



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 6726/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: **GWR Group Limited**

### 1.3. Property details

Property: Mining Lease 53/1016  
Mining Lease 53/1017  
Mining Lease 53/1018  
Mining Lease 53/1078  
Mining Lease 53/1087  
Miscellaneous Licence 53/148

Local Government Area: Shire of Wiluna  
Colloquial name: Wiluna West Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1,220		Mechanical Removal	Mineral Production and Associated Activities

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 21 January 2016

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

**Vegetation Description** Beard vegetation associations have been mapped for the whole of Western Australia. Two Beard vegetation associations have been mapped within the application area (GIS Database):

**Beard vegetation association 18:** Low woodland; mulga (*Acacia aneura*); and  
**Beard vegetation association 202:** Shrublands; mulga & *Acacia quadrimarginea* scrub.

Several flora and vegetation studies have been undertaken over the application area (Clark Lindbeck and Associates, 2015).

A vegetation survey over L53/148 (proposed access road) was undertaken by Jim's Seeds, Weeds and Trees (JSWT) in September 2005 (Clark Lindbeck and Associates, 2015). The survey recorded three broad vegetation types:

- Mulga woodland;
- Mulga creekline;
- Rocky Breakaway.

Botanica Consulting (2006) undertook a study of the flora and vegetation communities over a section of the application area between June and July in 2006. The survey recorded four broad vegetation types:

- Mulga low woodlands;
- Hummock grassland (mulga and *Eucalyptus kingsmillii* over hard Spinifex);
- *Aluta maisonneuvei* ssp *auriculata* Shrubland;
- Mulga with *Acacia burkitti* Shrubland.

Recon Environmental (2010) undertook a study of the flora and vegetation communities over the majority of the application area in March 2009. The survey recorded 29 broad vegetation types:

- SIMS-B: Stony Ironstone Mulga Shrublands on rocky slopes and crests, frequently on BIF;
- ASET: Acacia shrubland over Eremophila and Triodia;
- LOMS: Low Open Mrytaceae Shrubland;
- SIMS-C: Stony Ironstone Mulga Shrublands on rocky slopes and crests;
- UAET: Undulating lateritic slopes of Acacia over low Eremophila and Triodia;
- SUAE: Stony undulating slopes *Acacia rhodophloia* over Eremophila and low shrubs;
- SAEC: Stony *Acacia rhodophloia* and *Eremophila congesta* (P1) Shrubland occurring on crests;
- OALS: Open Acacia Shrubland on ironstone or laterite over low scattered shrubs;
- OALS-S: Open Acacia Shrubland on ironstone or laterite over low scattered shrubs - southern C Ridge
- AXSI: Acacia Mixed Shrubland on Stony Ironstone Slopes;

- SXSS: Scattered Mixed Shrubland on Low Stony Rises;
- SAES: Stony Acacia Eremophila Shrubland;
- DRAS: Drainage Tract Acacia Shrubland;
- USCS: Upland Small Chenopod Species Shrubland;
- SIME: Stony Ironstone Mulga with *Eremophila forrestii* Shrubland;
- SMEC: Stony Slopes Mulga *Eremophila congesta* (P1) Shrubland;
- MSET: Mulga Shrubland over *Eremophila forrestii* and Triodia;
- SIMS-M: Stony Ironstone Mid-slope Mulga Shrubland;
- BCLS: Breakaway Foothill Chenopod Low Shrubland;
- BRXS: Breakaway Mixed Shrublands;
- CBKW: Creek Bank Woodland or Shrubland;
- MUWA: Mulga Wanderrrie Grassy Shrubland;
- HPMD: Hardpan Plain Mulga Woodland – Drainage;
- HPMS: Hardpan Plain Mulga Shrubland;
- MUBW: Hardpan Plain Mulga & Bowgada Shrubland;
- GRMU: Hardpan Plain Mulga Grove;
- SAMA: Sandplain Mallee Spinifex Hummock Grasslands;
- SAMU: Sandplain Mulga Spinifex Hummock Grassland; and
- SASP: Sandplain Spinifex Hummock Grassland.

