



**YILGARN OPERATIONS
FAUNA MANAGEMENT PLAN
242-EN-PLN-0003**

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1. PURPOSE AND SCOPE

Yilgarn Iron Ore Pty Ltd's (YIPL) Yilgarn Operations includes mineral exploration and mining operations at the Koolyanobbing Range, Mt Jackson Range, Windarling Range, Johnston Range (Deception Deposit), ore processing at Koolyanobbing and road and rail transport between these operations and the Port of Esperance. The location of YIPL's Yilgarn Operations is shown in Figure 1.

The environmental aspects of YIPL's Yilgarn Operations are managed in accordance with YIPL's Environmental Policy and Environmental Management System (EMS). While not accredited, the EMS has been developed and is implemented in accordance with Australian and New Zealand Standard ISO Standards. The Fauna Management Plan forms part of YIPL's EMS. This management plan has been prepared to address:

- Environmental risks associated with fauna for all of YIPL's Yilgarn Operations, as depicted in Figure 1.
- Statutory obligations relating to fauna under Ministerial Statement 982 (see Section 2, below) applying to YIPL's operations at Windarling Range, Mt Jackson Range, Deception Deposit and the hauls road and associated infrastructure linking these operations to Koolyanobbing.

The purpose of this plan is to outline the management actions YIPL will implement to address the environmental risks and regulatory obligations associated with fauna. While the primary focus of this plan is on the protection of fauna of conservation significance, the scope of the plan includes other native fauna. The plan applies to all of YIPL's Yilgarn Operations, as shown in Figure 1.

2. LEGISLATION AND GUIDELINES

The legislation and associated guidelines and standards relevant to fauna and this management plan include:

- a) *Environmental Protection Act 1986* (WA) (EP Act). Specific environmental approvals applying to YIPL's Yilgarn Operations under the EP Act are contained in Ministerial Statement 982 (WA Minister for the Environment 2014).
- b) Environmental Assessment Guideline for Preparation of management plans under Part IV of the EP Act (EAG 17, Environmental Protection Authority, August 2015).
- c) *Biodiversity Conservation Act 2016* (WA).
- d) *Environmental Protection and Biodiversity Conservation Act 1999* (C'wth) (EPBC Act).
- e) Conservation Codes for Western Australian Flora and Fauna (DBCA 2019).

3. CONSERVATION SIGNIFICANT FAUNA

Fauna species may be afforded special protection under the EPBC Act, with similar protection also available under the BC Act.

For the purpose of this management plan, "conservation significant fauna" is taken to mean those species classified as "Threatened" under the EPBC Act, or as "Threatened" or "Priority Fauna" by the DBAC. The classifications used are as follows:

Threatened Species

Threatened Species of fauna may be declared by the Commonwealth Minister for Environment for protection under the EPBC Act as a matter of national environmental significance for it being extinct, facing a risk of extinction, or in need of a conservation program to prevent the species from a risk of extinction.

