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| No. | Date | Description | Prepared by | Checked by | Reviewed by | Approved by |
| V0.1 | 26/11/2020 | Draft for submission | MY/MS/CK/KB | SL | SO / PdSM | so |
| V1.0 | 10/09/2021 | Final Draft addressing DMA comments | MS/CK | PB/AB/FT | PT | PT |

Table ES1: TFEMP Summary

| Project Name | MacKay Sulphate of Potash Project | |
|--|--|--|
| Proponent Name | Agrimin Limited | |
| Ministerial Statement Number | N/A – Project is under assessment (Assessment Number 2193) | |
| Purpose of TFEMP | The purpose of the TFEMP is to address the requirements of the Agrimin ESD and present a robust and implementable environmental management framework to protect the environmental values of the Project Area and demonstrate that the EPA's objectives are met during the operational stage of the Project. | |
| Key Environmental Factors and management outcomes/objectives | Terrestrial Fauna: The proponent shall manage the operations of the project to meet the following Outcomes and Objectives: Minimise adverse impacts to significant fauna as a result of project-related increase in feral animal abundance Minimise impacts to Night Parrot habitat as a result changed in hydrological flows Avoid injury or death of significant species as a result of Vehicle Strike and Movement Avoid injury or death of birds as a result of wind turbines Avoid injury or death of fauna as a result of attraction and/or entrapment in artificial water bodies Avoid and minimise adverse impacts to waterbirds as a result of operating the Project Minimise adverse impacts to significant fauna as a result of project-related altered fire regime | |
| Condition Clauses | N/A | |
| Key components in the TFEMP | Key provisions are detailed in Section 3 | |
| Proposed Construction Date | TBD | |
| EMP required pre- construction? | Yes | |

Corporate Endorsement

I hereby certify that to the best of my knowledge, the provisions within this Mackay Potash Project Terrestrial Fauna Management Plan are true and correct.

| Name: | Signed: | |
|-----------|---------|--|
| | | |
| Position: | Date: | |

Abbreviations

Agrimin Agrimin Limited

CMCP Conceptual Mine Closure Plan

Cwth Commonwealth

DBCA Department of Biodiversity, Conservation and Attractions

EP Act Environmental Protection Act 1986
EPA Environmental Protection Authority

EPBC Act Environment Protection and Biodiversity Conservation Act 1999

ERD Environmental Review Document
ESD Environmental Scoping Document

GDS Great Desert Skink

ha hectare km kilometre m meters

MNES Matter of National Environmental Significance
NIDE Northern Infrastructure Development Envelope

NT Northern Territory
NT Northern Territory

Off-LDE Off Lake Development Envelope
On-LDE On Lake Development Envelope

SIDE Southern Infrastructure Development Envelope

SRE Short Range Endemic

TFEMP Terrestrial Fauna Environmental Management Plan

WA Western Australian

Agrimin Limited

Terrestrial Fauna Management Plan

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Context, Scope and Rationale

1.1 The Project

Agrimin will own and operate the greenfields potash fertiliser operation Project (the Project) located approximately 450 km south of Halls Creek and 790km west of Alice Springs by road. The Project is located within the East Pilbara region of Western Australia (WA), adjacent to the WA and Northern Territory (NT) border (Figure 1-1).

The Project involves the extraction of brine from a network of shallow trenches established on the surface of Lake Mackay. The brine will be transferred into evaporation ponds for the precipitation of salt which will be harvested and then processed to produce a potash fertiliser product.

The Project is remote and extensive (263,675 ha) and therefore four development envelopes have been defined. The following terms are used throughout the TFEMP (Figure 1-1):

- **Study Area** refers to the boundary within which all investigations and field surveys were undertaken (443,985 ha).
- Development Envelopes (post approval terminology Project Area) the boundary within which the elements of the Project are situated. The development envelopes occur entirely within the Study Area and comprise four components that make up the Project. The Project includes disturbance of up to 15,000 hectares (ha) of the lake's surface and clearing of approximately 1,500 ha of native vegetation. The proposed extent of the physical and operational elements includes four development envelopes (Figure 1-1):
 - On-lake Development Envelope (On-LDE): On-lake development of trenches, extraction of up to 100 GL/a of brine, and solar evaporation and harvesting ponds for potash salts, including ground disturbance of approximately 15,000 ha with the 217,261 ha On-LDE.
 - Off-Lake Development Envelopes (Off-LDE): Off-lake development of a processing plant and associated site infrastructure, including access roads, accommodation camp, airstrip and solar farm, including clearing of approximately 200 ha of native vegetation within the 688 ha Off-LDE.
 - Southern Infrastructure Development Envelope (SIDE): Development of borefield, water pipeline and access tracks for abstracting up to 3.5 GL/a of processing water and off-lake access to Lake Mackay including clearing of approximately 300 ha of native vegetation within the 11,799 ha SIDE.
 - Northern Infrastructure Development Envelope (NIDE): Haul road for trucking potash production to Wyndham Port, including clearing of approximately 1,000 ha of native vegetation within the 33,928 ha NIDE.
- Indicative Footprints the proposed Indicative Footprints (IFs) occur entirely within the Proposal Area and refers to the area that is proposed to be directly disturbed by the Proposal (e.g. clearing of native vegetation). The layout of the IF may be subject to change, however, total disturbance will not exceed the maximum disturbance for each Development Envelope as presented in the Environmental Review Document (ERD). Proponent-led avoidance and minimise measures has been implemented where possible to reduce and minimise potential impacting on areas of high ecological or heritage value through the detailed design of the indicative footprints.

1.2 Purpose and Objectives

The purpose of the TFEMP is to detail and describe how the potential impacts to significant fauna from Project activities will be avoided and minimised during the operational phases of the Project. The TFEMP clearly defines environmental outcomes and management objectives, that are supported by appropriate monitoring programs that include clear management targets and actions, and adaptive management and reporting protocols. Where significant residual environmental impacts have been identified, Agrimin have prepared and have submitted an offset strategies to ensure that Environmental Protection Authority (EPA's) Environmental Objective for Terrestrial Fauna (EPA 2016a) can be met.

The scope of the TFEMP applies specifically to impacts on significant fauna species from construction and operational activities within the Project Area (Figure 1-1). The overarching objective of the TFEMP is to

avoid and minimise direct and indirect impacts to significant terrestrial fauna species and their habitats, including but not limited to:

- Bilby (Macrotis lagotis);
- Night Parrot (NP) (Pezoporus occidentalis);
- Great Desert Skink (Liopholis kintorei);
- Spectacled Hare-wallaby (Lagorchestes conspicillatus leichardti) (may occur throughout the year in suitable habitat within the NIDE); and
- 13 species of migratory or threatened waterbirds (only occur on the lake and surrounds after large flood events).

