



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 6358/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Pastoral Management Pty Ltd

### 1.3. Property details

Property: Miscellaneous Licence 08/45  
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:
75		Mechanical Removal	Aerodome and Associated Infrastructure

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 11 December 2014

## 2. Site Information

### 2.1. Existing environment and information

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

##### Vegetation Description

The clearing permit application area has been broadly mapped as Beard vegetation associations: 93: Hummock graslands, shrub steppe, kanji over soft spinifex. 175: Short bunch grassland - savanna/grass plain (Pilbara).

A flora and vegetation survey conducted by Astron (2008) over a total area of approximately 141 hectares, including part of the application area identified the following eight vegetation types:

Hpg1: *Eragrostis xerophila* (open) tussock grassland.

Hpg2: *Eriachne benthamii* tussock grassland.

Hpg3 *Xerochloa imberbis* tussock grassland.

Px1: *Acacia xiphophylla* open shrubland over scattered *Triodia wiseana* hummock grasses.

Px2: *Acacia xiphophylla* open shrubland over *Eragrostis xerophila* (open) tussock grassland.

Hd1: *Acacia inaequilatera*, *A. xiphophylla* (tall) open shrubland over *Triodia wiseana* hummock grassland with scattered *Chrysopogon fallax* tussocks.

Hgs1: *Grevillea pyramidalis* scattered low trees over *Acacia bivenosa*, *A. xiphophylla* open shrubland over *Triodia wiseana* open hummock grassland with *Eriachne benthamii* and *Cenchrus* spp. open tussock grassland.

Hgs2: *Hakea lorea*, *Corymbia hamersleyana* scattered low trees over mixed *Acacia* sp. Low open shrubland over *Triodia epactia* hummock grassland and scattered mixed bunch grasses.

##### Clearing Description

Sino Iron Project. Pastoral Management Pty Ltd proposes to clear up to 75 hectares of native vegetation within a total boundary of approximately 1277 hectares, for the purpose of developing an aerodrome and associated infrastructure. The project is located approximately 66 kilometres south west of Karratha, in the shire of Roebourne.

##### Vegetation Condition

Good: Structure significantly altered by multiple disturbance, retains basic structure/ability to regenerate (Keighery, 1994)  
to  
Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

##### Comment

Vegetation condition derived from a flora and vegetation survey conducted by Astron (2008).

### 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 survey was conducted by Astron Environmental Services (Astron) over part of the application area in November 2008 (Astron, 2008). 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 application area during the flora survey (Astron, 2008).

It should be noted that only part (141 hectares) of the application area was mapped during the flora and vegetation survey conducted by Astron in 2008. However, based on Beard vegetation associations, topography, soil types and aerial imagery it is considered that mapped vegetation types can be extrapolated over the broader application area (GIS Database).

The application area is wholly within the buffer zone of the Roebourne Plains coastal grassland 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). 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). However, 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 (GIS Database).

One Declared weed species, Mesquite (*Prosopis* sp.) was recorded within the application area. 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 within the application area. 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 was conducted by Astron over approximately 9% of the application area in November 2008 (Astron, 2008). 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).

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

##### Methodology

Astron (2008)  
Kendrick and Stanley (2003)  
GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- Pre-European Vegetation  
- Topographic Contour, Statewide  
- Soils, Statewide  
- 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 over part of the application area in November 2008 (Astron, 2008). The field survey identified the following two broad habitats within the application area:

- 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.

Neither of these broad fauna habitats are considered to be restricted to the application area 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). Neither 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)  
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 (2008)  
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 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 Threatened Ecological Communities 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 (2008)  
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 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; and  
175: Short bunch grassland - savanna/grass plain (Pilbara).

Approximately 99% of these Beard vegetation associations remain at both a 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	8.7
Beard vegetation associations - State					
93	3,044,309	3,040,641	~99	Least Concern	2.4
175	526,958	524,640	~99	Least Concern	5.2
Beard vegetation associations - Bioregion					
93	3,044,293	3,040,639	~99	Least Concern	2.4
175	507,860	507,466	~99	Least Concern	5.2

\* Government of Western Australia (2013)

\*\* 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 (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 water bodies or watercourses within or in close proximity to the application area (GIS Database). The nearest registered wetland is the Millstream Pools which are located approximately 108 kilometres south-east of the application area (Astron, 2008; GIS Database).

Two minor non-perennial drainage lines intersect the application area (GIS Database). However, these drainage lines are likely to be dry most of the year and the vegetation type (Hd1) mapped in these drainage lines is not restricted to these systems and occurs outside the application area (Astron, 2008; GIS Database).

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 may be at variance to this Principle**

The application area is located within the Horseflat land system which is characterised by gilgaied clay plains, supporting tussock grasslands and minor grassy snakewood shrublands (GIS Database).

The dominant soil type within the application area is cracking and non-cracking clays (GIS Database). This soil type is susceptible to erosion as a result of overgrazing and earthworks (Astron, 2008; Van Vreeswyk et al., 2004).

Erosion of this soil type may be accelerated as a result of increased water runoff due to the clearing of vegetation (Astron, 2008; Van Vreeswyk et al., 2004). However the proponent has committed to implementing surface water management practises to minimise potential land degradation as a result of clearing vegetation within the application area (Astron, 2008).

The potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

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

**Methodology** Astron (2008)  
GIS Database  
Rangelands 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 9 kilometres north west of the application area and the Millstream Chichester National Park, located approximately 79 kilometres south 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).

There are two minor non-perennial drainage lines that intersect the application area (GIS Database). However, these drainage lines are likely to be dry most of the year, therefore the proposed clearing is not expected to cause deterioration in the quality of surface water of these systems (Astron, 2008; GIS Database).

Groundwater salinity within the application area is between 3,200 and 3,400 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). The proposed clearing is unlikely to have any significant impacts on groundwater quality.

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

**Methodology** Astron (2008)  
GIS Database:  
- Evaporation Isopleths  
- 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).

There are two minor non-perennial drainage lines that intersect the application area (GIS Database). Temporary localised flooding of these drainage systems may occur during heavy rainfall events, however the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events (Astron, 2008; GIS Database).

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

**Methodology** Astron 2008  
BoM (2014)  
Van Vreeswyk et al. (2004)  
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.

### 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.
- 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.

## 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>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:**  
(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 do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.  
(c) 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.