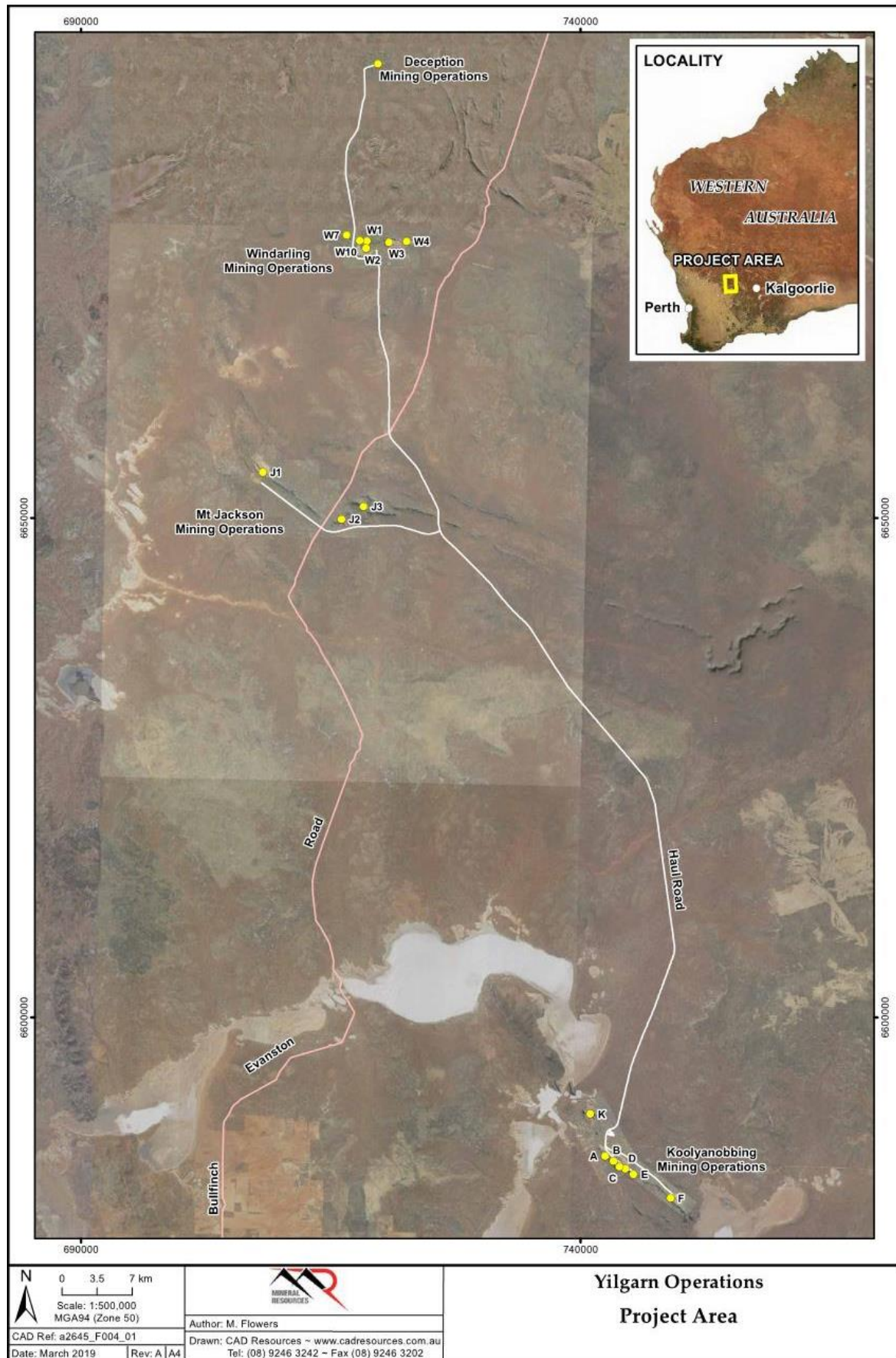


Figure 1 – Location of YIPL's Yilgarn Operations

The BC Act provides for species, subspecies or populations of native animals (fauna) to be listed as Specially Protected, Threatened (Critically Endangered, Endangered or Vulnerable) or Extinct in Western Australia. Threatened fauna is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018 for Threatened Fauna.

Specially Protected Species

Under section 13(1) of the BC Act, species may be listed as Specially Protected if they meet one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Threatened species cannot also be listed as Specially Protected Species. They are published under schedules 5 to 7 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.

Priority Fauna

Priority Fauna is a classification system developed by the DBCA for fauna taxa which are known from one, a few or several occurrences, which may or may not be under threat, or may otherwise be rare. Four priority categories are used, with Priority 1 (P1) being of the highest conservation significance. Priority Fauna are identified and determined by DBCA.

The conservation significant fauna occurring in the vicinity of YIPL's Yilgarn Operations are listed in Schedule 2 of Ministerial Statement 982 as including, but not limited to: *Leipoa ocellata* (Malleefowl). A full list of conservation significant fauna occurring in the vicinity of YIPL's Yilgarn Operations is provided in Attachment 1.