This TFEMP has been prepared in accordance with the 'Instructions on how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans' (EPA 2020a).

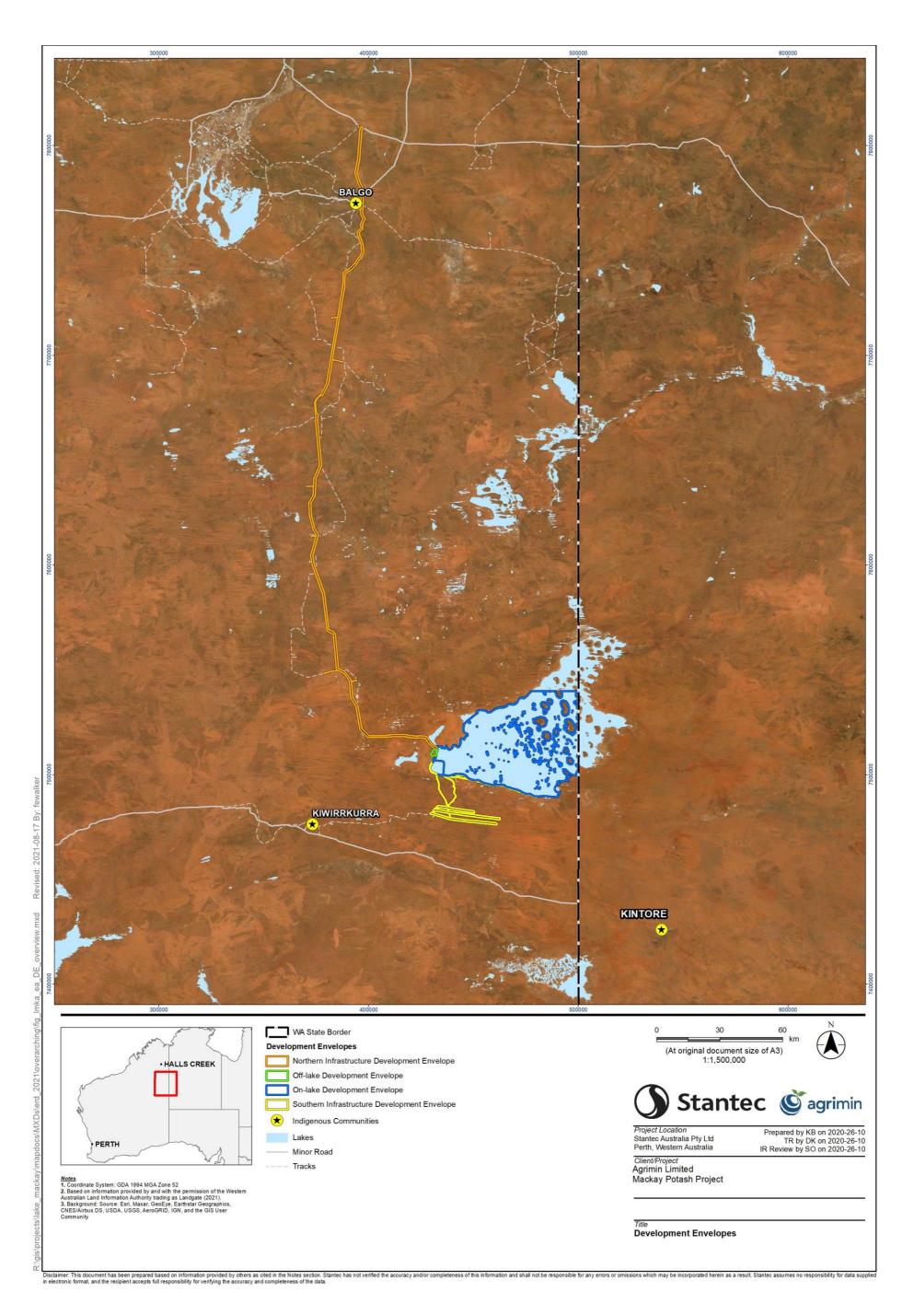


Figure 1-1: Mackay Potash Project, Project Area and Development Envelopes

1.3 Key Environmental Factor – Terrestrial Fauna

The TFEMP has been prepared as part of the Project's management framework to address the EPA's Environmental Factor of 'Terrestrial Fauna'. The EPA Objective for Terrestrial Fauna is 'to protect terrestrial fauna so that biological diversity and ecological integrity are maintained' (EPA 2016a). The TFEMP aims to manage any potential impacts to flora and vegetation that may be caused as a result of operational activities for the Project and therefore demonstrating that the EPA's objective can be met.

The potential exists for direct and indirect impacts from the Project to the terrestrial fauna values across all four Development Envelopes. The Project's potential impacts to significant fauna species within the Project Area during the operational phase include:

- Direct mortality (vehicle strikes, interactions with infrastructure such as wind turbines and trenches)
- Increased in feral animal abundance
- Changes to hydrological flows
- Altered fire regime.

1.4 Condition Requirements

The Project is currently under assessment by the EPA (assessment number 2173). This TFEMP has been prepared for submission with the ERD and provides a draft condition framework for the EPA to consider as part of the ERD process. As the project is still under assessment, a Ministerial Statement has not yet been issued.

1.5 Rational and Approach

Agrimin is committed to avoiding and minimising potential impacts caused by the operations of the Project to fauna species of significance and their associated habitats to ensure the biodiversity and ecological integrity and function of Terrestrial Fauna are maintained.

Rationale for the proposed management approach is supported by technical survey work undertaken to date. The TFEMP proposes a hybrid of objective-based and outcome-based management provisions, which will ensure that a robust and implementable environmental management approach is achieved. The management provisions will be supported by clearly defined environmental management objectives to avoid and mitigate impacts relating to the Project.

Rationale for the proposed management approach is supported by baseline survey work (conducted to-date and propose to occur during operations) and an in-depth understanding of the environment values in the Project Area, ensuring that the environment outcomes are capable of being reported against trigger and threshold levels. Where impacts were not measurable, and rather actions can be monitored, objective-based provisions have been applied.

1.5.1 Environmental Surveys

The rationale for the proposed management approach in this TFEMP is supported by technical survey work undertaken to date. The Development Envelopes have been subject to extensive field surveying since 2017, including desktop, reconnaissance, and detailed surveys. The findings of the surveys have been used to inform the impact assessment in the ERD and used to develop management and mitigation measures to minimise the environmental impacts arising from Project activities.

1.5.2 Fauna Habitats

Several significant habitats and microhabitats have been identified within the Project Area. These features were highlighted as they provide important sources of shelter, food, and water for fauna, including significant fauna. Many of these features were uncommon in the Study Area or restricted to certain habitat types. Fauna habitats described and delineated across the Project Area include:

- Salt lake playa;
- Lake margin;
- Claypans and claypan mosaic;

- Saline flats and depressions;
- Dune-field:
- Dune;

- Spinifex sandplain;
- Gravel spinifex plain;
- Rocky ridge and gorge;

- Outcropping and stony rise;
- Ridge slope; and
- Drainage line.

