



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 5343/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Atlas Iron Limited

### 1.3. Property details

Property: Mining Lease 45/1179  
Miscellaneous Licence 45/188  
Miscellaneous Licence 45/189  
Miscellaneous Licence 45/284  
Miscellaneous Licence 45/285  
Miscellaneous Licence 45/287

Local Government Area: Shire of East Pilbara  
Colloquial name: Abydos Link Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
361		Mechanical Removal	Construction of a Haul Road and Associated Infrastructure, and Borrow Pits

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 24 January 2013

## 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. Four Beard vegetation associations have been mapped within the application area (GIS Database):

**82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*;

**93:** Hummock grasslands, shrub steppe; kanji over soft spinifex;

**589:** Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex; and

**619:** Medium woodland; river gum (*Eucalyptus camaldulensis*).

A number of flora and vegetation surveys have been conducted across the Abydos Link site since 2001 (Eco Logical, 2012). The majority of the application area was surveyed by Trudgen et al. (2002) and Trudgen (2006; 2007a; 2007b). Mattiske (2007) summarised the previous four surveys. The remaining section of the application area was surveyed by Woodman Environmental in July 2012 and the vegetation type descriptions were aligned with Mattiske (2007) to ensure consistency. Six vegetation formations and 18 vegetation alliances were recorded during the surveys.

#### **Open Forest to Open Woodland: Flowlines**

1. Open forest to open woodland of *Eucalyptus camaldulensis*, *Melaleuca argentea* and *Eucalyptus victrix* with scattered tall shrubs of *Indigofera monophylla* over *Schoenus falcatus*, *Cyperus vaginatus* and *Triodia longiceps* sedgeland/grasslands in river beds.

#### **Open Forest to Open Woodland: Other**

2. *Eucalyptus victrix* scattered trees to open woodland which may include *Melaleuca glomerata* and *Melaleuca linophylla* over open to closed scrub in creek beds and low slopes.

3. *Corymbia aspera* scattered low trees to low open woodland in creek beds.

4. *Acacia tumida* high shrubland to low open forest in creeklines.

5. *Eucalyptus leucophloia* scattered low trees over patches of *Acacia* shrubs over hummock grasslands of *Triodia* species, including *T. brizoides*, *T. wiseana* and *T. epactia* on ridge slopes.

6. *Corymbia hamersleyana* scattered low trees to low open woodland over tall shrubs to open shrubland of *Acacia* spp. and *Grevillea wickhamii* over hummock grasslands on creek banks, flood banks and distributing

fans.

7. *Corymbia zygophylla* and *Corymbia hamersleyana* scattered low trees over hummock grasslands on sandplains.

8. *Terminalia canescens* scattered low trees to low woodland on creek banks.

9. *Atalaya hemiglauca*, *Acacia pruinocarpa*, *Ehretia saligna* var. *saligna*, *Acacia tumida*, *Eucalyptus ferriticola* subsp. *ferriticola* and *Ficus platypoda* scattered low trees over high open shrubland on steep, rocky gorge walls.

#### High Shrublands to Open Scrublands

10. Shrubland to open scrubland of *Acacia* species including *A. tumida*, *A. acradenia* and *A. orthocarpa* over hummock grasslands on upper and steep slopes.

11. Shrubland to closed scrubland of *Acacia* species, including *A. acradenia*, *A. pyrifolia* and *A. tumida* along small creeklines and on the adjacent parts of valley floors and distributing fans.

12. *Acacia inaequilatera* scattered tall shrubs to high open shrubland over *Triodia brizoides* hummock grasslands on ridge slopes and low hills.

13. *Acacia inaequilatera* scattered tall shrubs to high shrubland over *Triodia wiseana* hummock grasslands occurring mainly on gentle lower slopes.

14. *Acacia ancistrocarpa* high open shrubland to open scrub.

15. *Acacia trachycarpa* high open shrubland to high shrublands.

#### Low Shrublands to Low Open Heaths

16. Low shrublands to low open heath on gentle slopes and undulating plains.

#### Hummock Grasslands

17. Hummock grasslands on slopes and ridges.

#### Other Grasslands and Herblands

18. Cracking clay alliance on gentle sloping plains and seasonal damplands.

#### Clearing Description

Atlas Iron Limited has applied to clear up to 361 hectares of native vegetation for the purpose of constructing a haul road and supporting infrastructure, including borrow pits, two temporary construction camps, laydown areas and water storage. The Abydos Link haul road will support road haulage from Atlas Iron Limited's approved Abydos DSO Project. The haul road is approximately 59 kilometres in length and is located approximately 85 kilometres south-east of Port Hedland.

