



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2858/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Limestone Resources Australia Pty Ltd**

1.3. Property details

Property: Mining Lease 70/341
Mining Lease 70/345
Local Government Area: City of Wanneroo

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
6.4		Mechanical Removal	Limestone Extraction

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 24 February 2011

2. Background

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Vegetation within the application area has been mapped at a 1:250,000 scale as the following Beard vegetation association (Shepherd, 2009; GIS Database):

- **949**: Low woodland; banksia.

A Level 2 flora and vegetation survey of the application area and surrounding vegetation (referred to as the survey area) was undertaken in early Spring (12 and 15 October 2009) and late Spring (24 November 2009). Two vegetation communities were identified within the application area (Coffey Environments, 2010).

LWBa: Low Woodland of *Banksia attenuata* and *Allocasuarina fraseriana* over Tall Shrubland of *Xanthorrhoea preissii* and *Hakea prostrata* over Low Open Shrubland of *Hibbertia hypericoides* over Very Open Sedgeland of *Tetraria octandra* and *Mesomelaena pseudostygia* over Open grassland of *Briza maxima* and *Brachypodium distachyon* over Very Open Herbland of *Desmodcladus flexuosus*. Approximately 1.8 hectares of **LWBa** occurs within the application area.

TOSBsOSXp: Tall Open Scrub of *Banksia sessilis* over Open Shrubland of *Xanthorrhoea preissii*, *Melaleuca systema* and *Hakea lissocarpha* over Low Open Shrubland of *Jacksonia sericea* and *Hibbertia hypericoides* over Very Open Grassland of *Brachypodium distachyon* over Very Open Herbland of *Anagallis arvensis* var. *caerulea*, *Hypochaeris glabra* and *Urospermum picroides*. The majority of vegetation type **TOSBsOSXp** has been cleared and ripped in the past with good regeneration (Coffey Environments, 2010). Approximately 4.6 hectares of **TOSBsOSXp** occurs within the application area.

Clearing Description

Limestone Resources Australia Pty Ltd has applied to clear up to 6.4 hectares of native vegetation for the expansion of limestone mining operations.

The proposal involves clearing approximately 1.8 hectares of vegetation community **LWBa** and approximately 4.6 hectares of **TOSBsOSXp**.

Vegetation and topsoil will be cleared using a bulldozer, and stockpiled for later use in rehabilitation activities (Landform Research, 2008).

Vegetation Condition

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

to

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

Comment

Vegetation condition was assessed by Coffey Environments (2010) and by the assessing officer during site visits to the application area on 2 October 2009 and 19 October 2010.

3. Assessment of application against Clearing Principles

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

Comments **Proposal is at variance to this Principle**

The application area is located within the Perth subregion of the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Perth subregion forms part of the South West Botanical Province which has a very high degree of species diversity (Mitchell et al., 2002).

Coffey Environments (2010) recorded two vegetation communities within the application area (five vegetation communities were recorded within the survey area) and vegetation condition ranged from 'Very Good-Good' to 'Good-Degraded' (Coffey Environments, 2010). A total of 98 native and 37 non-native (weed) species were recorded during the flora and vegetation survey (Coffey Environments, 2010). Given the number of vegetation communities within the application area compared to the survey area, it could be expected that the species count within the application area would be less than the survey area.

No Declared Rare Flora were recorded within the application area, however, two Priority Flora species, *Acacia benthamii* (Priority 2) and *Jacksonia sericea* (Priority 4), were recorded within and immediately adjacent to the application area. Over 200 individuals of *Acacia benthamii* were recorded within the survey area, and approximately 41 individuals may be disturbed by the proposed clearing (Coffey Environments, 2010). *Acacia benthamii* is known from areas including Cataby, Gnangara, Karnup, North Dandalup, Pinjarra (Coffey Environments, 2010). Over 700 individuals of *Jacksonia sericea* were observed scattered throughout the survey area (Coffey Environments, 2010). Approximately 400 individuals may be disturbed by the proposed clearing based on mapping by Coffey Environments (2010). This species has been recorded from Gnangara, Koondoola, Mullaloo and Neerabup and appears to be a disturbance opportunist (Coffey Environments, 2010; Western Australian Herbarium, 2010).