There were three unique landscape features identified within the Project Area, Lake Mackay, island outcropping and water sources, which provide important sources of shelter, food, and water for fauna, including significant fauna.

1.5.2.1 Lake Mackay

The playa and associated peripheral wetlands are subject to irregular and infrequent flood events, with the lake filling to a maximum depth of 2 m on average once every 5-10 years. The duration of flood events can last from several weeks up to six months (Stantec 2020b). During major floods, the lake supports a range of waterbird species including shorebirds, terns and ducks. The larger islands on the lake serve as waterbird breeding habitat while the lake playa and surrounding claypans/ saline depressions support foraging resource.

1.5.2.2 Island Outcropping

Lake Mackay is host to more than 270 islands within the On-LDE. These range from small unvegetated formations to large formations that host extensive sand dunes. The islands range from less than 1 m in height to more than 13.5 m, with the larger islands providing the greatest topographic relief. Drilling investigations completed on six lake islands confirmed that they are surficial features of variable thickness underlain by lakebed sediments and are not linked to another subsurface geologic feature.

The lake islands are composed of unconsolidated aeolian sand at surface which is underlain by calcrete and gypsiferous sand. Clay content increases with depth and typically marks the transition from island sediments to the lakebed sediments. The thickness of the island sequences varies depending on the size of the island and topographical elevation.

1.5.2.3 Water Sources

Water sources are a limiting factor in arid environments and are an important feature of the arid interior, albeit typically temporarily during and following rainfall events. Specifically, birds and mammals will use these areas for drinking, amphibians will use these areas to breed, and many vertebrate fauna will benefit from increased aquatic invertebrate fauna abundance for food. A total of 13 temporary water sources were identified in the Study Area. Most were pools in exposed bedrock, associated with rocky substrates in rocky ridge and gorge (5), minor drainage line (3), and outcropping and stony rise (2) habitats. Three were identified in claypans and claypan mosaic habitat; these comprised large claypans and a soak. The location of one permanent water source supplied by Tjurabalan representatives is located approximately ~250 m west and downstream of the NIDE.

1.5.3 Fauna Assemblage

The desktop assessment (database searches and the literature review) identified a total of 421 species of vertebrate fauna which have previously been recorded and/or have the potential to occur within the Study Area and therefore the Project Area. In total, across all previous surveys that intersect the Study Area, a total of 245 vertebrate fauna species have been recorded, comprising 22 native mammals, 9 introduced mammals, 129 birds, 1 introduced bird, 80 reptiles and 6 amphibians.

During flood events, the Lake Mackay playa and peripheral wetlands provide habitat with that supports assemblages of waterbirds which are otherwise absent from the region during dry conditions.

1.5.4 Significant Fauna Species

Twenty-one significant species listed under the WA *Biodiversity Conservation Act 2016* (BC Act) and the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* have been confirmed in the Study Area included three mammals, 14 birds (9 migratory) and three reptiles. Table 1-1 present species of particular note due to their conservation status, relative abundance and/or potential to be impacted by the Project (see Figure 1-2, Figure 1-3, Figure 1-4 and Figure 1-5).

In addition, five species were considered likely to occur and comprise one mammal, the Spectacled Hare-wallaby (P3) and four waterbirds (Migratory). The Spectacled Hare-wallaby may occur throughout the year in suitable habitat within the NIDE, the waterbirds would only occur on the lake and surrounds after rainfall, particularly large flood events.

Table 1-1 Significant fauna confirmed or likely to occur within the Study Area

| Scientific Name | Common Name | Likelihood of Occurrence | EPBC | BC Act | | | |
|---|--|-----------------------------|------|-----------|--|--|--|
| Mammalia | | | | | | | |
| Macrotis lagotis | Greater Bilby | Confirmed | Vυ | Vυ | | | |
| Dasycercus blythi | Brush-tailed Mulgara | Confirmed | - | P4 | | | |
| Notoryctes caurinus / Notoryctes typhlops* | Northern / Southern Confirmed Marsupial Mole | | - | P4 | | | |
| Lagorchestes conspicillatus leichardti | Spectacled Hare-wallaby | Likely | - | P3 | | | |
| Aves | | | | | | | |
| Pezoporus occidentalis | Night Parrot | Confirmed | En | Cr | | | |
| Rostratula australis | Australian Painted Snipe | Confirmed | En | En | | | |
| Polytelis alexandrae | Princess Parrot | Confirmed | Vυ | P4 | | | |
| Falco hypoleucos | Grey Falcon | Confirmed | - | Vυ | | | |
| Amytornis striatus striatus | Striated Grasswren | Confirmed | - | P4 | | | |
| Apus pacificus | Fork-tailed Swift | Confirmed | Mi | IA | | | |
| Charadrius veredus | Oriental Plover | Confirmed | Mi | IA | | | |
| Plegadis falcinellus^ | Glossy Ibis | Confirmed | Mi | IA | | | |
| Calidris acuminate | Sharp-tailed Sandpiper | Confirmed | Mi | IA | | | |
| Tringa stagnatilis | Marsh Sandpiper | Confirmed | Mi | IA | | | |
| Sterna nilotica | Gull-billed Tern | Confirmed | Mi | IA | | | |
| Sterna leucopterus | White-winged Black Tern | Confirmed | Mi | IA | | | |
| Calidris ruficollis | Red-necked Stint | Confirmed | Mi | IA | | | |
| Tringa nebularia | Common Greenshank | Confirmed | Mi | IA | | | |
| Tringa nebularia | Common Sandpiper | Likely | Mi | IA | | | |
| Calidris melanotos | Pectoral Sandpiper | Likely | Mi | IA | | | |
| Glareola maldivorum | Oriental Pratincole | Likely | Mi | IA | | | |
| Tringa glareola | Wood Sandpiper | Likely | Mi | IA | | | |
| Reptilia | | | | | | | |
| Liopholis kintorei | Great Desert Skink | Confirmed | Vυ | Vυ | | | |
| Lerista aff. robusta | Broad-eyed Slider | Confirmed | - | P1 | | | |
| Ctenotus uber johnstonei | Spotted Ctenotus | Confirmed | - | P2 | | | |

^{*} Both species have been recorded in the Study Area and have an overlapping range. As they cannot be differentiated based on tracks and signs and have the same conservation listing, they are discussed collectively.

Primary habitats for each significant species have been identified based on survey findings (intersects of recorded locations and habitats) and supplemented with known ecology for each species. It is acknowledged that some species may occasionally be recorded outside their primary habitats and these have been differentiated as secondary habitats.

