



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 6360/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Pastoral Management Pty Ltd

### 1.3. Property details

Property: General Purpose Lease 08/75  
Local Government Area: Shire of Roebourne  
Colloquial name: Sino Iron Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
70		Mechanical Removal	Accommodation Camp and Associated Infrastructure

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 18 December 2014

## 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
<p>The clearing permit application area has been broadly mapped as Beard vegetation associations:</p> <p>93: Hummock grasslands, shrub steppe, kanji over soft spinifex.</p> <p>157: Hummock grassland; grass steppe; hard spinifex, <i>Triodia wiseana</i>.</p> <p>175: Short bunch grassland – savanna/grass plain (Pilbara).</p> <p>A desktop flora and vegetation assessment was conducted by Astron (2009) over the application area however vegetation types within the application area were not mapped in the assessment.</p>	<p>Sino Iron Project.</p> <p>Pastoral Management Pty Ltd proposes to clear up to 70 hectares of native vegetation within a total boundary of approximately 220 hectares, for the purpose of constructing an accommodation camp and associated infrastructure. The project is located approximately 74 kilometres south west of Karratha, in the Shire of Roebourne.</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).</p> <p>to</p> <p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).</p>	<p>Vegetation condition derived from a flora and vegetation survey conducted by Astron (2008).</p>

## 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 may be at variance to this Principle

The application area is located within the Roebourne sub-region of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Roebourne subregion is broadly described as quaternary alluvial plains with a grass savanna (typically *Triodia* hummock grasslands) and shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera*. Areas of Samphire, *Sporobolus* and Mangal occur on marine alluvial flats (Kendrick and Stanley, 2003).

A flora and vegetation desktop assessment was conducted over the application area by Astron Environmental Services (Astron) in 2009 (Astron, 2009). There were no Threatened Ecological Communities or rare flora species recorded within 40 kilometres of the application area (GIS Database).

A flora and vegetation field survey was conducted by Astron approximately 2 kilometres north of the application area in November 2008 (Astron, 2008). The survey area for the flora and vegetation survey was considered comparable to the application area due to similar topography, landforms and vegetation type associations.

A total of 61 native flora taxa belonging to 42 genera and 21 families were recorded during the survey. No Threatened Ecological Communities, rare or priority flora species were identified within the survey area during

the flora survey (Astron, 2008).

The application area is wholly mapped within the buffer zone of the Horseflat land system coastal Priority Ecological Community (PEC) (GIS Database). This ecosystem is currently listed as a Priority 1 PEC and is recognised by the Department of Parks and Wildlife (DPaW) as being under threat from grazing, clearing for mining and infrastructure (Astron, 2008). However, the flora and vegetation report states that gilgai mosaic tussock grassland vegetation associations (Hpg1, Hpg2 and Hpg3) within the application area are analogous to other areas in the region currently identified as the Roebourne Plains coastal grassland PEC (Astron, 2008). The total mapped distribution of the Roebourne Plains coastal grassland PEC is approximately 6006 hectares therefore the proposed clearing will impact less than 1.2% of this PEC (Astron, 2008; GIS Database).

One Declared weed species, Mesquite (*Prosopis* sp.) was recorded during the flora and vegetation field survey. Four additional introduced taxa (*Cenchrus ciliaris* (Buffel Grass), *Cenchrus setiger* (Birdwood Grass), *Cucumis melo* subsp. *agnestis* (Ulcardo Melon) and *Malvastrum americanum* (Spike Malvastrum) were also recorded during the flora and vegetation survey. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna desktop assessment and an opportunistic fauna sighting field survey were conducted by Astron approximately 2 kilometres north of the application area in November 2008 (Astron, 2008). No conservation significant fauna species were recorded during the fauna field survey however two species of conservation significance (Australian Bustard (*Ardeotis australis*) (P4) and Lakeland Downs Mouse (*Leggadina lakedownensis*) (P4)) have the potential to occur within the application area (Astron, 2008).

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

**Methodology**

Astron (2008)  
Astron (2009)  
Kendrick and Stanley (2003)  
GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- Pre-European Vegetation  
- 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 not likely to be at variance to this Principle**

A fauna desktop assessment and an opportunistic fauna sighting field survey were conducted by Astron approximately 2 kilometres to the north of the application area in November 2008 (Astron, 2008). The field survey identified the following two broad habitats:

- Grasslands of either *Eriachne xerophila*, *E. benthamii* or *Xerochloa imberbis* over cracking and non-cracking clays; and
- *Acacia xiphophylla* open shrubland over either Spinifex or tussock grassland.

None of these broad fauna habitats are considered to be restricted or crucial to the survival of fauna indigenous to Western Australia (Astron, 2008, GIS Database).

