Roy Hill Conservation Significant Fauna Offset Strategy

Environment

Declaration of accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cwlth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed

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Date - TBD

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1 Executive Summary

The Roy Hill Revised Proposal (EPBC 2xxx/xxxx) was approved under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth), subject to a series of conditions of approval.

Under Condition xx (EPBC 2xxxx/xxxx), Roy Hill is required to submit a Conservation Significant Fauna Offset Strategy (CSFOS) to the Department of Agriculture, Water and Environment (DAWE) for approval by the Minister.

An environmental offset is a measure that is intended to compensate for the residual adverse impacts of an action on the environment, such as a development (DSEWPaC, 2012). The aim of this CSFOS is to align with the National Recovery Plan for the Greater Bilby (Pavey, 2006), and the draft Recovery Plan for the Greater Bilby (Commonwealth of Australia, 2019) and therefore contribute to the better protection and long-term conservation of the Greater Bilby (herein 'bilby') through conducting appropriate environmental management measures for the species, which include recovery and research actions, and capacity building for local groups to continue with bilby recovery practices.

Roy Hill will fund bilby Offset Projects, to be delivered on behalf of Roy Hill, by third parties with specialist skills.

The CSFOS describes the framework for conceiving, designing and submitting Offset Project proposals for approval. The framework identifies the key actions, stakeholders, timetable, budget and outcomes that collectively address the objectives of the CSFOS which are in turn aligned with the National Recovery Plan and the draft Recovery Plan for the Greater Bilby. The CSFOS targets bilby conservation to on-ground management including, management of introduced predators, fire management to enhance habitat condition, and assessing population condition (monitoring) of (meta-) populations. In addition, the CSFOS recognises the importance of community and stakeholders to deliver enduring on-ground bilby management outcomes, and therefore includes objectives to partner with relevant stakeholders and landowners to deliver the management outcomes, to build local capacity, and to empower local groups to continue with bilby conservation and management. This CFSOS also recognises the importance of consistent monitoring data and methods to be employed to conduct bilby surveys and monitor success of on-ground management actions, and the need for a national database to support across country understanding of threats to bilby and to measure the success or otherwise of bilby populations. To this end, the CSFOS will also fund projects that address the recovery of the bilby through supporting a national database or national map and associated analyses, stakeholder workshops and community events.

Additionally, this CSFOS outlines a process for making financial contributions to a conservation offset fund or trust, and the process for reporting any further bilby habitat clearance, delivering supplementary financial contributions, and reporting on CSFOS implementation.

2 Introduction

2.1 Revised Proposal Background

The Roy Hill Mine Revised Proposal (the Revised Proposal) involves the increase in clearing by 5,995 ha, with some pits utilised for in-pit tailings, and increase in the borefield area and use of these borefield for Life of Mine (LOM), permanent surface water diversions to be installed, an increase in dewatering volumes with surplus water to be used for dust suppression and disposed of to re-injection bores within the Revised Development Envelope as outlined in Figure 1.

The Revised Proposal was referred to the Commonwealth Department of Environment and Energy (DoEE) in November 2018 under the Environment Protection and Biodiversity Conservation Act 1999 (Cwlth) (EPBC Act). The Revised Proposal was determined a controlled action. The proposed action is being assessed as an accredited assessment. The Revised Proposal is being assessed by both the Department of Agriculture, Water and the Environment (DAWE) and also is being assessed under the Environmental Protection Act 1986 by the Western Australian Department of Water and Environmental Regulation (DWER) with a decision anticipated in 2021.

Potential impacts to the Greater Bilby (*Macrotis lagotis*; hereafter bilby) from the Revised Proposal include direct loss of habitat, habitat degradation from groundwater mounding, salinity or unbalanced growth, inappropriate fire regimes, vehicle strike, predation by feral animals. Whilst management measures will be implemented to reduce the potential Revised Proposal impacts to this species as per the Mine Vertebrate Fauna Management Plan (OP-PLN-00324), the residual impacts to the bilby for clearing of habitat at the Mine of Mulga Woodlands and Mulga drainage lines have been proposed to be offset. Of Mulga Woodland located within the current Mine tenement area 2,428.3ha has been assigned a high importance habitat rating to Bilby (Biologic 2019). Of this, 1419.12ha has been categorised as being in good to excellent vegetation condition. Roy Hill proposes to offset clearing of this habitat in good to excellent condition (Appendix 1 for map).

Roy Hill has prepared this CSFOS to outline the approach to be undertaken in delivery of the offset.