Clearing will be undertaken with a bulldozer. Vegetation and topsoil will be removed where possible and stockpiled for use in rehabilitation.

#### Vegetation Condition

Pristine: No obvious signs of disturbance (Keighery, 1994);

To:

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

#### Comment

The vegetation condition was assessed by botanists from Trudgen and Woodman using a scale based on Trudgen (1988) and has been converted to the corresponding Keighery (1994) condition.

### 3. Assessment of application against clearing principles

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

##### Comments

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

The application area intersects the Chichester and Roebourne subregions of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Chichester subregion is characterised by plains supporting a shrub steppe of *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on the ranges (CALM, 2002). The Roebourne subregion is characterised by quaternary alluvial and older colluvial coastal and sub-coastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera* (CALM, 2002). Uplands are dominated by *Triodia* hummock grasslands and ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands (CALM, 2002).

Vegetation and flora surveys were undertaken over the majority of the application area by Trudgen between April 2001 and June 2007 with the results summarised by Mattiske (2007). The remaining section of the application area was surveyed by botanists from Woodman in June 2012 (Woodman, 2012). Thirteen of the 18 vegetation alliances recorded within the application area locally significant due to the presence of Priority Flora species, species of conservation significance or are restricted to isolated areas within the wider survey (Mattiske, 2007; Eco Logical, 2012). However, it is highly likely that the vegetation alliances would be relatively common and widespread outside the site, as the landforms they occur on are common and widespread, and not regionally significant (Mattiske, 2007; Woodman, 2012).

No Threatened Flora, Threatened Ecological Communities or Priority Ecological Communities were recorded during the flora and vegetation surveys by Trudgen and Woodman botanists, or have previously been recorded within the application area (Eco Logical, 2012; GIS Database).

Seven Priority Flora species were recorded within the wider survey area (Mattiske, 2007; Woodman, 2012) with two Priority Flora species recorded within the application area (Eco Logical, 2012). *Euphorbia clementii* (P2) and *Acacia glaucocaesia* (P3) were recorded both at multiple locations during the surveys with the majority of locations outside the application area (Eco Logical, 2012). *Acacia glaucocaesia* was recorded at eleven locations during the surveys outside of the application area (Eco Logical, 2012). *Euphorbia clementii* has also been recorded at 17 locations within the nearby Abydos DSO Project survey area and at a further 83 locations at the Turner River Hub survey area, approximately 35 kilometres west of the Abydos DSO Project (Woodman, 2012). One potentially undescribed taxon, *Eriachne* aff. *festucacea*, was recorded at one location within the application area (Eco Logical, 2012). This taxa was also recorded within and outside of the nearby Abydos DSO Project survey area and the Turner River Hub survey area (Woodman, 2012). Several collections from other locations in the Pilbara are lodged as *Eriachne* aff. *festucacea* in the Western Australian Herbarium and appear to represent the same taxon collected from the survey area, however, this cannot be confirmed with any certainty. Atlas Iron Limited's management measures for conservation significant flora include entering known locations of conservation significant flora, as well as other areas that require protection outside of the disturbance area, will be entered into their GIS database for planning purposes and where possible will be clearly delineated on the ground to avoid disturbance (Eco Logical, 2012).

Numerous introduced flora species were recorded within the application area, with Buffel Grass (*Cenchrus ciliaris*) and Kapok Bush (*Aerva javanica*) particularly impacting some areas (Eco Logical, 2012). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A total of five broad fauna habitats were identified within the application area and all of these are considered widespread and typical of the Chichester bioregion (Outback Ecology, 2012b). Outback Ecology (2012b) conducted a desktop fauna assessment of the application area and a total of 388 species of vertebrate fauna was identified as potentially occurring within the application area. Previous field survey work performed within or near to the application area confirmed the presence of at least 188 of these species. This total comprises 25 species of native mammal, five species of introduced mammal, 93 species of bird, 55 species of reptile, five species of amphibian and five species of fish (Outback Ecology, 2012b).