No conservation significant fauna species were recorded during the opportunistic fauna sighting field survey however two species of conservation significance (Australian Bustard (*Ardeotis australis*) (P4) and Lakeland Downs Mouse (*Leggadina lakedownensis*) (P4)) have the potential to occur within the application area (Astron, 2008). None of these fauna species are considered to be dependent upon the fauna habitats present in the application area and both are likely to occur in similar habitats located outside the application area (Astron, 2008; GIS Database).

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

**Methodology**

Astron (2008)  
Astron (2009)  
GIS Database:  
- Pre-European Vegetation  
- Threatened and Priority Fauna  
- Threatened Ecological Sites Buffered

**(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**

There are no records of Threatened Flora within or in close proximity to the application area (GIS Database). The flora and vegetation survey conducted by Astron over part of the application area did not record any

species of Threatened Flora and none were expected to occur due to lack of suitable habitat (Astron, 2008).

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

**Methodology** Astron (2009)  
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**

There are no known Threatened Ecological Communities within the application area (GIS Database).

The flora and vegetation desktop assessment conducted by Astron over the application area did not record any Threatened Ecological Communities (Astron, 2009).

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

**Methodology** Astron (2009)  
GIS Database:  
- Threatened Ecological Communities

**(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 falls within the Pilbara Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 99% of the Pre-European vegetation remains (see table) (GIS Database, Government of Western Australia, 2013).

The vegetation of the application area has been mapped as the following Beard vegetation associations (GIS Database):

- 93: Hummock grasslands, shrub steppe, kanji over soft spinifex.
- 157: Hummock grassland; grass steppe; hard spinifex, *Triodia wiseana*.
- 175: Short bunch grassland – savanna/grass plain (Pilbara).

Approximately 99% of these Beard vegetation associations remain at both state and bioregional level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Lands
IBRA Bioregion - Pilbara	17,808,657	17,733,584	~99	Least Concern	8.2
<b>Beard vegetation associations - State</b>					
93	3,044,309	3,040,641	~99	Least Concern	2.4
157	502,728	499,312	~99	Least Concern	18.6
175	526,958	524,640	~99	Least Concern	5.2
<b>Beard vegetation associations - Bioregion</b>					
93	3,044,293	3,040,639	~99	Least Concern	2.4
157	502,648	499,303	~99	Least Concern	18.6
175	507,860	507,466	~99	Least Concern	5.2

\* Government of Western Australia (2013)

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

**Methodology** Department of Natural Resources and Environment (2002)  
Government of Western Australia (2013)  
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 Proposal may be at variance to this Principle**

There are no permanent watercourses or wetlands mapped within the application area, with the closest wetland listed on the Directory of important Wetlands being Millstream Pools located approximately 100 km away (GIS Database).

A minor non-perennial watercourse receiving water from Eramurra Creek traverses the western portion of the application area in a north-south direction. A second minor non-perennial watercourse fed from the same creek is located to the east of the application area, and its closest point is 120 m from the southeast corner (GIS Database).

The main accommodation camp area will be located on a flat spinifex grassland area between the two drainage lines, with the main access road the only area impacting a drainage line (GIS Database). The proponent has committed to implementing suitable floodway control devices (i.e. pipe culverts) at creek crossings within the application area to prevent flooding and ensure the natural surface water flow of drainage lines is maintained (Astron, 2009).

Given that most of the area proposed to be cleared for the accommodation camp will occur on flat spinifex grassland and that suitable floodways control devices will be constructed at creek crossings within the application area it is not expected that the proposed clearing will have a significant impact on vegetation associated with a watercourse.

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

- Methodology**
- Astron (2008)
  - GIS Database
  - Hydrography, linear
  - DEC Tenure
  - Pre-European Vegetation
  - Topographic Contours

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

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

Approximately 80% of the application area is located within the Paraburdoo land system, which is characterised by "basalt derived stony gilgai plains supporting snakewood and mulga shrublands with spinifex and tussock grasses" (GIS Database; Van Vreeswyk et al. 2004). The main soil types within this land system are shallow red/brown non-cracking clays, red shallow loams and self-mulching cracking clays, with much of the system being resistant to erosion except drainage lines (Van Vreeswyk et al., 2004).

The remaining 20% of the application area is situated within the Rocklea land system, which is characterised by "basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands" (GIS Database; Van Vreeswyk et al. 2004). The main soil types are stony soils, red shallow loams and calcareous shallow loams, and the entire system has a very low erosion risk (Van Vreeswyk et al. 2004).