<b>Clearing Description</b>	Wiluna West Project GWR Group Limited proposes to clear up to 1,220 hectares of native vegetation within a total boundary area of approximately 2,216 hectares for the purpose of mineral production and associated activities. The proposal is located approximately 25 kilometres west of Wiluna, in the Shire of Wiluna.
<b>Vegetation Condition</b>	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);  To  Pristine: No obvious signs of disturbance (Keighery, 1994).
<b>Comment</b>	The vegetation condition was assessed by botanists from Recon Environmental (2010).

### 3. Assessment of application against clearing principles

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

<b>Comments</b>	<p><b>Proposal is at variance to this Principle</b></p> <p>The application area is located within the East Murchison sub-region of the Murchison Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The East Murchison subregion is characterised by its internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development. Vegetation is dominated by Mulga Woodlands often rich in ephemerals; hummock grasslands, saltbush Shrublands and Halosarcia Shrublands (Cowan, 2001).</p> <p>Flora surveys of the application area have recorded a total of 279 native flora taxa from 120 genera and 41 families (Recon Environmental, 2010). Seven Priority flora species have been identified within the application area, with a further eleven known to be present within the local region (Clark Lindbeck and Associates, 2015). Two of the Priority flora species identified within the application area are Priority 1 (<i>Eremophila congesta</i>; and <i>Ptilotus chrysocomus</i>), and five are Priority 3 (<i>Calytrix uncinata</i>; <i>Eremophila arachnoides subsp. arachnoides</i>; <i>Homalocalyx echinulatus</i>; <i>Prostanthera ferricola</i>; and <i>Sida picklesiana</i>).</p> <p>The large number of Priority flora species to be impacted by the proposed clearing, whether from direct or indirect effects, has the potential to be significant, particularly as Banded Iron Formation (BIF) landforms typically constitute unique vegetation assemblages that differ from other nearby ranges (DPaW, 2015b). While Wiluna West has lower species diversity than other BIF and elevated breakaways in the region due to its arid climatic zone, its vegetation differs from nearby ranges (DPaW, 2015b). Wiluna West was also found to be a range extension for several Priority species (<i>Beyeria lapidicola</i>, <i>Calytrix uncinata</i>, <i>Prostanthera ferricola</i>) from a 2006 survey (DPaW, 2015b).</p> <p>A large proportion of the application area is located within the Priority 1 Priority Ecological Community (PEC) (Wiluna West Banded Ironstone Formation (BIF)). The Wiluna West BIF is approximately 7,456 hectares, with the application boundary covering approximately 24% of this (GIS Database). BIF ranges of the Yilgarn generally support vegetation units that vary in composition, even over short geographical distances. Some of these vegetation units have very restricted distributions within individual BIF ranges, especially on the ridges, and occur as islands that differ structurally and compositionally from the surrounding vegetation matrix (DPaW, 2015c). Gibson et al (2012) noted that diversity between habitats was high across the BIF ranges in the Yilgarn including in more arid areas, such as Wiluna (DPaW, 2015c).</p> <p>Recon Environmental (2010) notes that the upland vegetation communities SIMS-B and SIMS-M are of particular significance based on restricted distribution and presence of BIF endemics (DPaW, 2015c). SIMS-B is proposed for a high proportional impact at 33.6%, and it is noted that it is extremely restricted within the region and the majority of this habitat type was found to be within the PEC boundary, and associated with BIF (Recon Environmental, 2010). Recon Environmental (2010) note that SIMS-M is restricted in occurrence to the</p>
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Wiluna BIF. Markey and Dillon (2009) noted that the vegetation on the Wiluna BIF ranges was in relatively good condition, with no apparent signs of excessive damage from grazing, but considerable damage from past mining and exploration activities on parts of the vegetation on the ridge. They also noted that none of the vegetation units of the range were represented on conservation estate, and that exploration and mining posed a significant potential threat (DPaW, 2015c; Markey and Dillon, 2009). With the application boundary covering approximately 24% of the Wiluna West BIF PEC, and impacts of 1.04% to the project areas known SIMS-M vegetation community and 33.6% of SIMS-B, potential impacts are considered significant. The LOMS vegetation Unit is also proposed for very high level impacts at 36.6% and contains the presence of Priority flora, including BIF endemic flora (Clark Lindbeck and Associates, 2015). Clark Lindbeck and Associates (2015) have noted that the SIMS-B and LOMS vegetation groups have also been recorded at the northern end of the BIF ranges occurring south of the Ullala Road. SIMS-B, SIMS-M, and LOMS cover an area of approximately 465.2 hectares within the project area, with approximately 126 hectares (27%) within the disturbance footprint. Potential impacts to these vegetation communities may be minimised by the implementation of a restricted clearing condition.

