and recognised that the local area retains approximately 90 per cent native vegetation cover and that suitable fauna habitats are located in the native vegetation surrounding the application area. The applicant advised that the extent of native vegetation in the local area has not changed, and that DER should have reached the same conclusion for this application that the proposed clearing is not likely to be at variance to Principle (b). The applicant contended that spending resources on targeted fauna surveys is unjustified taking the above into account, and that the risk is low and DER should proceed to grant a clearing permit.
- In respect to the greater bilby, the applicant submitted that the application area contains broad *Acacia* shrubland as described by Ecologia (2015), and that as this habitat type covers an expansive area (29,609 hectares) of the Oil Basins Limited survey area, the proposed clearing of 223 hectares has low risk to the species. The applicant noted that the National Recovery Plan for the Greater Bilby (2006) outlines a number of key threats to the species, and was of the view that there appear to be greater threats to the species than presented by the proposed clearing. The applicant contended that a requirement to undertake survey work is nonsensical given the extent of the proposed clearing in a substantially uncleared landscape, and acknowledged that the situation could be viewed differently if the proposed clearing was located within a fragmented or moderately to highly-cleared landscape. The applicant submitted that the biodiversity knowledge of the local Aboriginal people should be taken into account, which indicates that the application area does not contain significant habitat for this species.
- In respect to the northern quoll, the applicant noted that the report by Ecologia (2015) and the National Recovery Plan for the Northern Quoll (2010) indicate that potential critical habitat for this species is located to the south-east of the Oil Basins Limited survey area, which is located more than 60 kilometres from the application area. The applicant advised that no evidence of the northern quoll has been found on the property.
- In respect to priority flora, the applicant submitted that extent of the proposed clearing and corresponding risk does not justify a targeted flora and vegetation survey, and that DER should note the area to be cleared is heavily grazed.
- In respect to the risk of erosion, the applicant submitted that the management of risk associated with irrigated fodder operations will continue, that there is no evidence of erosion from the clearing done a year ago for the first pivot, and that it has been demonstrated that the clearing has not caused land degradation. The applicant advised that the clearing was closely followed by land preparation, commencement of irrigation and seeding which has controlled any risk of land degradation, and was of the view that the retention of native vegetation around the cleared areas also mitigates land degradation risks. The applicant submitted that this aligns with advice given by DAFWA to DER during the assessment for Clearing Permit CPS 6084/1, and that DAFWA staff have visited the trial irrigation area on a number of occasions and should be aware that there is no land degradation resulting from the clearing or landuse.

- In respect to impacts to a nearby reserve, the applicant submitted that there is already a condition on Clearing Permit CPS 6084/2 requiring that watercourses are avoided. The applicant advised that the existing centre pivot avoids watercourses accordingly, and that work is being undertaken through the licencing process under the *Rights in Water and Irrigation 1914* to explain the hydraulic drivers of the Munkayarra wetlands, which will deal with this matter.

The applicant's response in respect to fauna and priority flora and fauna is considered under Principles (a) and (b), in respect to land degradation is considered under Principle (g), and in respect to impacts to a nearby reserve is considered under Principle (h).

DER's time frames specifically recognise a risk-based approach by aiming to provide a decision on 80 per cent of applications within 60 working days of receipt, and on the remaining 20 per cent within 90 working days. The timeframe to assess an application will depend on the complexity of the application and the significance of the native vegetation and surrounding environment.

The cumulative impact of the applications and previous clearing activities may increase environmental impacts to flora, vegetation communities and fauna. Surveys are required to determine the extent and significance of these impacts.

Pursuant to section 51O(4) of the *Environmental Protection Act 1986*, in considering a clearing matter the CEO shall have regard to any planning instrument or other matter that the CEO considers relevant. For this application, a licence to abstract groundwater is required from DoW. As this approval relates to the purpose for which the clearing permit is sought, this approval is considered to be a relevant matter.

Methodology

References:
DAFWA (2014)
DER (2016)
DoW (2014)
DoW (2016)
Pastoral Lands Board (2016)
Shire of Derby-West Kimberley (2016)

4. References

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Shire of Derby-West Kimberley (2016) Advice received from the Shire of Derby West Kimberley on 27 June 2016. DER REF: A1120630.