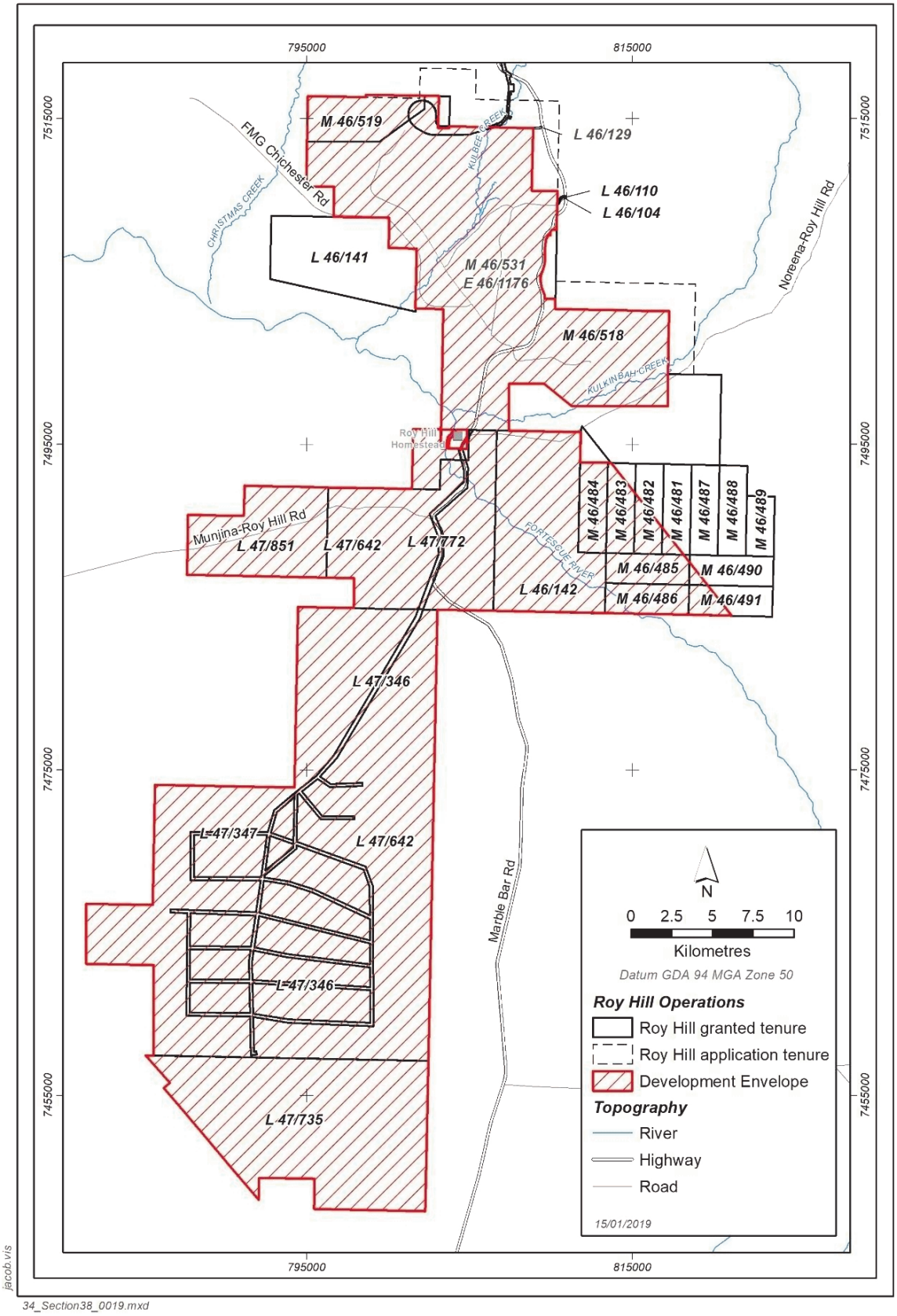

Figure 1 - Revised Development Envelope

2.2 Commonwealth Offset Conditions

Condition xx of the approval for EPBC xxx/xxxx requires the submission of a CSFOS, and states:

(*text to be added post receipt of approval…. xxxxx*)

2.3 Purpose of the Document

The CSFOS establishes the themes and timeframes for developing and implementing Offset Projects for *recovery and research activities that are likely to realise a conservation benefit for Greater Bilby*, so as to comply with Condition xx of EPBC xxxx/xxxx.

The objective of this CSFOS is:

- to establish a framework that will support Offset Project(s) to contribute to the protection and long-term conservation of the bilby through the undertaking of appropriate and beneficial recovery and research activities for the species.

3 Timeframe for Implementing the CSFOS

Roy Hill will implement the CSFOS for the life of the Revised Proposal (estimated approximately 20 years) from the date of Commonwealth approval of the CSFOS, unless otherwise agreed with the Commonwealth.

4 Matters of National Environmental Significance

4.1 Greater Bilby

The CSFOS is required to offset residual impacts on the bilby as a Matter of National Environmental Significance (MNES). A concise overview of the distribution and ecology of the bilby is provided in the National Recovery Plan (Pavey, 2006) (Recovery Plan); the draft Recovery Plan (Commonwealth of Australia, 2019) (the draft Recovery Plan), and the Conservation Advice as provided by the Threatened Species Scientific Committee (DAWE, 2016), and is not reproduced here.

4.2 Conservation Status

The bilby is listed as Vulnerable under Schedule 1 of the Biodiversity Conservation Act 2016 (WA), under the EPBC Act and on the International Union for Conservation of Nature (IUCN) Red List.

4.3 Cultural Significance

The bilby has important cultural significance for indigenous groups across Australia (Pavey, 2006; DAWE, 2017). Various names are used for this species throughout Australia and there is a strong understanding of its ecology, and incorporation of this animal into cultural stories, beliefs and law. Some areas are managed for bilby using traditional knowledge, especially with respect to conducting small-scale fires in a mosaic across the landscape which promote the growth of plant foods for the bilby. Bilbies are culturally significant to language groups across the Pilbara. The Nyiyaparli people refer to bilby as *putarrpa* (Wanka Maya, 2012), however there are other words for bilbies by other language groups elsewhere in the Pilbara.

5 Greater Bilby Habitat Proposed to be Cleared

The Roy Hill Revised Proposal and areas within the Revised Development Envelope was subject to extensive environmental surveys from 2008 to 2020 involving on-ground surveys. Potential fauna habitat for bilby was identified through desktop analysis, followed by on-ground surveys.

One bilby was detected on the Mine site and occupied a series of burrows located within mulga groves sited approximately 1km from Mine offices and 100m from a Mine access road. This animal persisted on site from July 2018 to September 2019. Department of Biodiversity, Conservation and Attractions (DBCA) Greater Bilby Research Scientist (Dr Martin Dziminski) visited the Mine site and bilby borrows in August 2018. Dr Dziminski undertook extensive survey of the area and collected scats for DNA analysis with additional scats provided by Roy Hill also found across the Mine site. In total, 20 haphazardly collected scats were analysed and all were confirmed to be greater bilby from one distinct individual (Dziminski and Carpenter, 2019).

Based on the finding and persistence of this individual, Biologic (2019) recommended that the mulga groves and mulga woodlands located within the mine tenement to be of high importance to bilby. The area of this high importance habitat that is anticipated to be directly impacted by the Revised Proposal consists of 459.77ha of mulga drainage and 1,968.53ha of mulga woodland. Of this, 248.04ha of mulga drainage and 1,171.08ha of mulga woodland is considered to be in good to excellent condition. Hence the Revised Proposal will clear approximately 1,419.1ha of this high importance bilby habitat at the mine (see Appendix 1 for map). Roy Hill will undertake clearing with the objective of minimising impact to this habitat.

Table 1 outlines the areas identified as high importance bilby habitat that are proposed to be impacted by the Revised Proposal.

Areas that are cleared will be calculated on a biennial basis and provided in the CSFOS annual report. The spatial layers will be maintained in Roy Hill's ARC GIS as shapefiles.

Table 1 - Areas of high importance Greater Bilby habitat within Mine area subject to direct and indirect impact from revised proposal

Area of Greater Bilby habitat – direct impact (ha)	Area of Greater Bilby habitat in good to excellent vegetation condition – direct impact (ha)
2,428.3	1,419.1

6 Financial Commitment

The financial commitment to the offset program over the period of the Revised Proposal will be based on the total area cleared for each IBRA region of this Greater Bilby habitat in good to excellent condition, calculated on the Offset rate for that IBRA region excluding GST. Table 2 shows the indicative hectares to be directly impacted in the relevant IBRA sub regions – Chichester and Fortescue and relevant Offset rate for those IBRA sub-regions. Note that these are indicative areas only, and Roy Hill will aim to minimise clearing where practicable.