*Beyeria lapidicola* (Priority 1) and *Prostanthera ferricola* (Priority 3) are restricted to BIF, and the proponent has considered their importance when planning their proposed works (DPaW, 2015b). These species are mainly restricted to the vegetation types SIMS-M and SIMS-B. The SIMS-M vegetation community is restricted in occurrence to BIF within the Wiluna West PEC and SIMS-B is mostly restricted in occurrence to BIF and mostly restricted in distribution to the Wiluna West PEC (DPaW, 2015c; Recon Environmental, 2010). Therefore, priority species occurring within the SIMS-M and SIMS-B vegetation communities should also be considered of higher importance. The SIMS-S vegetation has potentially already been impacted by previously approved clearing works (DPaW, 2015a). *Beyeria lapidicola* (Priority 1), *Eremophila congesta* (Priority 1), *Homalocalyx echinulatus* (Priority 3), *Tribulus adelacanthus* (Priority 3), *Sida picklesiana* (Priority 3) and *Olearia mucronata* (Priority 3) were found in SIMS-M and SIMS-B. Any impacts to these species within the SIMS-M and SIMS-B vegetation communities have the potential to be significant on a local and regional scale (DPaW, 2015c).

There are no known Threatened flora or Threatened Ecological Communities within the application area (Clark Lindbeck and Associates, 2015; GIS Database).

No Weeds of National Significance or Declared Pests under the *Biosecurity and Agricultural Management Act 2007* were recorded during the survey, however six introduced flora taxa were recorded. The proposed vegetation clearing has the potential to introduce weed species into the local area should adequate hygiene practices not be put in place. Weeds can affect biodiversity in a number of ways, including out competing native species for resources and increasing the fire risk. The potential spread of introduced species as a result of the proposed clearing may be minimised by the implementation of a weed management condition

Fauna surveys conducted in the Wiluna West area have recorded a total of 71 bird, 27 mammal, two amphibian and 40 reptile species (Clark Lindbeck and Associates, 2015). Six of these species are of conservation significance. BIFs of the Midwest region tend to support a distinct assemblage of fauna in comparison to the surrounding flat areas of sandplain and woodland (DPaW, 2015c; Government of Western Australia, 2007). The number of fauna species recorded at Wiluna West is similar to that of other BIFs within the Midwest region (Government of Western Australia, 2007).

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

**Methodology** Clark Lindbeck and Associates (2015)  
Cowan (2001)  
DPaW (2015b)  
DPaW (2015c)  
Gibson *et al* (2012)  
Government of Western Australia (2007)  
Keighery (1994)  
Markey and Dillon (2009)  
Recon Environmental (2010)  
GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- Threatened and Priority Flora  
- Threatened Ecological Sites Buffered

**(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**

There have been four Level 2 fauna surveys undertaken by Ninox Wildlife Consulting in the Spring of 2005, 2006 and 2007, and by Keith Lindbeck and Associates in Spring 2011. These surveys covered the entire Wiluna West area including the application area. These surveys recorded 71 bird, 27 mammal, two amphibian and 40 reptile species from the Wiluna West area (Clark Lindbeck and Associates, 2015). Five of these are conservation significant fauna:

- Malleefowl (*Leipoa ocellata*) – Vulnerable;
- Mulgara (*Dasyercus cristicauda*) – Priority 4;

- Long-tailed Dunnart (*Sminthopsis longicaudata*) – Priority 4;
- Peregrine Falcon (*Falco peregrinus*) – Migratory.