1.5.4.1 Waterbirds

Ornithological surveys of Lake Mackay immediately following major rainfall and flooding events suggest Lake Mackay and surrounding smaller freshwater claypans may provide important breeding habitat for waterbird populations. A total of at least 34 confirmed waterbird species were recorded at Lake Mackay including 12 threatened and priority waterbird species (360 Environmental 2017a, Duguid et al. 2015, Stantec 2021).

There were no direct observations of waterbirds on waterbodies of the islands. However, the Stantec 2021 targeted waterbird survey recorded 4,200 Banded Stilts (*Cladorhynchus lecocephalus*) displaying breeding behaviour on a lake island (Stantec 2021). Furthermore, Banded Stilts with juveniles were observed on the lake from three other surveys including in internationally important numbers in 2001 (due to islands providing protection from predators) (360 Environmental 2017a, Duguid *et al.* 2015, Pedler 2017). In addition, several significant species were recorded from the lake and its peripheral wetlands, including internationally important numbers of Sharp-tailed Sandpipers (*Calidris acuminate*) (Mi: Migratory shorebird), nationally important numbers of Red-necked Stints (*Calidris ruficollis*) (Mi: migratory shorebird) and the Australian Painted Snipe (*Rostratula australis*) (En) (360 Environmental 2017b, Stantec 2021). Therefore, it is possible that these species may also utilise the islands and their waterbodies when foraging and/or breeding during major flood events