4. ASPECTS REQUIRING MANAGEMENT

The relevant aspects identified in the YIPL's EMS and in Ministerial Statement 982 as requiring management to address potential effects on fauna are:

- Unauthorised disturbance;
- Saline water;
- Altered surface water flow;
- Fire;
- Dust;
- Weeds; and
- Feral fauna.

The YIPL EMS has identified the following additional risks requiring management controls:

- Open drill holes (exploration)
- Vehicle strike
- Drowning in sumps or dams

Management controls to address each of the above aspects are listed in Section 6.

5. MANAGEMENT OBJECTIVE

The management objective is:

- a) To ensure that the implementation of the proposal (as per Ministerial Statement 982) is carried out in a manner that minimises the direct and indirect impacts to conservation significant fauna; and
- b) To minimise environmental effects on native fauna generally from YIPL's Yilgarn Operations

6. MANAGEMENT CONTROLS AND ACTIONS

YIPL has implemented a range of management controls to minimise the potential for project activities to adversely affect fauna. The following table summarises the controls YIPL will maintain to manage the aspects nominated in Section 4.

Table 6.1 – Aspects, Associated Risks and Risk Ranking, and Management Controls

Aspect	Risk/Potential Impact*	Risk-based Priority*	Management Controls
Fire	Decline or loss of fauna habitat due to fire.	1	• Inductions and awareness training • Fire control plan and supporting procedures • Fire breaks • Fire fighting vehicles and equipment
Open drill holes (exploration)	Loss of small native fauna as a result of falling into open drill holes.	2	• Exploration rehabilitation procedure • Exploration checklist • Drill program audits
Vehicle strike	Death or injury to native fauna due to vehicle strike.	3	• Inductions and awareness training • Speed limits • Signage in areas of higher concentration of Malleefowl • Reporting of Malleefowl deaths to DBCA and C'th Department of the Environment and Energy
Feral fauna	Decline or loss of fauna habitat due to predation by feral fauna.	4	• Fauna sightings and interaction register • Annual feral fauna control program. Feral fauna control measures to include baiting, trapping and/or culling for the feral cat (<i>Felis catus</i>), feral dog (<i>Canis lupis</i>), the European red fox (<i>Vulpes vulpes</i>) and the European rabbit (<i>Oryctolagus cuniculus</i>) • Pets prohibited from the mine site
Drowning in sumps or dams	Death of native fauna due to drowning in mine sumps or dams.	5	• Fencing and egress matting of lined sumps • Daily inspections

Aspect	Risk/Potential Impact*	Risk-based Priority*	Management Controls
Unauthorised disturbance	Decline or loss of fauna habitat due to physical disturbance.	6	- Site disturbance permit process - Inductions and awareness training - Incident reporting and corrective action process - Clearing procedures - Approvals implementation process - Unauthorised off-road vehicle use prohibited
Weeds	Decline or loss of fauna habitat due to weed invasion.	7	- Weed register - Weed control program
Saline water	Decline or loss of fauna habitat due to uncontrolled release of saline water or spray drift.	8	- Inductions and awareness training - Incident reporting and corrective action process - Containment infrastructure (V drains, bunding, shut off valves) - Daily saline water infrastructure inspections
Altered surface water flow	Decline or loss of fauna habitat due to altered surface water flow.	9	- Mine planning process - Approvals implementation process
Dust	Decline or loss of fauna habitat due to smothering by dust.	10	Dust control procedures

*The risk/potential impact column refers to a risk or potential impact from YIPL's mining and exploration activities. The risk-based priority column shows the relative risk posed by each issue in the absence of management controls. The risk ranking is based on the results of the environmental risk assessment that forms part of the YIPL's EMS.