Table 2 - Estimated MNES contribution for direct impact on Greater Bilby habitat within the Mine area located within good to excellent vegetation

Proposed offset for Greater Bilby	Area of Greater Bilby habitat in good to excellent vegetation condition – direct impact (ha)	Fortescue IBRA region (Offset rate $3,264/ha for 2018/2019)	Chichester IBA region (Offset rate $1,632/ha for 2018/2019)	TOTAL
Hectares	1,419.1	1409.3	9.8	-
Offset	-	$ 4,599,955.20	$ 15,993.60	$ 4,615,948.80

The estimated financial contribution is based on the anticipated hectares to be directly impacted (i.e. cleared) for each IBRA sub-region. However, the financial contribution will be based on actual clearing, and this can only be calculated after clearing has been conducted.

It is anticipated that the value of expenditure per hectare of bilby habitat cleared will be annually adjusted in accordance with the Perth Consumer Price Index (CPI) fluctuations from 1 July 2021. The Australian Bureau of Statistics (ABS) publish the annual CPI for Australian cities in September of each year and will be referenced when calculating the annual adjustments.

The first adjustment is to be applied on 1 July 2021 (subject to approval date) and hence will be applied to the two rates per IBRA region per ha, as outlined above.

Annual contribution updates will be included in CSFOS annual reports and will outline the additional financial commitment required for any clearing undertaken in the previous year.

The WA DWER require biennial reporting in accordance with the Impact Reconciliation Procedure (OP-PRO-01559) for good to excellent vegetation that will be impacted from the Revised Proposal, as vegetation requiring offsets. Of the 4,640.8 ha mapped of good to excellent vegetation condition proposed to be directly impacted by the Revised Proposal, 1,419.1 ha is the proposed Greater Bilby MNES Commonwealth Offset. Where values overlap and have two different offset rates ($/ha), the offset will be provided at the higher rate of the two rates for impact to that area. Roy Hill expects that the final rates will be specified in the Ministerial Statement for the Revised Proposal.

To enable regular reporting and consistency, it is proposed that biennial reporting of direct and indirect impacts of good to excellent vegetation condition high importance bilby habitat be undertaken. The first report will be provided at the end of the financial year two years after commencement of clearing related to the Revised Proposal.

It is proposed that one report will be submitted to the Commonwealth and State to report on both offset areas impacted, the environmental value, and relevant IBRA sub-region.

Financial milestones of expenditure towards actual Offset Projects have been indicatively predicted (Table 3) for the life of the Revised Proposal. Financial contributions will be calculated as clearing activities are undertaken and hence this is only an indicative contribution schedule.

This indicative financial commitment schedule for funding Offset Projects to be project managed directly by Roy Hill, will only apply if offset funding for MNES is unable to be provided to the Pilbara Environmental Offset Fund.

Offset Projects will be developed and submitted for approval within 12 months of an amount of $500,000 being realised through clearing activities.

These financial milestones have been set in accordance with Table 3 intervals and will be apportioned towards approximately 70% on-ground threat abatement actions (e.g. feral predator control, stock management, planned burns) and approximately 30% towards offset project planning, research, monitoring, and supporting activities (e.g. workshops, education, citizen science projects).

Table 3 - Indicative Implementation schedule and minimum commitment (depending on clearing activities and to be calculated biennially)

Year of program	Financial milestone apportionment	Spend amount *	Cumulative spend *
Year 1 – 8	50% minimum spend	$2,307,974	$2,307,974
Year 9 - 17	40% minimum spend	$1,846,380	$4,154,354
Year 18 – 20	10% final spend	$461,595	$4,615,949

* This will change due to the increase in financial commitment based on increase in annual CPI. This table will be updated in the CSFOS annual report.

7 Threatening Processes

The key threats to the bilby in the Pilbara region (Cramer et al., 2016) are:

- introduced predator (primarily feral cat) impacts;
- habitat degradation (primarily introduced herbivores); and
- habitat degradation due to altered fire regimes.

These threats are commonly interactive; for example, frequent fires and grazing by feral herbivores can create environmental conditions favoured by feral cats (Cramer et al., 2016). These threats are the focus of the management actions and stakeholder partnerships in the CSFOS.

7.1 Introduced Predators

Foxes are considered the primary factor for the decline in bilby in the southern and coastal regions of Australia, with the current distribution of bilby largely outside the present distribution of the fox (Southgate, 1990). Foxes are confined to the coastal plain of the Roebourne subregion of the Pilbara (Carwardine et al, 2014) and may move inland along the major drainage systems when conditions are favourable.

The impacts of cat predation on bilbies can be considerable. Feral cat predation is considered a significant factor in the failure of the 2004 and 2007 bilby reintroductions outside the Arid Recovery Reserve in South Australia (Cramer et al, 2016).

Cat ranges overlap with bilby ranges in the Pilbara, with cats and bilbies found to be present in the same areas at the same time. Hence, it is considered unlikely that the presence of cats alone are responsible for the decline of the bilby (Southgate, 1990), given that both have been observed to cohabit in some areas.

However, given the absence of foxes in the Pilbara inland areas, predation by the feral cat could be considered as one of the major threatening process affecting bilby numbers in the Pilbara.

7.2 Habitat Degradation from Introduced Herbivores

Introduced herbivores, either livestock used in pastoralism (e.g. cattle) or feral animals such as the camel or donkeys, have the potential to impact bilby populations in the Pilbara by degrading habitat via erosion, compaction and removal of vegetation cover; by competing for food resources; and by supporting a higher abundance of introduced predators (Cramer et al., 2016; Bradley et al., 2015). The majority of the distribution of the bilby in the Pilbara coincides with land where livestock densities are low or absent (Cramer et al., 2016).

7.3 Unsuitable Habitat Due to Changed Fire Regimes

The bilby occurs in vegetation with a range of fire intervals (fire-age states). An appropriate fire mosaic (a range of small areas of vegetation with different fire-ages) throughout the landscape increases the probability of suitable habitat and food sources for the bilby (Cramer et al., 2016), and minimises the risks of large unmanaged wildfires spreading across bilby habitat. Large-scale fires can also reduce habitat heterogeneity and decrease cover, increasing predation rates by feral animals (Bradley et al., 2015). Bilbies have been found to persist in areas where traditional small-scale fire mosaics have been conducted around Aboriginal communities (Paltridge 2016, quoted in Commonwealth of Australia, 2019).