The two vegetation communities recorded within the application area were **LWBa** and **TOSBsOSXp** (Coffey Environments, 2010). **LWBa** covers an area of approximately 1.8 hectares over the western portion of the application area, whilst **TOSBsOSXp** covers the remaining (eastern) portion of the application area. Coffey Environments (2010) and Landform Research (2010) have confirmed that the majority of the area mapped as **TOSBsOSXp** has been cleared and ripped in the past with good regeneration, and this was evident during a site inspection of the application area by the assessing officer on 19 October 2010. Vegetation condition of community **TOSBsOSXp** ranged from 'Good' to 'Good-Degraded' (Coffey Environments, 2010).

Several occurrences of one Threatened Ecological Community (TEC) and three Priority Ecological Communities (PEC's) occur within 5 kilometres of the application area (GIS Database; Coffey Environments, 2010). No TEC's were identified within the application area during the flora and vegetation survey (Coffey Environments, 2010). Coffey Environments (2010) identified that the vegetation types **TOSBsOSXp** and **TOSBsXp** (which is located north-west of the application area) are representative of the Priority 3 (PEC) 'Northern Spearwood shrublands and woodlands'. This PEC is considered to be well reserved but susceptible to threatening processes such as land development (Coffey Environments, 2010).

The Department of Environment and Conservation (2010b), during a site inspection conducted on 4 November 2010, confirmed the presence of the Priority 3 PEC which aligns approximately with the mapped vegetation types **TOSBsOSXp** and **TOSBsXp** and covers 5.3 hectares of the area under application. A total of 35 occurrences of this PEC are presently recorded on the Department of Environment and Conservation's TEC database with a total area of 1012 hectares (Department of Environment and Conservation, 2010c).

The vegetation under application is part of an area of remnant native vegetation known as Bush Forever site No. 290 which covers an area of approximately 406.9 hectares (Government of Western Australia, 2000). The vegetation within this portion of Bush Forever site No. 290 has been mapped as Cottesloe – Central and Southern vegetation complex of which approximately 36% of the pre-European extent of this vegetation complex remains (GIS Database; Coffey Environments, 2010).

The presence of Priority Flora and PEC's within the application area raises the diversity of the area from a floristic perspective. Whilst there were a high number of weed species (37) recorded within the survey area, aerial imagery confirms that the local area has largely been cleared for horticultural and plantation purposes (GIS Database). As a result, given the extent of land clearing that has occurred in the local area and the quality of vegetation within the application area, the vegetation under application is likely to represent an area of higher ecosystem and species diversity than the surrounding landscape. However, a portion of the application area covered by vegetation community **TOSBsOSXp** is regrowth vegetation in 'Good-Degraded' condition (Coffey Environments, 2010). The potential impacts to biodiversity caused by the removal of this portion of vegetation community **TOSBsOSXp** may be mitigated by the implementation of an offset condition.

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

Methodology Coffey Environments (2010)
Department of Environment and Conservation (2010b)
Department of Environment and Conservation (2010c)
Government of Western Australia (2000)
Mitchell et al. (2002)

Shepherd (2009)
Western Australian Herbarium (2010)
GIS Database:
- IBRA Australia
- Perth Metropolitan Area North 20cm Orthomosaic - Landgate 2007

(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 Proposal is at variance to this Principle

Landform Research (2008) carried out a search of the Department of Environment and Conservation's (DEC) Threatened and Priority Fauna Database between the coordinates 31.572°S 115.658°E and 31.751°S 115.842°E. The following fauna species of conservation significance have the potential to utilise the habitat within the application area:

- Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*), listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*, and Schedule 1 (Fauna that is rare or is likely to become extinct) under the Wildlife Conservation (Specially Protected Fauna) Notice 2010 (2);
- Graceful Sun-moth (*Synemon gratiosa*), listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*, and Schedule 1 (Fauna that is rare or is likely to become extinct) under the Wildlife Conservation (Specially Protected Fauna) Notice 2010 (2);
- Peregrine Falcon (*Falco peregrinus*), Schedule 4 (Other specially protected fauna) under the Wildlife Conservation (Specially Protected Fauna) Notice 2010 (2);
- Carpet Python (*Morelia spilota imbricata*), Schedule 4 (Other specially protected fauna) under the Wildlife Conservation (Specially Protected Fauna) Notice 2010 (2), and DEC Priority 4;
- Western Brush Wallaby (*Macropus irma*), DEC Priority 4; and
- Quenda (*Isodon obesulus fusciventer*), DEC Priority 5.