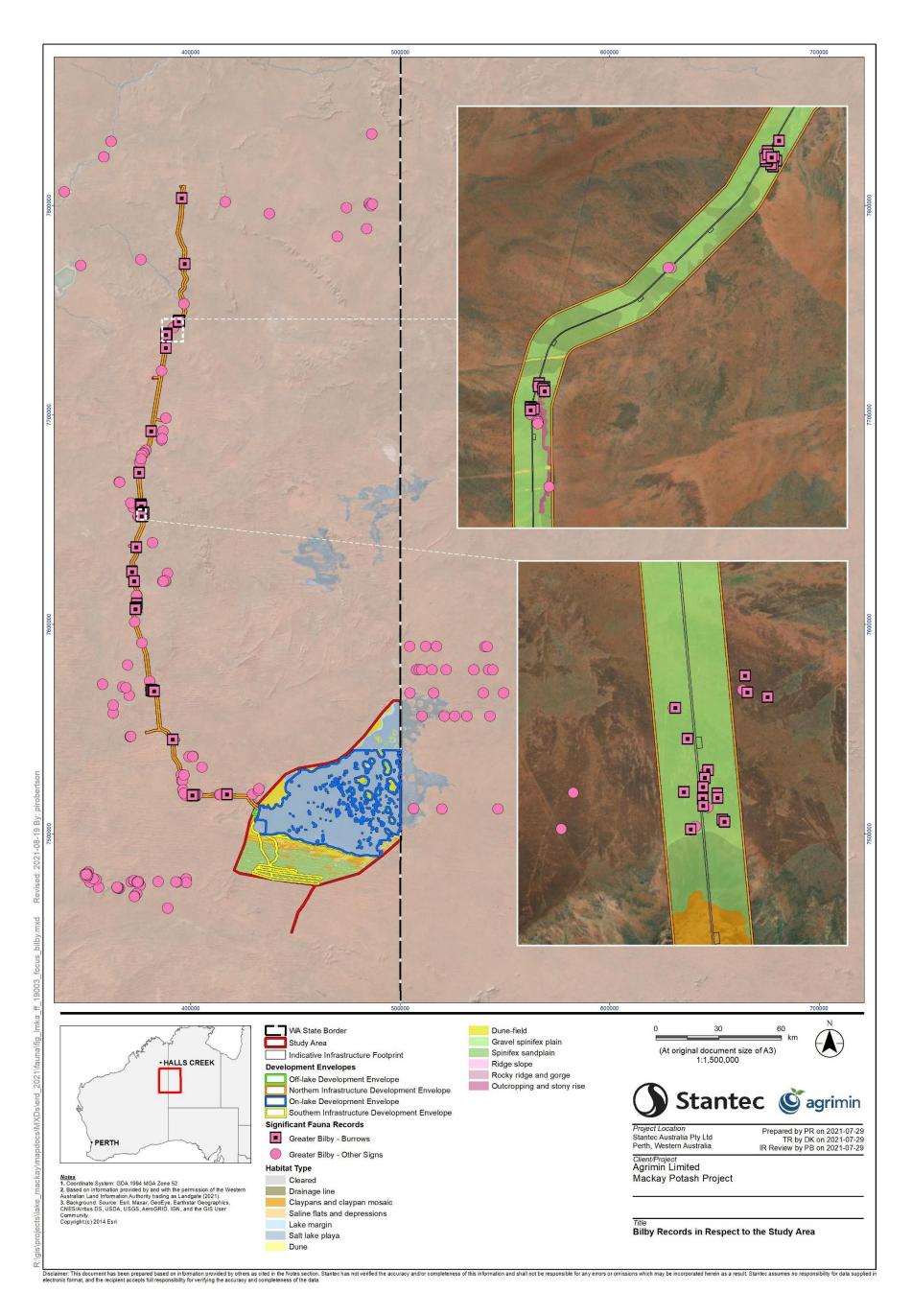


Figure 1-2: Terrestrial Fauna Habitats and Records of Fauna – Bilby

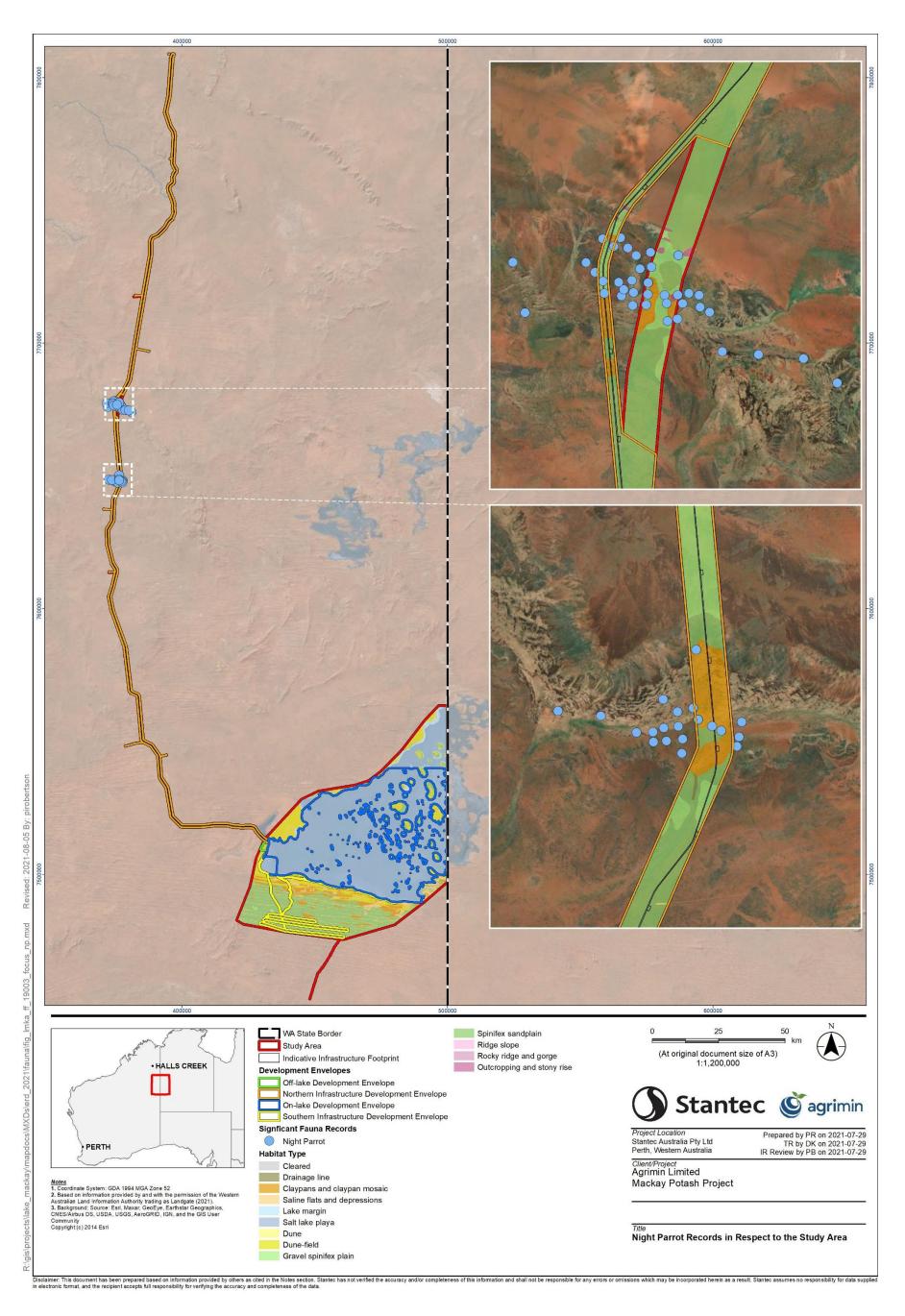


Figure 1-3 Terrestrial Fauna Habitats and Records of Fauna-Night Parrots

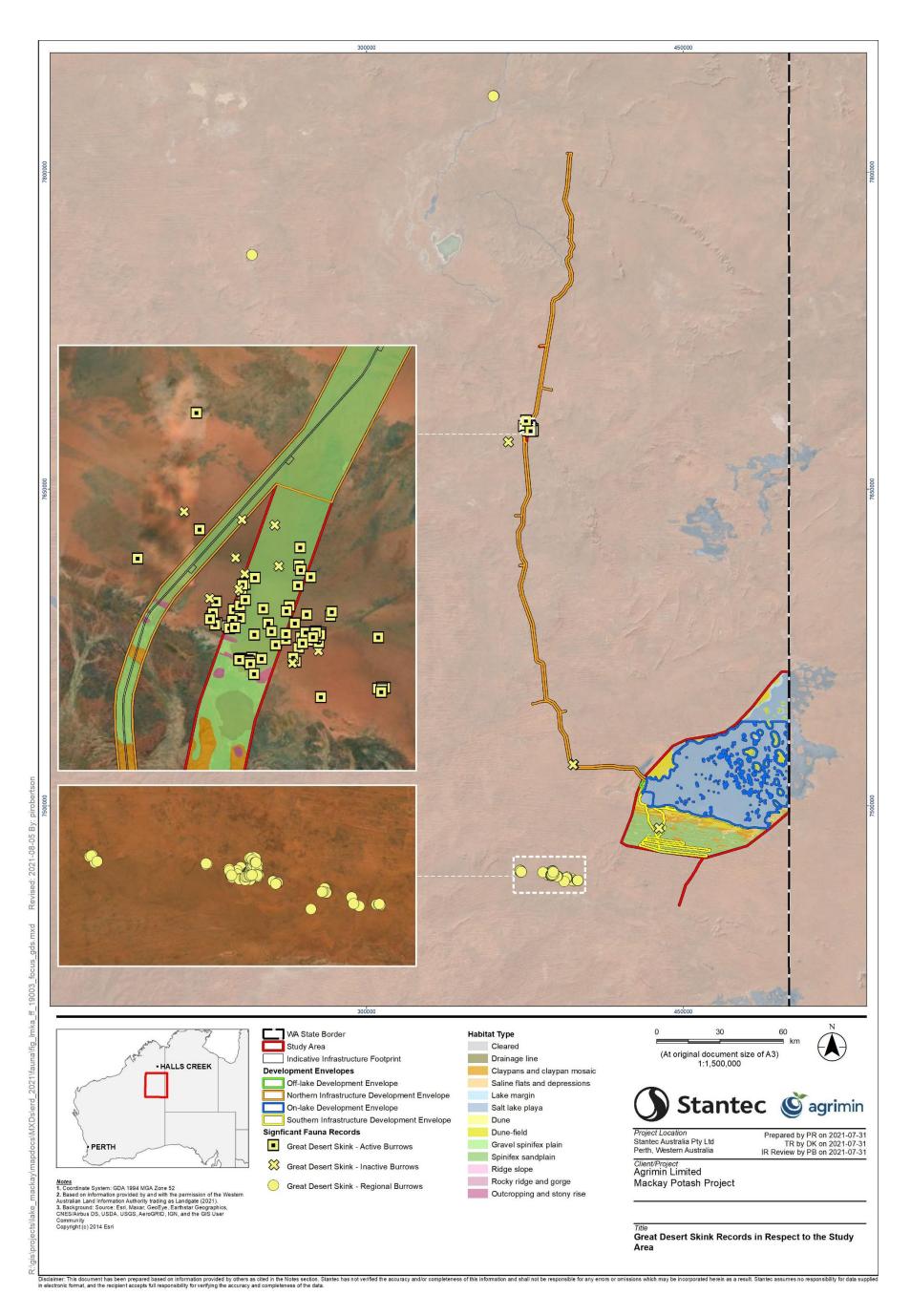


Figure 1-4 Terrestrial Fauna Habitats and Records of Fauna - Great Desert Skink

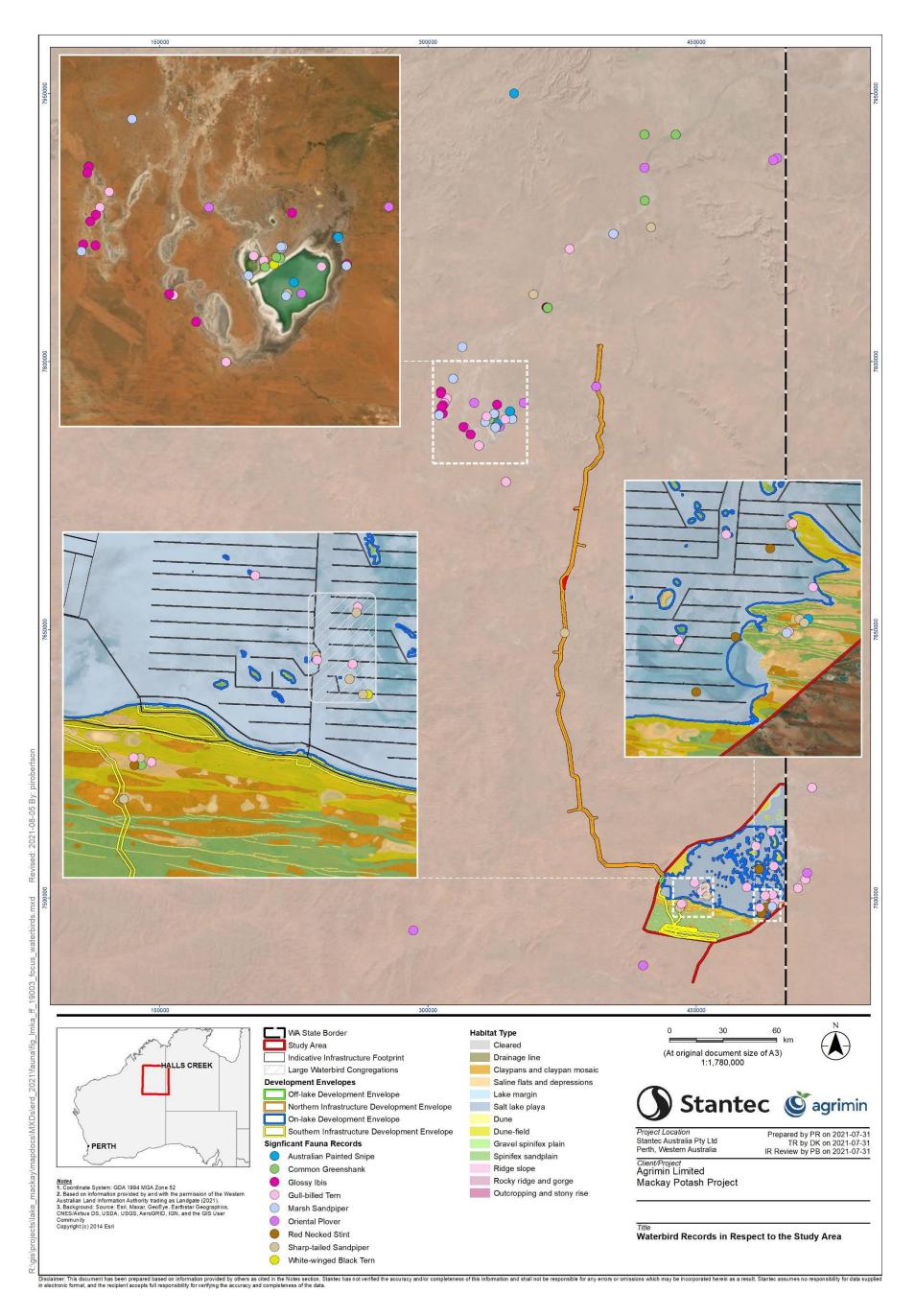


Figure 1-5 Terrestrial Fauna Habitats and Records of Fauna - Waterbirds

1.6 Key Assumptions and Uncertainties

There are a number of possible limitations and constraints that may have impinged on the adequacy of fauna surveys (EPA 2016b). All fauna surveys are limited to some degree by time and seasonal factors; consequently, it is preferable to undertake multiple surveys of an area over a number of years and across different seasons.

Timing, weather and season: The Proposal is located in the Great Sandy Desert and Tanami Bioregions where the activity and therefore the detectability of fauna is driven by climatic conditions, in particular, rainfall events. Surveys for the Proposal have covered multiple years and seasons, however due to the infrequency of rainfall events, and variation in conditions over the large Study Area, not all surveys were able to be conducted in optimal conditions. Furthermore, the large expanse of the NIDE (approximately 350km in length) can result in significant differences in rainfall at the northern extent compared to the southern extent.

In general, based on available satellite imagery and hydrological modelling, the lake appears to inundate to a depth of approximately 2 m in the deepest portions on average once every 5 to 10 years (Stantec 2020a). While two waterbird surveys of Lake Mackay (2001 and 2017) were undertaken by experienced shorebird assessors, the timing of these surveys likely to have missed the following: peak activity, optimal timing for migratory shorebirds and optimal timing for breeding events. However, during a subsequent flood event in early 2021, Stantec were able to conduct a waterbird survey in late March/early April. This survey coincided with optimal timing post rainfall and recorded substantial activity, including tens