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

**Methodology** CALM (2002)  
Eco Logical (2012)  
Mattiske (2007)  
Outback Ecology (2012b)  
Woodman (2012)  
GIS Database:  
- IBRA WA (Regions - Subregions)  
- 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**

Outback Ecology conducted a desktop terrestrial fauna impact assessment of the application area comprising of database searches and a literature review (Outback Ecology, 2012b). A total of five broad fauna habitats were identified within the study area:

- Spinifex stony plain (approximately 45.9% of the study area);
- Spinifex sandplain (approximately 37.9% of the study area);
- Stony rise (approximately 8.4% of the study area);
- Major drainage line (approximately 7.3% of the study area); and
- Ironstone ridge (approximately 0.3% of the study area).

The spinifex sandplain, major drainage line and, to a lesser extent, spinifex stony plain are habitat types of particular value to vertebrate and invertebrate fauna with the study area (Outback Ecology, 2012b). However, all of the habitats are considered widespread and typical of the Chichester bioregion (Outback Ecology, 2012b).

A total of 64 species of conservation significant vertebrate fauna listed under the *Wildlife Conservation Act 1950*, Priority species as listed by the Department of Environment and Conservation (DEC) and/or listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC), were identified as potentially occurring at the site or in the vicinity. Of these, 43 species are considered unlikely to occur within the site (Outback Ecology, 2012b). Local and regional impacts of the proposed clearing to EPBC listed Threatened

fauna are considered to be low for the Pilbara Leaf-nosed Bat and Brush-tailed Mulgara, minimal for the Northern Quoll, and negligible for the Greater Bilby and Pilbara Olive Python (Outback Ecology, 2012b). Local and regional impacts of the proposed clearing to EPBC listed Migratory fauna are considered to be negligible, in each instance, for the Fork-tailed Swift, Oriental Plover, Rainbow Bee-eater and White-bellied Sea Eagle (Outback Ecology, 2012b). Other vertebrate fauna of conservation significance are not likely to be bound tightly to particular habitat patches within the site (Outback Ecology, 2012b)

The abandoned mine workings of Lalla Rookh, widely recognised as a highly important roost location for the Pilbara Leaf-nosed Bat and the Ghost Bat, are approximately 500 metres from the application area (Outback Ecology, 2012b). The small quantities of major drainage line habitat is likely to support foraging individuals for the Ghost Bat and Pilbara Leaf-nosed Bat and are considered important habitat (Outback Ecology, 2012b).

The habitats present within the application area are well represented within the surrounding region and so a reduction in size of habitats is not considered a significant consequence; rather, the fragmentation of these habitats represents the primary consequence of habitat removal (Outback Ecology, 2012b). The long, linear fragmentation of the proposed clearing may impact on habitat for native fauna species.

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

**Methodology** Outback Ecology (2012b)

**(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 known records of Threatened Flora within the application area (GIS Database). The nearest record of Threatened Flora is located approximately 140 kilometres south-east of the application area (GIS Database).

Flora and vegetation surveys were conducted over the application area by Trudgen and botanists from Woodman between April 2001 and June 2012 and no Threatened Flora were recorded (Eco Logical, 2012).

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

**Methodology** Eco Logical (2012)  
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**

A search of available databases revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC is located approximately 170 kilometres south-west of the application area (GIS Database).

No TECs were identified during the flora and vegetation surveys conducted by Trudgen and Woodman botanists (Eco Logical, 2012).

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

**Methodology** Eco Logical (2012)  
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 clearing application area falls within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 99.6% of the pre-European vegetation remains (see table) (Government of Western Australia, 2011; GIS Database). This gives it a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been mapped as Beard vegetation associations:

82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*;

93: Hummock grasslands, shrub steppe; kanji over soft spinifex;

589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft

spinifex; and

619: Medium woodland; river gum (*Eucalyptus camaldulensis*) (Government of Western Australia, 2011; GIS Database).

Over 99% of all of these vegetation associations remain at a state and at a bioregional level (see table) (Government of Western Australia, 2011). These vegetation associations would be given a conservation status of 'Least Concern' at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of vegetation in an area that has been extensively cleared.