Of particular importance is the suitability of the vegetation to provide foraging habitat for Carnaby's Black Cockatoo. The vegetation within the application area comprises of various *Banksia*, *Eucalyptus*, *Hakea* and *Grevillea* species which are considered important feed sources for Carnaby's Black Cockatoo (Department of Sustainability, Environment, Water, Population and Communities, 2011a). Large flocks of Black Cockatoo's have been observed in the vicinity of the application area, including an observation by Department of Mines and Petroleum staff during an inspection on the neighbouring Mining Lease 70/339 on 24 June 2009. While small areas of foraging habitat around the metropolitan area support only small numbers of birds for short periods of time, the progressive loss of small areas is an on-going concern for this species (Department of Sustainability, Environment, Water, Population and Communities, 2011a). The proposed clearing of up to 6.4 hectares will adversely impact on vegetation that is considered foraging habitat for Carnaby's Black Cockatoo.

The Graceful Sun-moth has been found to occur on Spearwood dune soils, with low open woodlands or open forest dominated by *Banksia* and *Eucalyptus* (Department of Sustainability, Environment, Water, Population and Communities, 2011a). The distribution of the species is known to extend the full length of the Swan Coastal Plain, from Binningup in the south to Leeman in the north (Department of Environment and Conservation, 2010a). However, within this range the sub-populations are severely fragmented due to natural and human induced disjunctions (Department of Environment and Conservation, 2010a). The soil and vegetation complexes within the application area have the potential to represent suitable habitat for this endangered species. A Graceful Sun-moth survey of the application area and adjoining vegetation was conducted on 15 and 25 March and 1 and 6 April 2010. Whilst suitable habitat was recorded in the study area, no adult Graceful Sun-moths were recorded.

The Carpet Python has been recorded from semi-arid coastal and inland habitats that comprise of *Banksia* woodland, *Eucalypt* woodland and grasslands (Department of Environment and Conservation, 2009a). This species is known to occur in the Yanchep National Park which is located approximately 6 kilometres north-west from the application area (Department of Environment and Conservation, 2009a). The Carpet Python may be present within the application area given the presence of suitable habitat. The proposed clearing is likely to result in some loss of habitat for this species.

Government of Western Australia (2000) states that Bush Forever Site No. 290 provides suitable habitat for the Quenda which is known to inhabit dense scrubby vegetation up to one metre high (Department of Environment and Conservation, 2009b). The Quenda has been recorded at a range of locations that include Neerabup National Park, Wanneroo, Carabooda, Pinjar and Burns Beach (Landform Research, 2008; DEC, 2007). It is likely that this species would utilise the habitat within the application area. The Western Brush Wallaby has also been recorded at nearby locations that include Neerabup National Park, Nowergup and Pinjar (Landform Research, 2008; DEC, 2007). The proposed clearing is likely to result in habitat loss for both of these species.

The vegetation under application is part of an area of remnant native vegetation known as Bush Forever site No. 290 which covers an area of approximately 406.9 hectares (Government of Western Australia, 2000). Large areas surrounding this remnant area of native vegetation have been cleared for horticultural and plantation purposes. Assessment of aerial imagery demonstrates that the vegetation under application, as well as the adjoining vegetation within the Bush Forever Site No. 290 forms part of an important linkage to adjacent bushland to the north, south and west (GIS Database, Government of Western Australia, 2000).