8 Greater Bilby Offset Strategy

8.1 Context of CSFOS to Other Documents

The CSFOS aims to align management actions and stakeholder partnerships. In doing so, the CSFOS emphasises on-ground management that directly address threats to bilby, and supporting strategies that establish the systems needed to ensure effective and continuing on-ground action. Supporting strategies will include:

- Governance (building partnerships, capacity building, empowering local groups in bilby conservation)
- Monitoring, survey and information management
- Traditional Owner and community capacity building and management.

In 2013, what is now the Department of Biodiversity, Conservation and Attractions (DBCA) hosted a workshop on the bilby to identify and rank research priorities for the bilby within the Interim Biogeographic Regionalisation for Australia (IBRA) Pilbara region. Research priorities in the CSFOS will be informed by priorities identified at this workshop (Cramer et al., 2016), and research and monitoring underway or completed across the Pilbara. The CSFOS also recognises the Pilbara Bioregion Conservation Action Plan (Heydenrych and Parsons, 2018) that lists major threats and management activities to protect the bilby in the Pilbara region.

The CSFOS may include recovery and research activities that align to the Cramer et al. (2016) broad research themes:

- Refine and develop improved survey methods;
- Habitat requirements;
- Population dynamics to understand genetic structure and gene flow, dispersal and connectivity among (meta-) populations at the landscape scale;
- Feral cat control and management, and
- Improved understanding of effect of fire regime on threat from introduced predators and herbivores.

The relationships of the CSFOS with the objectives of the Recovery Plan, the draft Recovery Plan, themes and research priorities of Cramer et al. (2016), and measures of success of the Pilbara Bioregion Conservation Action Plan (Heydenrych and Parsons, 2018) are presented in Table 4.

Table 4 - Relationships of CSFOS with other key documents

National Recovery Plan (2006) and draft Recovery Plan for Greater Bilby (2019) objective/s	Pilbara Bioregion Conservation Action Plan (Heydenrych and Parsons, 2018)	Cramer et al, (2016) theme/s and research priorities	CSFOS priorities
			On-ground actions
National Recovery Plan: To improve and at least maintain the national conservation status of the Greater Bilby over the duration of the Plan. To achieve an accurate assessment of distribution (both extent of occurrence and area of occupancy), trends in occurrence, and successfully reduce the impacts of key threatening processes. Draft Recovery Plan: The size of the bilby population has grown The area occupied by the bilby has been maintained or increased. The genetic diversity of the bilby has been maintained and retains the potential for evolutionary change through adaption and selection.	Greater Bilby protection: Identify and protect Greater Bilby populations and their core habitat through key management interventions such as fire management, feral animal control and grazing management, as per the above strategies, informed by current research and monitoring.	Theme: Key threat Research priority: introduced predators. Theme: Improved understanding of fire regimes. Research priority: Effect of fire regime on threat from introduced predators.	Feral cat management (e.g. feral cat hand baiting, feral cat aerial baiting). Fox management (e.g. fox control in areas where fox presence has been identified, aerial or land-based control programs).
		Theme: Improved understanding of fire regimes. Research priority 1: Effect of fire regime on threat from introduced predators. Research priority 2: Effect of fire on habitat accessibility and availability of foods. Theme: Habitat requirements	Fire management (e.g. perimeter burns, patch burns to enable bilby persistence)

National Recovery Plan (2006) and draft Recovery Plan for Greater Bilby (2019) objective/s	Pilbara Bioregion Conservation Action Plan (Heydenrych and Parsons, 2018)	Cramer et al, (2016) theme/s and research priorities	CSFOS priorities
		Research priority: Substrate and landform characteristics. Diet and food.	
		Theme: Key threat Research priority: introduced herbivores.	Feral herbivore management (e.g. install stock exclusion fencing near important bilby habitat, reduce stocking water points).
			Partnerships
Aboriginal people have a greater role in bilby conservation	The creation of lasting collaborations amongst land managers addressing priority conservation needs.	n/a	Develop partnerships with land managers, Greater Bilby Recovery Team members, DBCA, indigenous owners, ranger teams etc. (e.g. build capacity with local groups, empower local groups to implement bilby conservation and management actions.)

8.2 Framework

The CSFOS sits within a wider context of relevant documents that may influence the development and implementation of Offset Projects (see Figure 2). The CSFOS (this document) bridges to the objectives of the Recovery Plan and draft Recovery Plan for Greater Bilby (Section 8.1), but is also informed by the objectives and purpose of the following related documents:

- Conservation Advice prepared by Threatened Species Scientific Committee (DAWE, 2016),
- Priority Threat Management for Pilbara Species of Conservation Significance (Carwardine et al., 2014),
- Pilbara Bioregion Conservation Action Plan (CAP) (Heydenrych and Parsons, 2018),
- Greater Bilby Recovery Summit and Interim Conservation Plan (Bradley et al., 2015), and
- Research priorities for bilby in the Pilbara (Cramer et al., 2016).

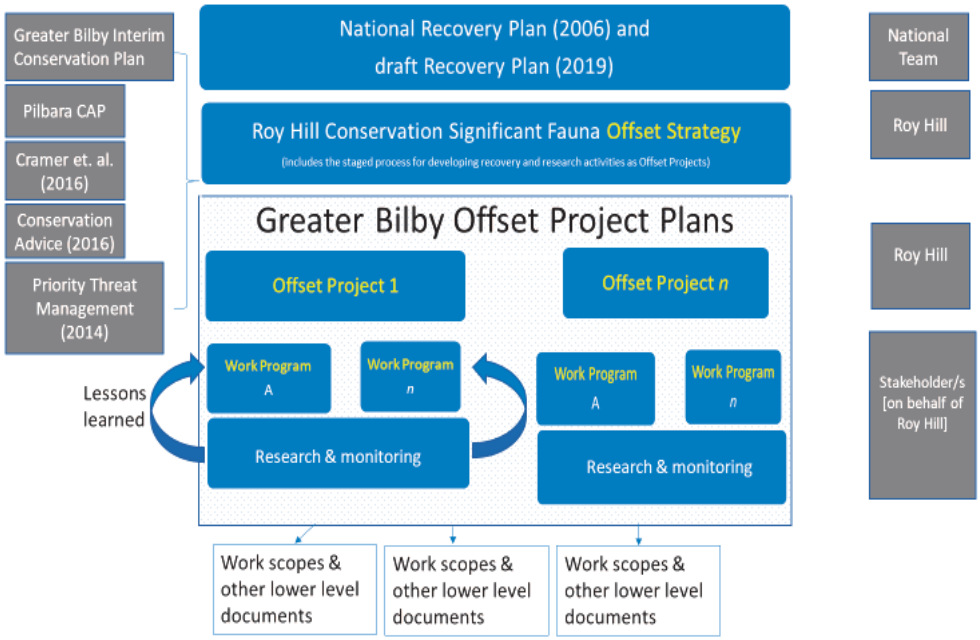

Figure 2 - Framework for this CSFOS and relationship with other key documents and stakeholders

9 Recovery and Research Activities

9.1 Recovery Activities

The implementation of on-ground recovery activities and supporting strategies is the basis of this CSFOS.