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

- Methodology**
- Astron (2009)
  - Van Vreeswyk et al., (2004)
  - GIS Database
  - Rangeland Land System Mapping
  - 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 does not lie within any conservation areas (GIS Database). The nearest conservation areas are the Great Sandy Island Nature Reserve, located approximately 15 kilometres north west of the application area and the former Mandie pastoral lease which is proposed for conservation, located approximately 20 kilometres north east of the application area (GIS Database). Given the distance between the application area and the conservation areas, the proposed clearing is not likely to impact the environmental

values of any conservation area.

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

**Methodology** 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 not located within a Public Drinking Water Source Area (PDWSA) and there are no permanent water bodies or watercourses within the application area (GIS Database).

A minor non-perennial watercourse receiving water from Eramurra Creek traverses the western portion of the application area in a north-south direction. A second minor non-perennial watercourse fed from the same creek is located to the east of the application area, and its closest point is 120 m from the southeast corner (GIS Database). The proponent has committed to implementing suitable surface water flow control devices (i.e. the use of pipe culvert at creek crossings) so it is unlikely that the proposed clearing will have a significant impact on natural surface water flows (Astron, 2009).

Groundwater salinity within the application area is between 3,200 and 3,400 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the low to moderate TDS levels within the application area and the relatively small scale of clearing proposed, it is not likely that salinity levels within the application area will alter significantly (GIS Database).

The proponent has indicated that the proposed waste water treatment spray irrigation area will be constructed and managed in accordance with licences and works approvals to be obtained from the Department of Environment Regulation in accordance with Part V of the EP Act.

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

**Methodology** Astron (2009)  
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**

The climate of the Pilbara region is semi-arid, with a low average rainfall of approximately 200-300 millimetres per year (BoM, 2014). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (BoM, 2014).

A minor non-perennial watercourse receiving water from Eramurra Creek traverses the western portion of the application area in a north-south direction. A second minor non-perennial watercourse fed from the same creek is located to the east of the application area, and its closest point is 120 meters from the southeast corner (Astron, 2009; GIS Database). The proponent has committed to implementing surface water flow control devices (i.e. the use of pipe culvert at creek crossings) so it is unlikely that the proposed clearing will or exacerbate the incidence or intensity of flooding (Astron, 2009).

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

**Methodology** Astron 2009  
BoM (2014)  
GIS Database:  
- Hydrography, linear  
- Hydrographic, catchments

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

**Comments**

The clearing permit application was advertised on 17 November 2014 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the application.

There is one Native Title Claim (WC1996/089) over the area under application (GIS Database). 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*.

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

**Methodology** GIS Database:

- Aboriginal Sites of Significance
- Native Title Claims, Determined by the Federal Court
- Native Title Claims, Filed at the Federal Court
- Native Title Claims, Registered with the NNTT

#### 4. References

- Astron (2008) Vegetation, Flora and Fauna Survey. Proposed Airstrip and Access Road. Mardie Station. Report prepared for Pastoral Management Pty Ltd by Astron Environmental Services, Western Australia.
- Astron (2009) Proposed Accommodation Village Flora and Fauna Desktop Assessment. Report prepared for Pastoral Management Pty Ltd by Astron Environmental Services, Western Australia.
- BoM (2014) Bureau of Meteorology (WWW Document). Retrieved from <http://www.bom.gov.au>.
- 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.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, 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.
- Kendrick, P., and Stanley F. (2003) Pilbara 4 (PIL4 - Roebourne synopsis). A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.
- Van Vreeswyk, A.M.E.; Payne, A.L.; Leighton, K.A.; Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.
- Van Vreeswyk, A.M.E.; Payne, A.L.; Leighton, K.A.; Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.

#### 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
<b>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>s.17</b>	Section 17 of the <i>Environment Protection Act 1986</i> , Western Australia
<b>TEC</b>	Threatened Ecological Community

## **Definitions:**

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

- T**      **Threatened species:**  
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).  
  
Threatened Fauna and Flora are further recognised by DPaW according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo *Calyptorhynchus latirostris* is specially protected under the *Wildlife Conservation Act 1950* as a threatened species with a ranking of Endangered.
- Rankings:**  
CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.  
EN: Endangered - considered to be facing a very high risk of extinction in the wild.  
VU: Vulnerable - considered to be facing a high risk of extinction in the wild.
- X**      **Presumed Extinct species:**  
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).
- IA**     **Migratory birds protected under an international agreement:**  
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.  
Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.
- S**      **Other specially protected fauna:**  
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P1**     **Priority One - Poorly-known species:**  
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
- P2**     **Priority Two - Poorly-known species:**  
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
- P3**     **Priority Three - Poorly-known species:**  
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities 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 localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
- P4**     **Priority Four - Rare, Near Threatened and other species in need of monitoring:**  
-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.  
-Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.  
-Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
- P5**     **Priority Five - Conservation Dependent species:**  
**Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.**