of thousands of waterbirds, migratory species and breeding events. While the flooding of Lake Mackay is irregular and infrequent, the surveys demonstrate that when in flood, the lake is an important habitat for waterbirds. Additionally, modelling of historical satellite imagery has provided an understanding of how often suitable conditions for waterbirds occur at Lake Mackay.

Adequacy of the survey intensity and proportion of survey achieved: Due to COVID-19 travel and regional movement restrictions, the detailed and targeted survey of the southern portion of the Stantec Survey Area (Phase 2 only) and targeted survey work within the SIDE had to be stopped while underway and was unable to be completed. However, survey effort was sufficient to understand the occurrence of significant fauna with potential to occur in these areas. Additionally, Agrimin have committed to appropriate mitigation measures in areas that could not be surveyed, including, pre-clearance, refinement of footprints where appropriate/possible and relocation of individuals if required.

Remoteness / access constraints: The Study Area is in a remote region with limited access and consequently, not all areas of the Study Area were able to be ground-truthed and sampled. However, survey coverage was adequate to understand the occurrence of fauna assemblages, habitats, and significant species in the area.

Problems with data and analysis: Previous Night Parrot survey work around Lake Mackay had limitations due to conditions (winds), season (dry season), access, or equipment. These limitations were addressed through additional Night Parrot baseline survey work around the lake in 2021.

Operational Phase Environmental Management Approach

The TFMP's management approach is based on a combination of objective-based and outcome-based management provisions (management objectives / actions / targets, as well as trigger and threshold values), aimed to avoid and minimise impacts to known fauna species within the Project Area. This approach has been informed by best practice and experience on similar potash infrastructure projects in Western Australia, that were provided with approval under Part IV of the EP Act.