Recovery activities will mitigate key threatening processes (summarised in Section 7), being:

- Introduced predators;
- Introduced herbivores; and
- Unsuitable fire regimes.

Offset Projects that target recovery activities will describe the management actions and work program to be implemented; a monitoring program to demonstrate whether these measures are having the desired benefit to bilby population; and performance targets to measure the success of the Offset Project.

Information about the bilby population in the Pilbara is limited, with little known about the area of occupancy, extent of occurrence, abundance, density or habitat use of the bilby in this region (Cramer et al., 2016). Advice will be sought from DBCA on relevant components of the on-ground recovery activities to be implemented.

The outcomes of the DBCA annual report on the conservation and management of the bilby in the Pilbara, may also inform Offset Project proposals.

9.2 Research Activities

Research activities are either associated with on-ground management actions (e.g. compare feral cat control efficacy following hand baiting and following aerial baiting), or could be separate to on-ground actions where the research outcomes inform the future design of on-ground actions (e.g. DNA barcoding of Pilbara Acacia

species to understand those species which harbour the grubs that bilby feed on, and where future effort on country could focus on surveys and protection of these Acacia-grub association; or development of sex-linked markers; or support for the development of a National Greater Bilby database to store and analyse 2ha sign plot and other consistently captured data).

The research priorities identified by Cramer et al. (2016), the Recovery Plan, and the draft Recovery Plan and advice from DBCA will act as a guide to the selection of suitable Offset Project research activities.

9.3 Adaptive Implementation of the CSFOS

The CSFOS adopts an adaptive implementation approach to respond to new information and opportunities over time. Lessons learned from implementing Offset Projects, and from regional conservation projects, may be addressed in new Offset Projects. This approach includes:

- Review (and if required, update of) the approved CSFOS after the first 24 months of its implementation;
- The extension of Offset Project areas where bilby signs are found within properties that are part of an Offset Project; and
- Including findings from other projects, external to Offset Projects implemented under this CSFOS, to recovery activities and supporting strategies (e.g. monitoring methods) that are implemented as Offset Projects under this CSFOS.

10 Offset Projects

In order to meet its offset obligations, Roy Hill will implement Offset Projects developed in accordance with this CSFOS and the conditions of approval.

A number of different types of Offset Projects may be designed:

- New Offset Projects;
- Offset Projects being implemented as part of this CSFOS;
- Offset Projects that continue, expand upon or finalise projects implemented under other conservation programs or Offset projects being implemented by other parties.

Offset Projects must address the requirements as set out in Ministerial Condition xx (EPBC xxxxx/xxxx).

Offset Projects will include recovery actions, research activities and/or stakeholder workshops, or other as yet unidentified supporting activities. Offset Projects may be implemented in parallel, or subsequent to, each other. The scope of Offset Projects may include:

- On-ground management programs to improve bilby habitat condition and local populations by managing feral predators, improving and maintaining habitat, and managing connectivity between bilby populations. These activities are to occur within an appropriate monitoring framework that measures the efficacy of management actions.
- Research contributing to knowledge of the bilby and improved management for protection of the bilby in the Pilbara region and other areas.
- Support to DBCA in continuation of current research activities on the bilby in the Pilbara.

- Building partnerships and capacity for local group implementation to improve governance and coordination on lands where bilby occur, improve monitoring and survey methods, and to undertake research to inform management.

Depending on the nature of the project, the requirements for an Offset Project proposal that is submitted for approval to DAWE will include:

- Project title;
- Location/s of project activities (including GIS shapefiles that define the extent of land management under the Offset Project);
- Project objective;
- Project context and alignment with CSFOS;
- Project compliance requirements (including compliance with EPBC Act Environmental Offsets Policy and, where relevant, how the Offset Project meets the criteria for research and educational programs identified in the EPBC Act Environmental Offsets Policy);
- Project description (including project site rationale where relevant);
- MNES and key threats;
- Stakeholders and roles;
- Management strategies;
- Monitoring program;
- Research program (where relevant);
- Project implementation schedule and budget;
- Risks to project and mitigation measures;
- Project outcomes and targets;
- Enduring benefits strategy; and
- Project review, reporting and communication.

All Offset Project proposals submitted for approval will include an implementation schedule (which may include a staged implementation approach) that aligns with the Offset Project activities to be implemented to achieve the Project's objective/s.

Roy Hill will partner with stakeholders during the Offset Project planning and design phases to develop the Offset Project and to ensure sustained stakeholder involvement during the life of the Offset Project. Roy Hill will identify and seek opportunities to ensure endurance of an Offset Project (where relevant) and seek to establish a strategy to transfer the longer-term outcomes and outputs of Offset Projects to the land managers (e.g. pastoral lessees) of a site. Commitments from the stakeholders involved in the Offset Project (i.e. community that undertake on-ground management actions on their lands) will be explored during early implementation phases of the Offset Project, to ensure that the benefits to the bilby are enduring beyond the Offset Project's life and funding. These commitments may be in the form of conservation agreements or similar and will be subject to the success of the early implementation of an Offset Project.

Each Offset Project proposal will include an indicative budget and implementation schedule for the life of that Offset Project.

Investment in Offset Projects that are based 'on country' is to be spread across a suite of sites with monitoring and research used to inform adaptive implementation of the Offset Project and this CSFOS.

10.1 Offset Project Site Selection

The following hierarchy for site selection will be implemented:

- preference to known bilby sites located within the Pilbara IBRA Bioregion;
- known bilby sites located across the north of Western Australia; or
- known bilby sites elsewhere in Australia.

Site selection will give priority to sites with a high likelihood of meeting the Performance Criteria of the CSFOS (refer to Section 12), that enhances connectivity between bilby habitat, improves and augments the management of existing Offset Project sites, and makes an increased contribution to bilby recovery.