Coffey Environments (2010) has rated the vegetation condition of the application area as 'Very Good-Good' to 'Good-Degraded'. The vegetation in the middle portion of the application area was rated as 'Good-Degraded' having been historically disturbed through mechanical ripping (Coffey Environments, 2010). This area has regenerated with native species, although contained a higher level of weed invasion compared to the adjoining areas (Coffey Environments, 2010).

The proposed clearing is likely to reduce fauna linkages, and available fauna habitat in the local area. Given the extent of land clearing that has occurred in the local area and the quality of vegetation within and adjacent to the application area, the vegetation under application is considered important habitat for fauna species in the local area. However, a portion of the application area covered by vegetation community **TOSBsOSXp** is regrowth vegetation in 'Good-Degraded' condition (Coffey Environments, 2010). The potential impact to fauna habitats caused by the removal of this portion of vegetation community **TOSBsOSXp** may be mitigated by the implementation of an offset condition.

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

Methodology Department of Environment and Conservation (2007)
Department of Environment and Conservation (2009a)
Department of Environment and Conservation (2009b)
Department of Environment and Conservation (2010a)
Department of Sustainability, Environment, Water, Population and Communities (2011a)
Department of Sustainability, Environment, Water, Population and Communities (2011b)
Government of Western Australia (2000)
Landform Research (2008)

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

Comments Proposal is not likely to be at variance to this Principle

According to available datasets there are no known records of Declared Rare Flora (DRF) species within the application area (GIS database). There are seven records for the DRF species *Eucalyptus argutifolia* within 5 kilometres of the application area (GIS Database). There are no other records for any DRF species within 8 kilometres of the application area.

A Level 2 flora and vegetation assessment of the application area was undertaken by Coffey Environments (2010). No DRF was recorded within the application area during the survey (Coffey Environments, 2010).

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

Methodology Coffey Environments (2010)
GIS Database:
- Declared Rare and Priority Flora List

(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 Proposal is not likely to be at variance to this Principle

According to available datasets there are no known Threatened Ecological Communities (TEC's) within the application area (GIS database).

A computer floristic analysis (PATN) was undertaken to clarify the alignment of Floristic Community Types to the vegetation communities recorded within the application area. Based on this analysis, no TEC's were identified within the application area (Coffey Environments, 2010). The Department of Environment and Conservation (2010b), during a site inspection conducted on 4 November 2010, did not identify any TECs within the area under application.

The nearest known TEC is '*Melaleuca huegelii* - *Melaleuca acerosa* shrublands on limestone ridges (Gibson et al. 1994 type 26a)' which is located approximately 500 metres south of the application area (GIS database; DEC, 2010a; DEC 2010b). Although the 6.4 hectares of vegetation applied to be cleared is within close proximity to this TEC the two areas are separated by existing limestone quarry operations and it is unlikely that the vegetation applied to be cleared is necessary for the maintenance of this TEC.

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

Methodology Coffey Environments (2010)
Department of Environment and Conservation (2010a)
Department of Environment and Conservation (2010b)
GIS Database:
Threatened Ecological Sites Buffered

(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 Proposal may be at variance to this Principle

The clearing application area is located within the Perth subregion of the Swan Coastal Plain Interim Biogeographic Regionalisation for Australia (IBRA) bioregion. Approximately 39% of the pre-European vegetation remains within the bioregion (see table) (GIS database; Shepherd, 2009).

The vegetation of the clearing application area has been mapped as Beard vegetation association 949: Low woodland; banksia (GIS Database). According to Shepherd (2009) approximately 57.2% and 58% of Beard vegetation association 949 remains at both the state and bioregional level respectively (see table).

The vegetation under application is part of an area of remnant native vegetation known as Bush Forever site No. 290 which covers an area of approximately 406.9 hectares (Government of Western Australia, 2000). Bush Forever aims to retain a minimum of 10% of each vegetation complex in the Perth Metropolitan Region (Government of Western Australia, 2000). The vegetation complex for this portion of Bush Forever site No. 290 has been mapped as Heddle Vegetation Complex Cottesloe – Central and South (GIS Database). According to Government of Western Australia (2000) in 'Bush Forever Volume 1' approximately 36% of Heddle Vegetation Complex Cottesloe – Central and South remains (see table).