The following project specific outcomes based and objective-based management provisions are proposed to ensure the environmental objectives can be met and demonstrate compliance with the EPA's Environmental Objectives. The management objectives, as detailed below, are supported by management actions, management targets and a monitoring program that includes clear performance indicators, contingency actions, and adaptive management and reporting protocols.

2.1 Outcome-based Approach

An outcome-based management approach has been established for impacts that have a measurable target, as this approach outlines appropriate indicators for trigger criteria. This provides early warning of potential impacts and threshold criteria, which determine the limit of acceptable impact as well as defining response actions for trigger levels and contingency actions in the unlikely event that the threshold level is reached.

2.1.1 Feral animal presence

An increase in the abundance of feral predators (cats (*Felis catus*), foxes (*Vulpes vulpes*)) may occur in certain areas due to ease of access along established roads, scavenging opportunities relating to increased human activity (e.g. food waste, landfills, etc) and increased road-kill on access roads. Population of fauna of significance, such as Great Desert Skink, Bilby, Night Parrot and the Brush-tailed Mulgara are particularly susceptible to impacts from feral predators.

Following implementation of the Project, feral animals may be attracted to the accommodation village and/or landfill and any freshwater sources. Management actions and monitoring protocols for feral predators will be undertaken, with a specific focus on high risk areas, such as landfill sites, camp site/waste disposal and water storage areas.

While not feral, Silver Gulls are known to predate Banded Stilt chicks during breeding events and have considerable influence on breeding success (Pedler, 2017). Silver Gull populations will potentially increase in response to the same foraging resources as feral predators, and as such mitigations are considered Agrimin proposes to engage traditional owners to assist in managing feral predators, particularly in habitat important to significant species and/or locations where significant species have been recorded.

2.2 Objective-Based Approach

For the management of the following impact pathway, an objective based approach has been taken as it is not measurable and thus, trigger and threshold values are not appropriate. Targets have been defined and management actions outlined in order to achieve the objectives.

2.2.1 Direct mortality or injury from vehicle strike

Direct mortality or injury of significant fauna species may result from operational activities, including vehicle strikes. Observations and records of fauna mortalities will be recorded and reported to DBCA.

Agrimin proposed to design road infrastructure and manage road verges to avoid and minimise roadside water sources and foraging opportunities for fauna and maximise visibility of road edges for drivers. The primary management approach is focused on controlling speed, undertaking travel during daylight hours and strictly adhering to authorised access routes. Agrimin proposed to engage and educate other haul road users of the importance in restricting driving to day-time hours and following speed restrictions outside of these hours.

Excavations, sumps and drill holes will be backfilled or plugged shortly after use to prevent fauna entrapment. Periodic visual observations will be made throughout the trench network for distressed individuals, that will be recovered taking into consideration the safety of personnel.

2.2.2 Direct mortality or injury from wind turbine operations

There is a potential for fauna mortalities or injuries to occur as a result of the operations of the windfarm. Spinning turbine blades have been known to impact birds as they fly past and struggle to navigate through the patterns of the blade movements, or cannot see due to low visibility. Agrimin is committed to avoiding this type of impact and plans to monitor mortalities caused by the wind turbine operations, particularly during lake inundation events that will attract waterbirds, to determine if there is a significant impact and will implement adaptive management measures as required.

2.2.3 Direct mortality or injury from attraction and entrapment in trench network

With the introduction to the landscape of artificial waterbodies (i.e. the trench network and the evaporation ponds) there is a potential for fauna to be attracted to these spaces in times that they would not usually be attracted to the area, meaning the foraging and breeding conditions will not be accurately timed.

The trench network is planned to be excavated to a depth between 5 – 20 m. There is a risk that individuals that might be traversing the On-LDE could fall and become trapped within a trench.

Agrimin is committed to implementing management actions that will avoid these potential impacts.

2.2.4 Disturbance to waterbirds

Potential impacts relating to the creation and operation of the trench network could disturb the behaviour and ecology of waterbird species that access the lake. Potential direct impacts could occur through the construction of trenches and infrastructure on lake during operations and post closure. These potential direct impacts will be mitigated through the exclusion zones surrounding islands features. In total these islands excluded from the Proposal area make up 20,119 ha.

Potential impacts to island habitats through altered hydrology or significant alteration of groundwater will be monitored during the staging of the project's trench development, and minimised through the proposed engineering designs (1 KM spacing, install crossovers) to allow natural surface water flows and flooding in natural depressions of the lake. The monitoring that will be conducted will enable the revisions of subsequent EMPs to incorporate a high degree of adaptive management considerations aimed to further avoid and minimise impacts to waterbirds utilising the lake.

2.2.5 Altered Fire Regime

Risks of fire occur from Anthropogenic sources as a result of operational activities (i.e. vehicle exhausts, generators, power plant, ERT grounds) Altered fire regimes could lead to increased fires, presenting impact pathways for fauna of significance and significant habitats. A concern that Agrimin notes is the importance of old spinifex growth as key habitat for the Night Parrot, which is particularly susceptible to the effects of fire given the time it takes for these hummocks to grow.

Agrimin are committed to avoiding Project related occurrence, intensity, extent, and duration of bush fires in their Project Area. Management actions include ensuring fire response equipment is maintained at site and in vehicles and machinery, strategically placed fire breaks are located around high-risk areas.

3. EMP Provisions

The impact mitigation approach is an objective-based management provision (management actions/targets), to avoid and protect known fauna species within the Project Area (On-LDE, Off-LDE and SIDE), and minimise any direct and indirect impacts (Table 3-1). This approach has been informed by best practice and experience on similar potash infrastructure projects in Western Australia, that were provided with approval under Part IV of the EP Act.

This TFEMP outlines the requirements to avoid, minimise, manage, monitor, and rehabilitate as per the EPA's mitigation hierarchy. Where unacceptable environmental outcomes remain post the implementation to controls measure such as permanent loss of significant species habitat, offsets strategies will be proposed, to meet EPA guidance for Terrestrial Fauna. Offset strategies are presented in the with separate Preliminary Offset Strategy (Appendix C).