Site selection will, as a minimum, address the following:

- The nature and extent of current land management and threatening processes (fire management, feral predator management, feral herbivore management), and potential for improved outcomes for bilby;
- Level of bilby survey and monitoring conducted at the site (if any);
- Evidence of bilby sign and/or numbers known;
- Land tenure: status and security. Land ownership and lease is an important part of site selection for Offset Projects. The choice of an area should consider future mineral exploration and development but also context (bilby habitat selected relative to other habitat in the area including connectivity to other habitats). Land ownership including indigenous title to land are considerations in terms of landowner support to a proposal;
- Level of pastoral management: Future grazing intensity within a proposed area may be uncertain as managed stock numbers may increase or decrease over the life of the Project based on pastoral management objectives. Station infrastructure needs to be considered in terms of watering points that support feral herbivores which may need to be managed. The level and/or likelihood of land holder engagement and support is also worth acknowledging;
- Stakeholder involvement and level of current acceptance and engagement;
- Opportunities for collaboration (e.g. with researchers, local community, Traditional Owners, resource companies, conservation agencies, non-government organisations (NGOs) etc.);
- Opportunity for complementarity with other conservation management and/or research nearby or elsewhere;
- Opportunity to enter into a long-term conservation agreement or similar type of program to provide benefits to the contributions made by Roy Hill and that continue an enduring legacy to the benefit of the bilby;
- Ecological condition and suitability of area to support bilby;
- Other known threatened species in the area, or suitability of area to support other threatened species;
- Area connectivity: Regional context and connectivity of habitat to other bilby areas;
- Future mining and tenure risks; and
- Practicality: the physical ability to implement the Project based on access, proximity to supporting infrastructure and human resources.

10.2 Considerations for Developing an Offset Project

To develop Offset Projects, proposals will consider (among other issues) the following:

- Does the project provide an environmental benefit to the bilby populations? How?
- Does the project meet the DSEWPaC (2012) criteria for suitable offsets?
- Does the project meet an objective, recovery criteria and/or action from the National Recovery Plan for the Greater Bilby, and the draft Recovery Plan?
- Does the project address a research theme identified by Cramer et al. (2016)?
- What are the limitations, uncertainties and risks associated with the project, and can they be managed to an acceptable level? What is the residual risk?
- What is the project timeframe, and when may the benefits be realised?
- What are the transferable benefits of the project to bilby conservation?
- Will the project be enduring post the completion of initial management actions, monitoring components?

If the Offset Project involves on-ground management measures within a specific land management area, is the area:

- Within a known or potential bilby habitat (mandatory); and
- Located within the Pilbara IBRA Bioregion, and if not, then follow the hierarchy of site location (refer to Section 10.1); and
- Listed as a site in the draft Recovery Plan by the Greater Bilby Recovery Team; and/or
- Located within a current or planned secure conservation tenure, or the current land managers and long-term owners are willing to enter into a Memorandum of Understanding, or similar, to enable long term conservation gains to be achieved for the bilby at the site (desired); and/or
- An area identified by DBCA as priority for management actions with justification for this area to be a priority (desired).

An Offset Project concept will be developed initially and discussed with DAWE and key offset project stakeholders.

Roy Hill will provide the Offset Project concept to DAWE for comment and, subject to DAWE's feedback, commence development of an Offset Project proposal, for submission to DAWE.

10.3 Offset Project Development and Approval Process

Figure 3 shows the process of development of an Offset Project from concept stage to the final stage, relevant steps and responsible parties.

Key stakeholders will be involved early in the development of Offset Project proposals. More detailed work plans may be included in the Offset Project as deemed necessary and if warranted by the Offset Project.

The final Offset Project will be submitted to DAWE for approval in writing prior to its implementation.

Figure 3 - Offset Project Development Process

11 Addressing Risk and Uncertainty

Two types of risk are managed under the CSFOS: the risk of selecting an unsuitable Offset Project; and the risk that an Offset Project fails to achieve its objectives.

These risks will be included and addressed in Offset Project proposals.

11.1 Risk of Selecting an Unsuitable Offset Project

Mitigations to reduce the risk of selecting an unsuitable Offset Project include, but not limited to:

- Unsuitable Offset Project site: Risks are minimised by undertaking a site selection process (Section 10.1).
- Unsuitable Offset Project: Risks are minimised by developing an Offset Project concept that has considered the items as outlined in Section 10.1 and 10.2, in consultation with, and support from, Roy Hill, key stakeholders and DAWE.

11.2 Risk of an Offset Project Failing to Achieve its Objectives

Mitigations to reduce the risk of an Offset Project failing to achieve its objectives may consider, but not be limited to, the following considerations:

- Offset Project not on schedule: Mitigations to ensure Project completion is on time and budget, will include third party contractual conditions and project management controls (e.g. mid-term review with stakeholders, annual reporting). Additional mitigations may consider a staged project approach to Offset Project execution. For example, Stage 1 may include Project foundation design, development of stakeholder relationships, and capacity building to initiate early on-ground activities. Conditional on the successful outcomes achieved in Stage 1, Stage 2 of an Offset Project may be approved to continue subsequent stages. This staged approach can be used to manage budgets, timelines, reassess Project objectives and the likelihood of achieving them.
- Offset Project hampered by unplanned natural events: External (stochastic) risks beyond the Project coordination and design may occur (e.g. drought, uncontrolled wildfires, flood). Offset Projects should consider how environmental uncertainty in the landscape may be minimised. For example, bilby home ranges are large (up to 10km): managing at the landscape scale offers a more sensible approach to managing select bilby habitat areas. Undertaking surveys for bilby signs elsewhere in the land area may identify additional populations where habitat may be managed. Finally, implementation of a fire management plan early in the Project timeframe may reduce the risks of a significant extensive wildfire impacting on the focus bilby population.
- Offset Project management activities do not achieve their goals: Offset Projects need to consider the risks that could relate to executing management actions and how these may influence project success. For example, approved permits for feral cat baits may need to be sought, fire practices may require land owner support and permits, other introduced predators may also need consideration for management due to meso-predator interactions. Delays may lead to extended project timeframes, and project design may require modification to accommodate these delays. Mitigations need to be considered on a case by case basis for each Offset Project.
- Offset Project unable to continue due to unplanned events: External issues or events (e.g. national outbreak of disease, insurances of Project Delivery parties reduce capability of delivery) beyond the management of the Project may occur. Additional mitigation measures may consider deferral of the project until the external threats are minimised or reduced, appointment of alternate delivery providers, cessation of the Offset Project, or revision of the Project to cater for the issue at hand, if there are no alternate options to continue the project. Mitigations will need to be considered on a case-by-case basis for each Offset Project.