It is noted that 78 Malleefowl mounds have been recorded within the greater Wiluna West project area with six having been active within the last eight years and 68 being assessed as being near-extinct to extinct (Clark Lindbeck and Associates, 2015). The targeted survey conducted in March 2014 reassessed 24 of the previously recorded mounds and only two mounds were noted as being active within the application area (DPaW, 2015a; Clark Lindbeck and Associates, 2015). It is known the same pair may use the same mound in subsequent years, or may return to a recently used mound (usually one that has been used in the previous 10 years) or may rebuild an old or very old mound or make a new mound (DPaW, 2015a). Males may work multiple mounds within their home range during the breeding season, prior to one mound being selected for egg laying. It is not possible to determine or estimate the number of individual malleefowl or breeding pairs that may be in the area based on mounds being recorded as active, unless there is a record of chicks hatching from mounds (DPaW, 2015a).

The proposed clearing will directly impact the individual malleefowl and breeding pairs whose home range and breeding territories are within or are overlapping the application area (DPaW, 2015a). Malleefowl with territories adjacent to the application area may also be impacted, as well as chicks dispersing from mounds in the surrounding areas (DPaW, 2015a). Impacts of the clearing may be a reduction in home range size, breeding territory size, available breeding and foraging habitat, habitat for chicks to disperse into, along with potential mortality of individuals (DPaW, 2015a). The home range size of malleefowl is recorded as being 0.5 to 4.6km<sup>2</sup> with considerable overlap noted as a possibility, however the home range size of malleefowl in the vicinity of Wiluna is unknown (DPaW, 2015a). Potential impacts to the Malleefowl may be minimised by the implementation of a fauna management condition.

Four Mulgara have been recorded in spinifex sandplain north of the application area (Clark Lindbeck and Associates, 2010). Additional searches by Martu elders found four old burrows, four active burrows and three areas with recent tracks (Clark Lindbeck and Associates, 2015). As there is not spinifex sandplain within the application area, the proposed clearing is not likely to impact this species.

The Long-tailed Dunnart was recorded at survey sites within the application area. GWR Group Limited has committed to a trapping and relocation program being conducted by a fauna specialist prior to clearing activities. While it is preferable to avoid clearing the sites where the species was recorded, it is not restricted and had been recently recorded (since 2010) elsewhere in the Goldfields as well as in the Midwest and Pilbara regions. There is a 2014 record of this species approximately 20 kilometres north of the application area (Clark Lindbeck and Associates, 2015).

A Peregrine Falcon was observed flying over the survey area (Ninox Wildlife Consulting, 2006). This species also has a wide distribution across the state within a variety of habitats (Johnstone and Storr, 2004). It usually nests on ledges in cliffs and sometimes in hollow trees (Johnstone and Storr, 2004). No nests have been recorded and the application area is not likely to represent significant habitat for this species.

There are five other conservation significant fauna species that have been identified as potentially occurring in the local area:

- Great Desert Skink (*Egernia kintorei*) – Vulnerable;
- Striated Grasswren (*Amytornis striatus*) – Priority 4;
- Fork-tailed Swift (*Apus pacificus*) – Migratory; and
- Rainbow Bee-eater (*Merops ornatus*) – Migratory.

A Short Range Endemic (SRE) survey was conducted at Wiluna West in October 2006 and November 2011. The 2006 search found ten species of spider, however, none of these were identified as being an SRE (Clark Lindbeck and Associates, 2015). The 2011 search found 24 invertebrates, comprising three spiders, eight pseudoscorpions and 13 scorpions. Results indicate that the spiders were either juvenile or female and therefore could not be identified to species and that the pseudoscorpions require taxonomic revision (Burger et al., 2012).

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

#### Methodology

Burger *et al.* (2012)  
 Clark Lindbeck and Associates (2015)  
 DPaW (2015a)  
 Johnstone and Storr (2004)  
 Ninox Wildlife Consulting (2006)  
 GIS Database:  
 - Pre-European Vegetation  
 - Topographic contours

**(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 databases, there are no records of Threatened flora within the application area (GIS Database). None of the flora surveys conducted over the application area have recorded any Threatened flora (Clark Lindbeck and Associates, 2015).

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

**Methodology** Clark Lindbeck and Associates (2015)  
GIS Database:  
- Threatened and Priority Flora

**(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 databases, there are no records of Threatened Ecological Communities (TECs) within the application area (GIS Database). None of the flora surveys over the Wiluna West area have recorded any instances of a TEC (Clark Lindbeck and Associates, 2015).