The National Objectives and Targets for Biodiversity Conservation (2001-2005) recognise that retention of 30% or more, of the pre-clearing extent of each ecological community is necessary to protect Australia's biological diversity. However, the Environmental Protection Authority's modified objective for constrained areas for the Swan Coastal Plain portion of the Perth Metropolitan Area targets a minimum retention of 10% of the pre-clearing ecological community (Environmental Protection Authority, 2000).

Whilst it is acknowledged that both Beard Vegetation Association 949 and Heddle Vegetation Complex Cottesloe – Central and South are above recognised thresholds, assessment of aerial imagery confirms that the local area (1: 25,000 scale) has been largely cleared for horticultural and plantation purposes and the vegetation under application forms part of a significant area of native vegetation (Bush Forever site no. 290). This bushland is considered an important ecological linkage to adjacent bushland to the north, south and west (Government of Western Australia, 2000). However, a portion of the application area covered by vegetation community **TOSBsOSXp** is regrowth vegetation in 'Good-Degraded' condition (Coffey Environments, 2010). The potential impacts to ecological linkages caused by the removal of this portion of vegetation community **TOSBsOSXp** may be mitigated by the implementation of an offset condition.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-european % in IUCN Class I-IV Reserves
IBRA bioregion – Swan Coastal Plain	1,501,209	583,140	~39	Depleted	10.5
Beard veg assoc. – State					
949	218,194	124,865	~57.2	Least Concern	13.3
Beard veg assoc. – Bioregion					
949	209,984	122,678	~58	Least Concern	13.4
Shire					
City of Wanneroo	67,697	33,637	~49.7	Depleted	8.3
Heddle Vegetation Complex					
Cottesloe – Central and South	34,439	12,362	~36	Depleted	18

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
 Environmental Protection Authority (2000)
 Government of Western Australia (2000)
 Shepherd (2009)
 GIS Database:

- Heddle Vegetation Complexes
- IBRA Australia
- NLWRA, Current Extent of Native Vegetation
- Perth Metropolitan Area North 20cm Orthomosaic - Landgate 2007

(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 Proposal is not likely to be at variance to this Principle

Analysis of Geographic Information Systems (GIS) hydrography data indicates there are no watercourses or wetlands within the application area. A site visit to the application area on 2 October 2009 by Department of Mines and Petroleum staff confirmed there are no watercourses or wetlands within the application area.

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

Methodology GIS Database:
- Hydrography, linear

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

Comments Proposal may be at variance to this Principle

The soils within the application area comprise of yellow or brown sands over abundant limestone outcrop (Landform Research, 2008). Soil coverage is low on the ridges, varying between 200 to 300 millimetres (Landform Research, 2008). Topographic information indicates that slope within the application area varies between approximately 2% on the flat plains, to approximately 6% in areas closer to limestone ridges (GIS Database; Landform Research, 2008).

The sandy and porous nature of the soils within the application area indicates that the site is well drained (Landform Research, 2008). The absence of any significant overland flows would thereby minimise the risk of water erosion.

Depth to groundwater within the application area varies from approximately 21 metres in the west to approximately 25 metres in the east (Landform Research, 2008). Given the porosity of the soils and absence of any low-lying or drainage areas within the application area, the proposed clearing is not likely to cause any water-logging issues.

In areas where the limestone ridge rises to the surface there is likely to be a negligible wind erosion risk due to the hard and binding nature of the limestone material. In the areas that are overlain by deeper sand sheets there is likely to be a moderate wind erosion risk due to the high sand content and the relative ease at which these materials may be transported by wind. The potential impacts of this risk may be minimised through the implementation of a staged clearing condition.

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

Methodology Landform Research (2008)
GIS Database:
- Topographic Contours, Statewide

(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 Proposal is at variance to this Principle

The application area is located within the Gngangara-Moore River State Forest which is managed by the Department of Environment and Conservation (GIS Database). The Gngangara-Moore River State Forest encompasses an area in excess of 50,000 hectares, however a large portion of this State Forest is covered by pine plantation (GIS Database).