- Unsuitable Offset Project lead: Project objectives may not be met due to a change in the competency of the Project lead throughout the project timeframe. Risk mitigation will need to be managed through the contractual arrangements between Roy Hill and the third party engaged to implement the Offset Project. Considerations should include:
    - How knowledgeable and experienced are the third party(s) in undertaking this work? Have they completed similar projects elsewhere?
    - How dependable is the third party undertaking the work? Is there a risk they will not be able to complete the proposed Project in the required timeframe and budget?
    - Does the third party have the appropriate staff resources to complete the proposed Project?
    - Has an appropriate project design been developed and input sought from key stakeholders (e.g. DBCA)?
    - Are appropriate project management/contractual arrangements in place? Will regular contract meetings be held with third parties to discuss progress and project delivery milestones? Does the third party have appropriate project management skills and tools to manage the proposed Project, provide regular reporting and continually monitor progress?

12 CSFOS Performance Criteria, Targets, and Outcomes

The outcome of the Roy Hill CSFOS is to realise a conservation benefit for the bilby through the investment of appropriate and beneficial environmental management actions for the species.

The CSFOS has three performance criteria that will support its objective:

- To increase/maintain the number of Offset Project sites to support the long-term probability of persistence of the bilby.
- Offset investments ensure there are no less than 70% of total funding used for on-ground threat abatement actions and no more than 30% used for project planning and research.
- Build capacity and partnerships with indigenous/pastoral land holders that allows for continued on-ground management of sites supporting bilby.

Each performance criterion is supported by milestones and targets (see Table 5).

Table 5 - Desired outcomes and targets for the CSFOS

CSFOS Performance Criteria	CSFOS Milestones	CSFOS Targets
To increase/maintain the number of Offset Project sites to support the long-term probability of persistence of the bilby.	• By 31 Dec 2026, two Offset Project sites have commenced to support land management for bilby. • By 31 Dec 2034, one additional Offset Project site has commenced to support land management for bilby.	• By 31 Dec 2039 a review of three Offset Project sites supports evidence for the long-term probability of persistence of the bilby.
Offset investments ensure there are no less than 70% of total funding used for on-ground threat abatement actions and no more than 30% used for project planning and research.	• By 31 Dec 2026 financial commitment has been allocated as approximately 70% for on-ground threat abatement actions and approximately 30% for project planning and research. • Demonstrate by 31 Dec 2034 that financial commitment has been allocated as approximately 70% for on-ground threat abatement actions and approximately 30% for project planning and research.	• By 31 Dec 2039, full financial commitment has been allocated at approximately 70% for on-ground threat abatement actions and approximately 30% for project planning and research.
Build capacity and partnerships with indigenous/pastoral land holders that allows for continued on-ground management of sites supporting bilby.	• By 31 Dec 2026, two Offset Project sites have initiated partnerships and capacity with land holders and have commenced to support land management for bilby. • By 31 Dec 2034, one additional Offset Project site has initiated partnerships and capacity with land holders and have commenced to support land management for bilby.	• By 31 Dec 2039, a review of the three Offset Project sites supports evidence that landholders have the skills and capability to manage their land to support the bilby.

13 Implementing Offset Projects Through a Conservation Offset Fund

Condition xxx allows for financial contributions to be made to a conservation offset fund for activities that in combination with, or as an alternative to approved Offset Projects, will realise a conservation benefit to the bilby. This conservation offset fund or trust is to be approved in writing by the Minister.

In order to gain approval from the Minister to fund an Offset Project through a conservation offset fund or trust, Roy Hill will, apply to the Minister in writing, and will:

- explain the fund/trust governance and project management systems; and
- outline one or more Offset Project concepts that the proposed fund may be implementing, and if implemented, are likely to realise a conservation benefit to the bilby.

Roy Hill will provide financial contributions to a conservation offset fund or trust only on receipt of approval of that conservation offset fund or trust by the Minister. This financial contribution will be made on a biennial basis in line with the reporting to be provided with the Impact Reconciliation Procedure (OP-PRO-01559) and with payment made to the approved conservation offset fund or trust within 28 days of submission of the Biennial Report. Evidence of this payment will be provided to the Minister within 28 days of payment.

14 Stakeholder Roles and Responsibilities

14.1 CSFOS Stakeholders

Overall accountability for implementing the CSFOS, and reporting on the implementation of the CSFOS, rests with the Roy Hill Environment and Approvals Manager.

Third parties undertaking Offset Projects on behalf of Roy Hill, or with financial contributions from Roy Hill (e.g. conservation offset fund or trust) are responsible for the implementation of the Offset Project as specified within their contract and/or scope of works. Those parties will report to Roy Hill on the implementation of the Offset Projects so that Roy Hill can in turn report to the DAWE on CSFOS progress.

Roy Hill has decided the most appropriate way to obtain expert advice relating to bilby Offset Projects is to consult directly with specialists (e.g. DBCA, Greater Bilby Recovery Team). The aim is to bring together bilby experts, key stakeholders and Roy Hill representatives with the purpose of providing advice on Offset Projects concepts, design and implementation.

Responsibilities for implementing the CSFOS and Offset Projects are listed in Table 6.

Table 6 - CSFOS Responsibilities

Agency	Role and Responsibility
Roy Hill	• Compliance with EPBC xxx/xxxx approval conditions • Implementation of the CSFOS • Biennial Impact Reconciliation Report • Provision of MNES offset funding to Pilbara Environmental Offset Fund (if approved by the Commonwealth) • Prepare and submit Offset Project/s • Consult and seek advice from specialists (e.g. DBCA, Greater Bilby Recovery Team) with respect to bilby recovery and monitoring during Offset Project concept development • Facilitate implementation of an approved Offset Project (which may be delivered by a third party) • Preparation of annual reports, compliance reports
Commonwealth Environment Minister	• To review and decide on approval of this CSFOS • To review and decide on approval of a conservation offset fund
DAWE	• To review and approve Offset Projects submitted in accordance with this CSFOS and the EPBC xxx/xxx approval conditions

14.2 Offset Project Stakeholders

Roy Hill understands the need to work closely with government agencies, third party research/conservation organisations, and other stakeholders (for example, indigenous groups, NRM organisations, NGOs, not-for-profit groups, land owners/lessees, other community groups, conservation offset funds and trusts) over the life of this offset program. Offset Projects will require stakeholder engagement that supports an enduring process for on-ground bilby conservation to:

- Build partnerships
- Build capacity
- Empower local groups in bilby conservation

Offset Projects will identify the roles and responsibilities of key stakeholders for the purpose of achieving the CSFOS and Offset Project outcomes. Offset Projects will include mechanisms that ensure partnerships are designed to co-lead on-ground management actions. Partners are to be identified and closely involved early in Offset Project design to maximise benefits of on-ground Offset Project implementation.

14.3 Future Consultation

Roy Hill will continue undertaking on-going consultation with DBCA and other conservation/research organisations to identify potential Offset Projects, and to conceive, develop and implement Offset Projects to ensure the ongoing conservation of the bilby in the Pilbara or wider, as per Roy Hill's obligations. Working groups may be established to finalise the details of each project and to report to DAWE on project design and anticipated outcomes.