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

**Methodology** Clark Lindbeck and Associates (2015)  
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 is not at variance to this Principle**

The application area lies within the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 99% of the pre-European vegetation remains (see table) (Government of Western Australia, 2014; GIS Database).

The vegetation in the application area is broadly mapped as Beard vegetation associations 18 and 202 (GIS Database):

18: Low woodland; mulga (*Acacia aneura*); and  
202: Shrublands; mulga & *Acacia quadrimarginea* scrub.

These vegetation associations have not been extensively cleared as over 99% remains at a State, and bioregional level for all vegetation associations (see table) (Government of Western Australia, 2015). There has not been extensive clearing in the local region and the vegetation within the application area is not a remnant nor does it form part of any remnants within the local area (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPAW Managed Lands
IBRA Bioregion - Murchison	28,120,587	28,044,823	~99	Least Concern	~7.69
Beard vegetation associations - State					
18	19,892,305	19,843,727	~99	Least Concern	~6.29
202	448,529	448,344	~99	Least Concern	~21.97
Beard vegetation associations - Bioregion					
18	12,403,915	12,363,252	~99	Least Concern	~4.96
202	339,743	339,641	~99	Least Concern	~21.25

\* Government of Western Australia (2014)

\*\* Department of Natural Resources and Environment (2002)

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

**Methodology** Department of Natural Resources and Environment (2002)  
Government of Western Australia (2014)  
GIS Database:  
- IBRA WA (regions – subregions)  
- 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** **Proposal is at variance to this Principle**

There are numerous ephemeral and ill-defined watercourses within the application area (GIS Database). These watercourses only flow following periods of heavy rain (Clark Lindbeck and Associates, 2010). The vegetation community 'DRAS – Drainage Tract Acacia Shrubland' appears to be associated with the ill-defined drainage lines of the application area (Clark Lindbeck and Associates, 2010; GIS Database).

Given this vegetation community is associated with a watercourse, the proposed clearing is at variance to this Principle. However, the creekline vegetation groups identified during the survey work did not contain riparian species (Clark Lindbeck and Associates, 2015). The species growing in association with the creeklines are also common to other communities in the local area (Clark Lindbeck and Associates, 2015).

**Methodology** Clark Lindbeck and Associates (2015)  
GIS Database:  
- Geodata, Lakes  
- 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 application area lies within the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Murchison Region is characterised by undulating hills, with occasional ranges of low hills and extensive sand plains in the eastern half. The principal soil type is shallow earthy loam overlying red-brown hardpan; shallow stony loams on hills and red earthy sands on sand plains (Beard, 2013).

The application area has been mapped as occurring on the Fisher, Violet, Glengarry, Dural, Gabanintha and Sherwood land systems (GIS Database):

- The Fisher land system is characterised by wash plains on hardpan with mulga Shrublands.
- The Violet land system is characterised by stony plains with acacia shrublands and halopythic shrublands.
- The Glengarry land system is characterised by hills and ranges with acacia shrublands.
- The Dural land system is characterised by stony plains with acacia shrublands.
- The Gabanintha land system is characterised by whitestone hill ranges and very open mulga (Mabbutt et al, 1963).
- The Sherwood land system is characterised by widespread stony granite plains with laterite breakaways (Mabbutt et al., 1963). The alluvial fan unit of the Sherwood land system is prone to shallow gullying, and the drainage tracts have fragile soils which are highly susceptible to water erosion (Mabbutt et al., 1963).

Given the size of the proposed clearing (1,220 hectares within a boundary area of 2,216 hectares), there is a potential of land degradation occurring during rainfall events.

The Wiluna West Range is similar to most Banded Ironstone Formations (BIF's) of the Yilgarn Craton which are characterised by a stony surface mantle which provides effective protection against soil erosion (Government of Western Australia, 2007). The disturbance or removal of this stony mantle may initiate soil erosion. However, given the poor soil coverage on BIF's there is likely to be a minimal amount of erodible material within the application area (Government of Western Australia, 2007).