	Pre-European Area (ha)*	Current Extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,427	17,729,352	~99.6	Least Concern	6.3
<b>Beard Veg Assoc. – State</b>					
82	2,565,901	2,553,217	~99.5	Least Concern	10.2
93	3,044,310	3,040,641	~99.9	Least Concern	0.4
589	809,603	804,022	~99.3	Least Concern	1.6
619	119,374	118,209	~99.0	Least Concern	0.2
<b>Beard Veg Assoc. – Bioregion</b>					
82	2,563,583	2,550,899	~99.5	Least Concern	10.2
93	3,042,114	3,038,472	~99.9	Least Concern	0.4
589	730,567	725,993	~99.4	Least Concern	1.8
619	118,920	118,087	~99.3	Least Concern	0.2

\* Government of Western Australia (2011)

\*\* 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 (2011)  
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 no permanent watercourses or wetlands within the application area, however, the application area does cross one major non-perennial creekline and multiple minor non-perennial watercourses (GIS Database). The proposed haul road will pass approximately 250 metres downstream of Strelley Pool, the nearest permanent pool to the site. Riparian vegetation in this area and at the proposed crossing at Six Mile Creek is already considerably compromised and displays evidence of cattle trampling and overgrazing (Eco Logical, 2012). Creeks and ephemeral watercourses, as occur throughout the application area, are common and widespread in the Pilbara and are not restricted to the site (Eco Logical, 2012).

Vegetation Alliances 2, 8 and 11 are considered to represent vegetation associated with watercourses or wetlands (Eco Logical, 2012). Given the linear nature of the proposal, clearance of native vegetation during construction is unavoidable. However, the area of riparian vegetation proposed to be cleared has been minimised, totalling 21.6 hectares, and this is not considered likely to have a significant impact on riparian vegetation within the site (Eco Logical, 2012).

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

**Methodology** Eco Logical (2012)  
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 intersects the Boolgeeda, Capricorn, Macroy, Platform, River, Rocklea, Satirist and Uaroo Land Systems (GIS Database).

The Boolgeeda Land System is characterised by stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). The vegetation is generally not prone to degradation and the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Capricorn Land System is characterised by hills and ridges of sandstone and dolomite supporting shrubby hard and soft spinifex grasslands (Van Vreeswyk et al., 2004). The stony surfaces of the landforms in this land system provide resistance to erosion (Van Vreeswyk et al., 2004).

The Macroy Land System is characterised by stony plains and occasional tor fields based on granite supporting hard and soft spinifex grasslands (Van Vreeswyk et al., 2004). The system has a low to very low erosion risk (Van Vreeswyk et al., 2004).

The Platform Land System is characterised by dissected slopes and raised plains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004). The land forms in this land system generally have surface mantles of very abundant pebbles and cobbles and the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The River Land System is characterised by active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands (Van Vreeswyk et al., 2004). Susceptibility to erosion is high or very high if vegetation cover is removed (Van Vreeswyk et al., 2004).

The Rocklea Land System is characterised by basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands (Van Vreeswyk et al., 2004). Van Vreeswyk et al. (2004) report that this system has a very low erosion risk.

The Satirist Land System is characterised by stony plains and low rises supporting hard spinifex grasslands, and gilgai plains supporting tussock grasslands (Van Vreeswyk et al., 2004). The system is generally not susceptible to erosion (Van Vreeswyk et al., 2004).

The Uaroo Land System is characterised by broad sandy plains supporting shrubby hard and soft spinifex grasslands (Van Vreeswyk et al., 2004). There is occasionally some erosion but generally the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The surface soils of the site were identified by Outback Ecology (2012a) as being typically dispersive with the potential for to become problematic particularly following severe disturbance or heavy rainfall. However, the relatively high amount of coarse material present within the majority of soils sampled is likely to mitigate against erosion of the soil surface (Outback Ecology, 2012a). Overall, the results from the baseline soil and landform assessment conducted by Outback Ecology indicate that the majority of the soils within the site are relatively stable, non-saline, have low concentrations of total metals and are unlikely to cause major issues during the construction and operation of the haul road corridor (Eco Logical, 2012; Outback Ecology, 2012a). Although the majority of soils and land systems are stable, there is a risk of erosion if the susceptible areas are left cleared and bare for long periods of time. Potential impacts from erosion 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** Eco Logical (2012)  
Outback Ecology (2012a)  
Van Vreeswyk et al. (2004)  
GIS Database:  
- Rangeland Land System Mapping

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

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

The proposed clearing is not located within a conservation reserve (GIS Database). The nearest conservation area is the ex-Meentheena pastoral lease, a former leasehold proposed for conservation, which is located approximately 84 kilometres east of the application area (GIS Database).