The application area is located within Bush Forever Site No. 290 which covers an area of approximately 406.9 hectares (Government of Western Australia, 2000).

Bush Forever Site No. 290 is considered an important ecological linkage to adjacent bushland to the north, south and west (Government of Western Australia, 2000). Assessment of aerial imagery demonstrates that the area under application contributes to an important linkage between the vegetation to the north and south of the existing quarries, and connects with remnant native vegetation on adjoining properties to the west. The proposed clearing of this vegetation would reduce this linkage and connectivity and is likely to result in negative impacts on Bush Forever Site No. 290 (Department for Planning, 2010).

Given the location of the application area within Bush Forever Site No. 290 and the Gngangara-Moore River State Forest the proposed clearing may also impact on the environmental values of this area through the increased potential for intrusion of dieback or weed species. The implementation of dieback and weed management conditions may minimise this risk.

Under the Environmental Protection Authority's Position Statement No. 9 Environmental Offsets (2006) Bush Forever sites are considered "critical assets". There is a presumption against recommending approval for proposals that are likely to have significant adverse impacts to "critical assets" (Environmental Protection Authority, 2006). However, 1.08 hectares of the application area covered by vegetation community **TOSBsOSXp** is in poorer condition than the remainder of the application area and is regrowth vegetation considered to be in 'Good-Degraded' condition (Coffey Environments, 2010). The potential impacts to the Bush Forever site caused by the removal of this portion of vegetation community **TOSBsOSXp** may be mitigated by the implementation of an offset condition.

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

Methodology Department for Planning (2010)
Environmental Protection Authority (2006)
Government of Western Australia (2000)
GIS Database:
- DEC 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 Proposal is not likely to be at variance to this Principle

The application area is located immediately adjacent to the Gngangara Underground Water Pollution Control Area which is managed for Priority 1 (P1) water source protection (Department of Water, 2009; GIS Database). Extractive industries are an acceptable land use in P1 areas, however, conditions apply to the storage of fuels and chemicals, the depth of excavation related to the water table and rehabilitation criteria (Department of Water, 2008).

Landform Research (2008) advises that depth to groundwater is approximately 21 metres in the west to approximately 25 metres in the east. Groundwater salinities within and surrounding the application area have been recorded at less than 500 milligrams per litre Total Dissolved Solids (GIS Database). The soils within the application area comprise of limestone ridges overlain by yellow or brown sand (Landform Research, 2008). The sandy and porous nature of the soils indicates that the application area is likely to be considered well drained (Landform Research, 2008). Although the proposed clearing may increase the amount of rainwater that infiltrates to groundwater, given the nature of the overlying materials, the proposed clearing is not likely to adversely impact the quality of groundwater within the Gngangara Underground Water Pollution Control Area.

There are no hydrological features within the application area and this was confirmed during a site visit to the application area on 2 October 2009 (GIS Database). The proposed clearing is not likely to impact on the quality of surface water in any nearby watercourses or wetlands.

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

Methodology Department of Water (2008)
Landform Research (2008)
GIS Database:
- Groundwater Salinity, Statewide
- Hydrography, linear_1
- Public Drinking Water Source Areas (PDWSAs)
- Topographic Contours, Statewide

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

Comments Proposal is not likely to be at variance to this Principle

There are no watercourses or wetlands within the application area (GIS Database). The vegetation is not growing in association with any low lying areas which may be prone to seasonal inundation. The soils within the application area comprise of limestone ridges overlain by yellow or brown sand (Landform Research, 2008). The sandy and porous nature of the soils indicates that the application area is likely to be considered well drained (Landform Research, 2008). The proposed clearing is not likely to cause or increase the incidence of flooding.

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

Methodology Landform Research (2008)
GIS Database:
- Hydrography, linear

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

There are no native title claims over the area under application. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Sites of Aboriginal Significance within the area applied to clear (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licence or approvals are required for the proposed works.

The clearing permit application was referred to the Environmental Protection Authority in 2008 and the published level of assessment was 'Not Assessed, No Advice Given, Managed under Part V of *Environmental Protection Act 1986*'.