At a broad scale the pH of the soil within the application area ranges from 5.5 - 6.0 and there is no known occurrence of acid sulphate soils (CSIRO, 2009). Given the application area's elevated position in the landscape the proposed clearing is not likely to cause any water logging or an increase in the ground water level causing salinity.

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

**Methodology** Beard (1990)  
CSIRO (2009)  
Government of Western Australia (2007)  
Mabbutt et al. (1963)  
GIS Database:  
- IBRA WA (regions – subregions)

- Soils, 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 not likely to be at variance to this Principle**

The application area is not located within any conservation areas or Department of Parks and Wildlife managed lands (GIS Database). The nearest conservation area is the ex-pastoral station Kaluwiri Station, located approximately 37 kilometres south-west of the application area (GIS Database). At this distance there is not likely to be any impacts on the conservation values of Kaluwiri Station.

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

**Methodology** GIS Database:  
- DPaW 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 not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). There are no permanent watercourses within the application area (GIS Database). There are several ill-defined ephemeral watercourses present within the application area (GIS Database). These watercourses only ever flow following heavy rainfall events (Clark Lindbeck and Associates, 2015). The proposed clearing is not expected to impact the quality of water within these watercourses. The Lake Way drainage system lies approximately 30 kilometres to the east of the application area, whilst Lake Mason is approximately 95 kilometres south southwest of the application area (Clark Lindbeck and Associates, 2015). It is unlikely that either of these will be impacted by the proposed clearing.

The groundwater salinity within the application area is between 500 – 1,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). This is considered to be potable water. Given the surrounding areas remain largely uncleared, the proposed clearing of 1,220 hectares within the application area is not likely to cause salinity levels to alter.

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

**Methodology** Clark Lindbeck and Associates (2015)  
GIS Database:  
- Groundwater Salinity, Statewide  
- Hydrography, linear  
- Public Drinking Water Source Areas (PDWSAs)

**(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 permanent water bodies within the application area. With an average annual rainfall of 256.3 millimetres and an average annual evaporation rate of 3,800 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2015; Clark Lindbeck and Associates, 2015; GIS Database). Being located on a range, the topography within the application area facilitates surface water runoff as opposed to ponding, hereby reducing the risk of flooding.

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

**Methodology** BoM (2015)  
Clark Lindbeck and Associates (2015)  
GIS Database:  
- Evaporation Isopleths  
- Hydrographic Catchments - Catchments

**Planning instrument, Native Title, Previous EPA decision or other matter.**

**Comments**

There is one Native Title Claim (WC2007/003) over the area under application (DAA, 2015). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. 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*.

According to available databases, there are several registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

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

It is noted that the proposed clearing may impact on a protected matter under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of the Environment for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of the Environment for further information regarding notification and referral responsibilities under the EPBC Act.

The proposal was referred to the Environmental Protection Authority (EPA) for consideration of its potential environmental impact. On the 22 April 2013, the EPA made the decision not to assess the proposal.

The clearing permit application was advertised on 7 September 2015 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