7. MONITORING

Routine (annual) monitoring of fauna is undertaken for *Leipoa ocellata* (Malleefowl). Malleefowl occur in the vicinity of parts of YIPL mining areas, with the largest population occurring in the Mt Jackson Range area. Relatively few mounds have been located at the Windarling and Koolyanobbing sites. Annual monitoring of Malleefowl is focused on the Mt Jackson Range.

Annual Malleefowl surveys in the Mt Jackson area were conducted from 2004-2011 and have covered the entire Mt Jackson Range within YIPL's tenements. These surveys included an autumn search for breeding mounds within potential habitat and a late spring or summer survey for breeding activity across all previously recorded mounds. The preferred Malleefowl habitat at Mt Jackson has been identified as the slopes of hills where conditions for mound construction are more suitable than on the surrounding plains or on the tops of hills. A total of 300 Malleefowl mounds have been located in over 4000ha of surveyed area. Based on the information from breeding activity in recent years, the local population is estimated to be comprised of up to 30 breeding pairs.

The Mt Jackson Malleefowl monitoring program provides an indirect measure of population size by identifying the number of active breeding mounds within a fixed area. Annual monitoring of Malleefowl mounds is undertaken during the breeding season from October to March. Monitoring of mounds involves recording the details of Malleefowl activity as outlined in the National Manual for the Malleefowl Monitoring System (National Heritage Trust undated). Due to the large number of mounds present at Mt Jackson, and based on recommendations from Dr Joe Benshemesh (Manager of the National Malleefowl Database), the area has been divided into “core” and “non-core” mounds. The core mounds category includes those mounds recorded as active during one or more monitoring seasons (44 mounds in total). The core mounds category also includes five inactive mounds in each of five areas of increasing distance from the J1 Pit (Attachment 2), giving a total of 69 core mounds. J1 pit is the only active pit in the Jackson Range area. Core mounds are monitored annually. Annual monitoring of core mounds commenced in 2013.

Non-core mounds are all other mounds recorded in the Mt Jackson area. The non-core mounds will be monitored when time and resources permit – once every three years as a target frequency. Any newly located mounds found to be active will be considered for inclusion as core mounds.

An animal sightings register is maintained by YIPL and provides a general indication of Malleefowl abundance over the wider area of YIPL’s Yilgarn Operations. Hence a check is available of whether the Malleefowl activity levels recorded at Mt Jackson are generally consistent with the frequency of sightings in the region.

8. TRIGGER CRITERIA

The Mt Jackson Malleefowl monitoring program utilises an indirect measure of population size (i.e. the number of active breeding mounds). Differentiating between natural variation in the population size and any effects of human induced change is problematic due to the small sample size and typically high variability in annual breeding activity. Hence trigger criteria will utilise a combination of factors, including between-year change and longer term trends, spatial variation (near-mine versus sites located further from mining) and the results obtained from the sightings register.

For Malleefowl, reporting and contingency actions will be triggered if any of the following occur:

- Annual monitoring indicates a decline in Malleefowl breeding activity (as measured by the number of active core mounds) of >35% between consecutive years, and a decline of similar magnitude is not reflected in the animal sightings register.
- Annual monitoring indicates a consistent pattern of decline in Malleefowl breeding activity over a timeframe of three years or more and a similar decline is not reflected in the sightings register.
- Annual monitoring indicates a spatial trend of declining breeding activity that may be related to proximity to mining operations.

The trigger criteria for Malleefowl have been developed with reference to the (limited) information available from the monitoring of Malleefowl at Mt Jackson from 2013 to 2015. Annual changes of 15% (increase) and 32% (decrease) were recorded for 2013-2014 and 2014-2015, respectively. The nominated trigger criteria of 35% decline in breeding activity between consecutive years is intended to represent a value that is likely to be outside the typical annual variability, although the small sample size and likely high variability of inter-annual breeding activity mean that this value is difficult to determine in the absence of a longer time series. This figure will be reviewed after a period of five years, at which point it can be replaced by a figure based on a defined measure of variability e.g. standard deviation from the mean.