The clearing permit application was advertised on 15 May 2009 by the Department of Mines and Petroleum (DMP) inviting submissions from the public. One submission was received from the City of Wanneroo who provided the following advice (City of Wanneroo, 2009; City of Wanneroo, 2010):

- that the proposed clearing may impact on an area of remnant vegetation;
- that the proposed clearing may impact on ecological linkages and important foraging habitat for Rare Fauna listed under the *Environment Protection and Biodiversity Conservation Act 1999*;
- that a management and rehabilitation plan should be developed prior to removal of any vegetation;
- that the application area is located within State Forest and Bush Forever; and
- that care should be taken to mitigate adverse impacts on surrounding native vegetation.

DMP consider that the abovementioned issues have been addressed throughout the clearing application assessment report.

Mining Leases 70/341 and 70/345 are located within a 'Priority Resource Location Area', as identified within State Planning Policy 2.4: Basic Raw Materials (SPP 2.4). Priority Resource Locations are considered regionally significant resources which should be recognised for future basic raw materials extraction and not be constrained by incompatible land uses or development (Western Australian Planning Commission, 2000). SPP 2.4 is designed to facilitate the extraction of basic raw materials close to major markets in the metropolitan region. The policy recognises the importance of ensuring the extraction of basic raw materials occurs with minimal detriment to the environment, including regionally significant bushland and in a manner that allows for the future use and development consistent with the long-term planning intentions for the area (Western Australian Planning Commission, 2000). SPP 2.4 does not remove obligations to identify environmental constraints that may determine the extent and/or manner in which a proposal can be implemented (Western Australian Planning Commission, 2000). SPP 2.4 specifically states that the development of land for the extraction of basic raw materials should not adversely affect the environment. It is for this reason that key legislation for the protection of the environment, including the clearing provisions of the *Environmental Protection Act 1986*, applies to limestone extraction.

State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region (SPP 2.8) provides a policy and implementation framework for the management and protection of bushland in the Perth Metropolitan Region (Western Australian Planning Commission, 2010). The policy does not prevent development provided that it is consistent with the policy and other planning and environmental considerations (Western Australian Planning Commission, 2010). The policy contains a specific policy measure identified under section 5.1.2.2 relating to 'Bush Forever Areas – Urban, Industrial or Resource Development' where land includes significant bushland identified as a priority resource location, key extraction area or extraction area, as identified in SPP 2.4 (Western Australian Planning Commission, 2010). Section 5.1.2.2 allows decision makers to recognise regionally significant bushland as constrained by existing commitments and approvals, including existing mining operations, which may continue to operate in accordance with their existing levels of extraction approvals (Western Australian Planning Commission, 2010).

DMP has considered SPP 2.4 and SPP 2.8 during the assessment of this clearing permit application and has also considered information provided by the proponent and the Geological Survey of Western Australia (GSWA) highlighting the importance of the Wanneroo high grade limestone resource to the continued development of affordable housing and infrastructure in the Perth northern corridor.

The proponent has applied to clear 6.4 hectares of native vegetation however given the high environmental values associated with the area applied to be cleared only 1.08 hectares of the regrowth vegetation type **TOSBsOSXp** in 'Good-Degraded' condition (Coffey Environments, 2010) has been approved to be cleared subject to the implementation of an offset condition.

Methodology City of Wanneroo (2009)

City of Wanneroo (2010)
Department of Planning (2010)
Western Australian Planning Commission (2000)
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5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

P1	Priority One - Poorly Known taxa: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2	Priority Two - Poorly Known taxa: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P3	Priority Three - Poorly Known taxa: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
P4	Priority Four – Rare taxa: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
R	Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable): taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
X	Declared Rare Flora - Presumed Extinct taxa: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

Schedule 1	Schedule 1 – Fauna that is rare or likely to become extinct: being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
Schedule 2	Schedule 2 – Fauna that is presumed to be extinct: being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
Schedule 3	Schedule 3 – Birds protected under an international agreement: being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.

Schedule 4 **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.