15 Review and Reporting

15.1 Compliance Annual Reporting

Compliance of the CSFOS against Condition 3 (EPBC xxxx/xxxx) will be reported annually to DAWE by 1 April each year on progress made in the previous calendar year. The first CSFOS annual report will be submitted by 1 April 20xx.

Annual reports will include (for the previous calendar year):

- Any direct or indirect bilby habitat clearance;
- List of Offset Projects commenced, on-going, or concluded (If applicable);
- Status of existing Offset Projects (if applicable), including:
    - Project schedule (commencement date, proposed end date);
    - Funds expended on Offset Projects by Roy Hill in the last year, including financial milestones;
    - Status of project objective, and progress towards performance criteria, milestones and targets; and
    - Any project risks realised and corrective actions implemented.
- Stakeholder consultation undertaken in the last year.

Third parties undertaking Offset Projects funded by Roy Hill will provide regular reports to Roy Hill on the Offset Project status. Main points from these reports will be summarised in Roy Hill's CSFOS annual report to DAWE. Any publications relating to Offset Projects released in the preceding year will also be provided.

If offset funds are made to the PEOF, the biennial Impact Reconciliation Report will be submitted to the Commonwealth in accordance with the Impact Reconciliation Procedure (OP-PRO-01559), in lieu of an annual CSFOS Report.

15.2 Review and Revision of the CSFOS

The CSFOS will be reviewed and, if required, revised over the term of the offset implementation period in response to audit findings and monitoring results.

16 Abbreviations

Abbreviation	Definition
ABS	Australian Bureau of Statistics
CPI	Consumer Price Index
Cwlth	Commonwealth
DBCA	Department of Biodiversity, Conservation and Attractions
DAWE	Department of Agriculture, Water and the Environment
DSEWPaC	Commonwealth Department of Sustainability, Environment, Water, Population and Communities (replaced by DAWE)
DWER	Department of Water and Environmental Regulation
EPBC Act	*Environment Protection and Biodiversity Conservation Act* 1999
CSFOS	Conservation Significant Fauna Offset Strategy
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature
MNES	Matter of National Environmental Significance
NGO	Non-government organisations
NRM	Natural Resource Management
Recovery Plan	National Recovery Plan for the Greater Bilby, *Macrotis lagotis* (Pavey, 2006)
Draft Recovery Plan	Recovery Plan for the Greater Bilby (*Macrotis lagotis)* – DRAFT. *Commonwealth of Australia* (2019)
WA	Western Australia

Table 7 - Abbreviations

17 References

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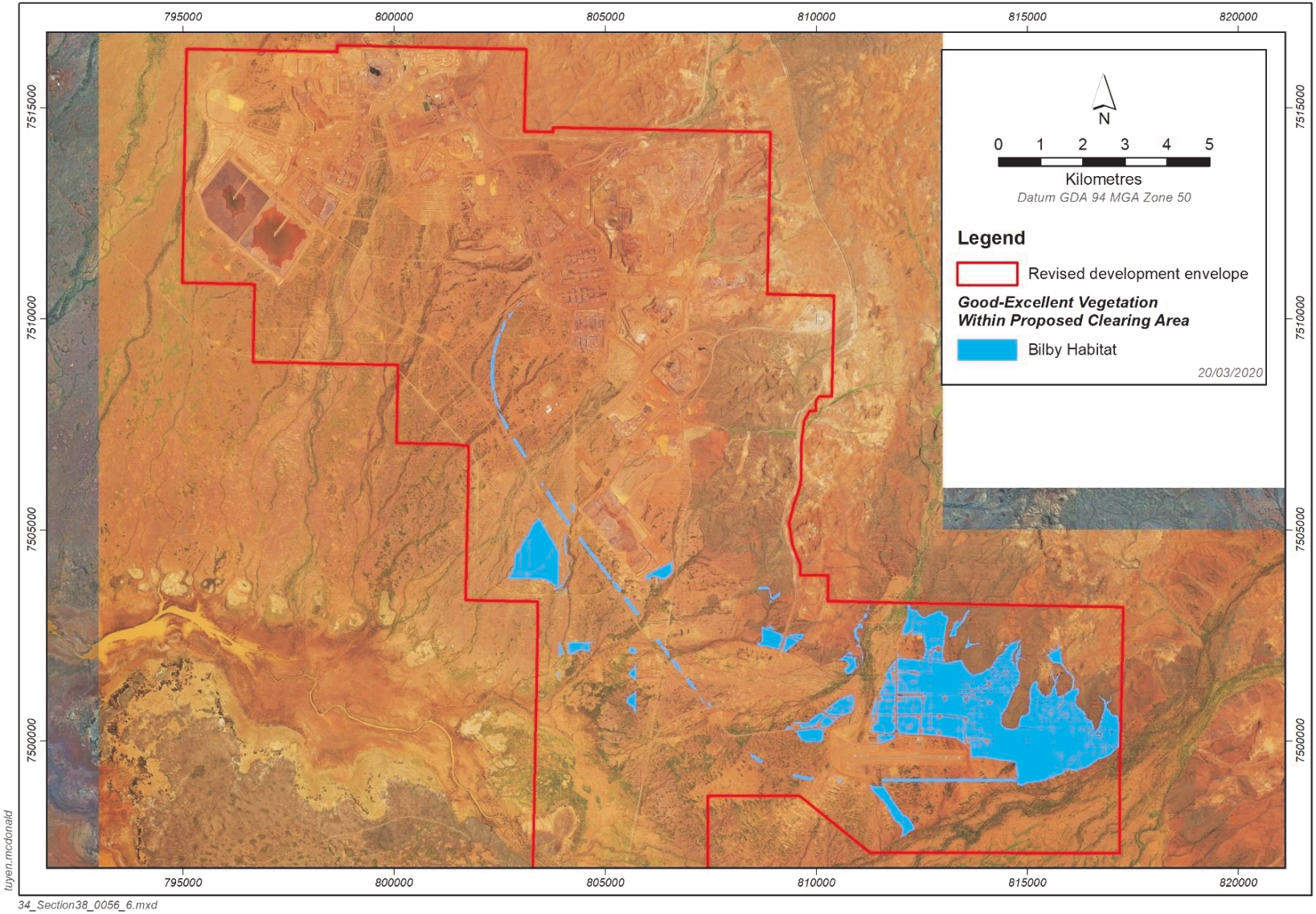
18 Appendices

Appendix 1 – Greater Bilby habitat at the Mine – proposed impact areas for Revised Proposal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