9. REPORTING AND CONTINGENCY ACTIONS

Where any of the above trigger criteria are met, YIPL will report the findings to the Executive Director - EPA Services of the Department of Water and Environment Regulation (DWER) within 21 days of the decline being identified and provide information which allows determination of the cause of the decline. If the decline is determined by the DWER to be a result of activities undertaken in implementing the proposal (WA Minister for the Environment 2014), YIPL will submit actions to be undertaken to remediate the decline to the DWER within 21 days of the determination made by the DWER. YIPL will implement the actions to remediate the decline upon approval of the DWER, on advice of BDCA Parks and Wildlife Service, and continue until such time as the DWER, on advice of BDCA, determines that the remedial actions may cease.

10. PERFORMANCE INDICATORS

The performance indicators applying to this management plan shall be:

No detectable effect on the abundance of Malleefowl in the vicinity of YIPL's operations as a result of YIPL's activities, as measured by annual mound monitoring, i.e. no spatial pattern of decreased breeding activity closer to mine operations, and breeding activity is broadly consistent with prevailing environmental conditions (rainfall, fire etc.) and the number of Malleefowl sightings on the fauna sightings and interaction register.

11. RECORDS

Records and data relating to the activities outlined in this document shall be maintained as part of this management plan.

12. REVIEW

YIPL will review and update the management actions contained in this management plan in accordance with the Environmental Management System Manual. Any significant changes to this management plan will be referred to the relevant regulatory authorities for approval prior to implementation of such changes.

13. SUPPORTING DOCUMENTS

- 242-EN-PLN-0014 Fire Management Plan
- 242-EN-PRO-0001 Groundwater Management
- 242-EN-PRO-0002 Land Clearing
- 242-EN-PRO-0003 Saline Water Infrastructure
- 242-EN-PRO-0007 Dust Management
- 242-EN-PRO-0008 Fauna Management
- 242-EN-PRO-0010 Site Disturbance Permit
- 242-EN-PRO-0011 Weed Management
- 242-EN-WIN-0005 Botanical Surveys – Exploration
- 242-EN-WIN-0016 Malleefowl Monitoring
- 242-EN-WIN-0024 Environmental Approvals and Implementation

- 242-EN-FRM-0003 Fauna Sightings and Interaction Register
- Safety Incident Procedures

The above documents are internal YIPL EMS documents and do not form part of this management plan.

14. REFERENCES

DBCA (2019). Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, January 2019.

Western Australian Minister for Environment (2014). Yilgarn Operations - Windarling Range, Mt Jackson Range and Deception Deposit – Shire of Yilgarn and Shire of Menzies. Statement 982. Approval granted to Cliffs Asia Pacific Iron Ore Pty Ltd under s46 of the Environmental Protection Act 1986 (WA). September 2014.

Attachment 1 – Conservation Significant Fauna Occurring in the Vicinity of YIPL's Yilgarn Operations

Table A.1 – Conservation Significant Fauna Occurring in the Vicinity of YIPL’s Yilgarn Operations

Species	Status*		Koolyanobbing Range	Mt Jackson Range	Windarling Range	Deception Deposit	Haul Roads
	BC Act	EPBC Act					
Threatened or Specially Protected Fauna							
Leipoa ocellata (Malleefowl)	VU	VU	✓	✓	✓	✓	✓
Falco peregrines (Peregrine Falcon)	OS	-	✓	✓	✓		
Merops ornatus (Rainbow Bee-eater)	-	Ma	✓	✓	✓	✓	✓
Priority Fauna							
Aganippe castellum (Tree-stem Trapdoor Spider)	P4	-	✓	✓	✓		

* VU – Vulnerable species, OS - Other Specially Protected species (BC Act), Ma – Marine species (EPBC Act), P4 - Rare, Near Threatened and Other Species in Need of Monitoring.

Attachment 2 – Mt Jackson Annual Malleefowl Mound Monitoring Locations