**Methodology** DAA (2015)  
GIS Database:  
- Aboriginal Sites of Significance

#### 4. References

- Beard JS, Beeston GR, Harvey JM, Hopkins AJM, Shepherd DP (2013) The vegetation of Western Australia at the 1:3,000,000 scale. Explanatory memoir. Second edition. Conservation Science Western Australia 9, 1–152.
- BoM (2015) Climate Statistics for Australian Locations. A Search for Climate Statistics for Wiluna, Australian Government Bureau of Meteorology, viewed 30 November 2015, <[http://www.bom.gov.au/climate/averages/tables/cw\\_012038.shtml](http://www.bom.gov.au/climate/averages/tables/cw_012038.shtml)>.
- Botanica Consulting (2006) Flora and Vegetation of the Wiluna West Banded Ironstone Formations. Report prepared for Golden West Resources and the Department of Environment and Conservation, September 2006.
- Burger, M. A., Castalanelli, M.A. and Harvey, M. S. (2012). Pseudoscorpions and spiders (Arachnida) from Wiluna West, Western Australia. Unpublished report, March 2012. Western Australian Museum, Perth.
- Clark Lindbeck and Associates (2015) GWR Group limited Wiluna West Iron Ore Project Bowerbird, C3 and C4 Deposits. Supporting Documentation for Clearing Permit Application CPS 6726/1. Unpublished report for GWR Group Limited 13 August 2015.
- Commonwealth Scientific and Industrial Research Organisation (2009) Australian Soil Resource Information System. Available online at: [http://www.asris.csiro.au/index\\_ie.html](http://www.asris.csiro.au/index_ie.html) Accessed on 30 November 2015.
- Cowan, M (2001) Murchison 1 (MUR1 - East Murchison subregion) Subregional description and biodiversity values, dated August 2001. In: "A biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002". Report published by the Department of Conservation and Land Management, Perth, Western Australia. Available online at: [http://www.dpaw.wa.gov.au/images/documents/about/science/projects/waaudit/murchison01\\_p466-479.pdf](http://www.dpaw.wa.gov.au/images/documents/about/science/projects/waaudit/murchison01_p466-479.pdf) Accessed on 30 November 2015.
- DAA (2015) Aboriginal Heritage Inquiry System, Government of Western Australia, Department of Aboriginal Affairs, Perth, viewed 30 November 2015 < <http://maps.dia.wa.gov.au/AHIS2/>>.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- DPaW (2015a) Fauna advice to Assessing Officer from Species and Communities Branch, Department of Parks and Wildlife. Received 21 October 2015.
- DPaW (2015b) Flora advice to Assessing Officer from Species and Communities Branch, Department of Parks and Wildlife. Received 21 October 2015.
- DPaW (2015c) Priority Ecological Community advice to Assessing Officer from Species and Communities Branch, Department of Parks and Wildlife. Received 21 October 2015.
- Government of Western Australia (2007) Strategic Review of the Conservation and Resource Values of the Banded Iron Formations of the Yilgarn Craton. Published jointly by the Department of Environment and Conservation and the Department of Industry and Resources, Perth, Western Australia.
- Government of Western Australia (2014) 2014 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.
- Johnstone, R.E and Storr, G.M (2004) Handbook of Birds of Western Australia Vol. I, Western Australian Museum, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mabbutt JA, Litchfield WH, Speck NH, Sofoulis J, Wilcox DG, Arnold JA, Brookfield M and Wright RL (1963) General report on the lands of the Wiluna-Meekatharra area, Western Australia, 1958. CSIRO Land Research Series No. 7.
- Markey, A.S, and Dillon, S.J. (2009) Flora and vegetation of the banded iron formations of the Yilgarn Craton: Herbert Lukin Ridge (Wiluna). Conservation Science W. Aust. 7 (2): 391–412.
- Ninox Wildlife Consulting (2006) A Vertebrate Fauna Survey of the Wiluna West Project Area, Western Australia. Unpublished report for Golden West Resources, dated November 2006.
- Recon Environmental (2010) Joyner's Find Hills Regional Vegetation Survey. Unpublished report for Golden West Resources, dated March 2010.



## 5. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia (now DPaW and DER)
<b>DER</b>	Department of Environment Regulation, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia
<b>DRF</b>	Declared Rare Flora
<b>DotE</b>	Department of the Environment, Australian Government
<b>DoW</b>	Department of Water, Western Australia
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia
<b>DSEWPaC</b>	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>TEC</b>	Threatened Ecological Community

## **Definitions:**

{DPaW (2015) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia):-

- T**                    **Threatened species:**  
Published as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).  
**Threatened fauna** is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.  
**Threatened flora** is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.  
The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.
- CR**                    **Critically endangered species**  
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EN**                    **Endangered species**  
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU**                    **Vulnerable species**  
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX**                    **Presumed extinct species**  
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
- IA**                    **Migratory birds protected under an international agreement**  
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD**                    **Conservation dependent fauna**  
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS**                    **Other specially protected fauna**  
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P**                        **Priority species**  
Species which are poorly known; or  
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
- P1**                    **Priority One - Poorly-known species:**  
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey

requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

**P2 Priority Two - Poorly-known species:**

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

**P3 Priority Three - Poorly-known species:**

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

**P4 Priority Four - Rare, Near Threatened and other species in need of monitoring:**

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.