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**

There are no permanent watercourses or wetlands within the application area, however, the application area does cross one major non-perennial creekline and multiple minor non-perennial watercourses (GIS Database). Creeks and ephemeral watercourses, as occur throughout the application area, are common and widespread in the Pilbara and are not restricted to the site (Eco Logical, 2012).

The proposed haul road will pass approximately 250 metres downstream of Strelley Pool, the nearest permanent pool to the site. Riparian vegetation in this area and at the proposed crossing at Six Mile Creek is already considerably compromised and displays evidence of cattle trampling and overgrazing (Eco Logical, 2012). There is evidence Strelley Pool has suffered siltation over a period of time, a process which would be amplified by the grazing of livestock in the area. It is not likely that the clearing of any remaining native vegetation just downstream of Strelley Pool will have any significant impact on the pool in terms of water quantity or quality (Eco Logical, 2012).

The clearing of native vegetation along the catchment crossings may have a temporary local impact of increased turbidity of surface water, if present, until the construction of the proposed haul road is completed. This effect, which may be seen in the local catchment, will soon dissipate as the flows move downstream and merge with flows entering the Strelley or Shaw River systems from the larger catchment area (Eco Logical, 2012). The proposed clearance of native vegetation is not expected to cause deterioration of surface water or groundwater quality on or off-site (Eco Logical, 2012).

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the De Grey River Water Reserve which is located approximately 14 kilometres north of the application area (GIS Database).

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

**Methodology** Eco Logical (2012)  
GIS Database:  
- 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 application area is located within the Shaw and Strelley River catchment areas (GIS Database). Given the size of the area to be cleared (361 hectares) in relation to the size of the catchment areas (790,204 and 280,569 hectares, respectively) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

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

**Methodology** GIS Database:  
- Hydrographic Catchments - Catchments

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

**Comments**

There are three Native Title Claims (WC95/61, WC99/8 and WC00/5) over the area under application (GIS Database). These claims have been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered 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 and Conservation 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.

The clearing permit application was advertised on 12 November 2012 by the Department of Mines and Petroleum inviting submissions from the public. One submission was received raising concerns about the cumulative impacts of clearing. This is addressed in Principle (e).

- Methodology** GIS Database:
- Aboriginal Sites of Significance
  - Native Title Claims - Registered with the NNTT

#### 4. References

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- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
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- Outback Ecology (2012b) Abydos East Link Road Terrestrial Fauna Impact Assessment Report. Unpublished Report Prepared by Outback Ecology Services for Atlas Iron Limited, August 2012.
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- Trudgen, M. (2007b) Supplementary Botanical Surveys, Rare Flora Searches, Assessment of Vegetation Condition and Identification of Groundwater Dependent Ecosystems for the Sulphur Springs Project. Unpublished Report Prepared for CBH Resources, July 2007.
- Trudgen, M.E., Morgan, B.M. and Griffin, E.A. (2002) A Flora and Vegetation Survey of the Proposed Mine Areas and Access Road for the Panorama Project. Unpublished Report Prepared for Aston Environmental, January 2002, Volumes 1 and 2.
- Van Vreeswyk A.M.E., Payne A.L., Leighton K.A. and Hennig P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Perth, Western Australia.
- Woodman (2012) Abydos East Project Camp and Haul Road Corridor Flora and Vegetation Studies. Unpublished Report Prepared by Woodman Environmental for Atlas Iron Limited, July 2012.

#### 5. Glossary

##### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>CALM</b>	Department of Conservation and Land Management (now DEC), Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DEC), Western Australia
<b>DIA</b>	Department of Indigenous Affairs
<b>DLI</b>	Department of Land Information, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia
<b>DoE</b>	Department of Environment (now DEC), Western Australia
<b>DoIR</b>	Department of Industry and Resources (now DMP), Western Australia
<b>DOLA</b>	Department of Land Administration, Western Australia
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environmental Protection Act 1986, Western Australia
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (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>RIWI Act</b>	Rights in Water and Irrigation Act 1914, Western Australia
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia
<b>TEC</b>	Threatened Ecological Community

### Definitions:

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

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

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

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

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

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

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

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