Table 3-1: Terrestrial Fauna Management Provisions

| | tor and Objective | Terrestrial Fauna: to protect terrestrial fauna so that biological diversity and ecological integrity are | | | | |
|---------|--|---|---|--|---|--|
| nvironn | nental Values | Twenty-one significant species listed under the WA BC Act and the Commonwealth's EPBC Act ha | ave been confirmed in the Study | / Area including: | | |
| | | • four mammals, | | | | |
| | | 14 birds (9 migratory), and three reptiles. | | | | |
| | | Twelve fauna habitats have been delineated in the Study Area, areas with old spinifex growth have | ve been identified as particularl | y important for Night Pa | rrot habitat | |
| vironn | nental Aspects | TF1: Feral Animals | <u> </u> | , , | | |
| | | TF2: Direct Mortality or injury from vehicle strikes | | | | |
| | | TF3: Direct Mortality or injury from wind turbine strikes | | | | |
| | | TF4: Direct Mortality or injury as a result of attraction to and/or entrapment within artificial on-lake | water hodies (i.e. trenches and | evaporation ponds) | | |
| | | TF5: Disturbance to foraging and/or breeding events for waterbirds | water bodies (i.e. fierieries and | evaporation portasj | | |
| | | TF6: Altered Fire Regime | | | | |
| niect (| | 9 | al alexandra a | | | |
| OJECT (| objectives | The proponent shall manage the implementation of the project to meet the following managements | = | | | |
| | | TF1 Outcome: Minimise adverse impacts to significant fauna as a result of project-related increase | | | | |
| | | TF2 Objective: Avoid injury or death of significant species as a result of Vehicle Strike and Movement | ent | | | |
| | | TF3 Objective: Avoid injury or death of birds as a result of wind turbines | | | | |
| | | TF4 Objective: Avoid injury or death of fauna as a result of attraction and/or entrapment in artificion | | | | |
| | | TF5 Objective: Avoid and minimise adverse impacts to waterbirds as a result of operating the Projection | | | | |
| | | TF6 Objective: Minimise adverse impacts to significant fauna as a result of project-related altered | fire regime | | | |
| | ne-Based | Posponso Actions | Monitoring | Timing/Fraguency of | Poporting | |
| | Trigger Criteria | Response Actions | Monitoring | Timing/Frequency of Monitoring | Reporting | |
| • | Threshold Criteria | Trigger level Actions Threshold Continues Actions | | | | |
| , , | Triange Criteria (in disputtus and to be | Threshold Contingency Actions | De a and an alma anitantha | Caracitica Analysi (in | Incompation Famous Manuals | |
| | <u>Irigger Criteria (indicative and to be</u> revised based on baseline survey): | Preliminary Management Actions: | Record and monitor the presence of feral predators | Sensitive Areas (in proximity to NP & | Inspection Forms - Month detection to be included | |
| - | Records of feral predators | Liaise with traditional owners about the management of feral predators, particularly in | compared to baseline levels and to determine the effectiveness of control | GDS): Monthly | within CAR | |
| | increase by 50% near | habitat important to significant species and/or locations where significant species have been recorded in line with the existing IPA Ranger Programs | | , , | | |
| | accommodation village | | | Proximity to Accommodation and landfill: Monthly | Annual Compliance | |
| | and landfill 2. Any records of feral animals | · · · · · · · · · · · · · · · · · · · | program | | Assessment Report (CAR) | |
| | in sensitive areas (in | Ban all staff and contractors bringing any animals to site Develop any labeled the Reporting Property of the second sight times of fourth. | Internal incident reporting | | Internal incident reportin | |
| | proximity to known NP & | Develop an Incident Reporting Procedure to record sightings of feral Calculated that the state of the s | and investigation process | | and investigation process | |
| | GDS populations) | Educate staff and local traffic on the importance of not feeding feral animals and correct waste disposal as well as reporting all sightings | | | | |
| ١, | Threshold Criteria (indicative and to | Putrescible waste to be stored and disposed of in a way that cannot be accessed by fauna | Include monitoring of Silver Gulls (predator of waterbird | | | |
| | be revised based on baseline | Landfill wastes will be covered promptly, and active waste disposal cells will be fenced to | fledglings including Banded | | | |
| | survey): | exclude large fauna | Stilts) during waterbird | | | |
| | 1. Records of feral animals | Fence or cover permanent water storage | monitoring and implement | | | |
| | increase by 100% from the | Comply with Feral Predator Control Program (Appendix B) | management actions if required. | | | |
| | baseline 2. Records of feral animals increases by 50% from the | Depending on monitoring results indicating an increase / proliferation of feral predators, undertake the following contingency actions: | required. | | | |
| | baseline for two | Trigger Level Actions: | | | | |
| | consecutive years | Identify key areas of increased feral animal population and investigate possible causes, for | | | | |
| | 3. Continued records of feral animals | example poor waste management, artificial ponding of water that attracts fauna | | | | |
| | | Conduct a review of waste management practices and improve practices accordingly | | | | |
| | | Increase frequency and intensity of feral control actions | | | | |
| | | Threshold Contingency Actions: | | | | |
| | | Increase frequency and intensity of feral control actions as per Feral Predator Control Program | | | | |
| | | Investigate and implement additional/alternative control measures to control feral predator populations according to industry best practice | | | | |
| | | Consider Silver Gull baiting in accommodation village and around waste disposal sites according to the decision framework for management of Silver Gull developed by the South | th. | | | |
| | | Australian Government (DoEWNR, 2014). | | | | |

| | ctive-Based | | | | | D !! |
|----|---|---|--|---|---|---|
| D | Management Targets | Management Actions | Monitoring | Timing | Contingency | Reporting |
| | Avoid mortality or injury of individuals of significant fauna species from road strike related to the Project operations | Design haul road and manage road verges to minimise roadside water sources and foraging opportunities for fauna, and maximise visibility of road edges for drivers Develop a Traffic Management Plan Restricting haulage operations to daylight hours. Restrict public access to haul road (Agrimin staff, contractors, and Traditional Owners only) Implement speed limits for all traffic at dawn/dusk and night time in habitats and areas of importance to significant species Driving restricted to designated project roads and tracks. Personnel inductions include speed limit restrictions and noncompliance process Engage and educate other haul road users of the importance in restricting driving to day time hours and following speed restrictions outside of these hours Incident reporting for road strike of fauna | Record mortality events; establish a baseline to determine future mitigation effectiveness and potential 'hot spots' or periods of increased risk (e.g. mating dispersal) requiring particular focus Maintain a fauna mortality register to identify at risk species Monitor local traffic levels Night Parrots: Monitor activity known locations to determine success of mitigation measures and management actions | As required | Identify key areas that road strikes are occurring Implement/decrease speed limits in these areas | Annual Compliance Assessment Report (CAR) Report mortalities to DBCA Internal incident reporting Annual Monitoring report |
| -3 | Avoid mortality or injury of individuals of significant fauna species as a result of strike from wind turbine | Develop an Incident reporting procedure Report incidents of fauna mortalities | Conduct opportunistic waterbird surveys in response to suitable conditions to inform adaptive management. Monitor bird strikes and report on species and numbers | On-going | Investigate mortality rates Implement adaptive management based on findings of investigation | Annual Compliance Assessment Report (CAR) Internal incident reporting and investigation process |
| F4 | Avoid injury or death of fauna as a result of attraction and/or entrapment in artificial water bodies | Approximately 1.5 m high bunding adjacent to trenches Natural trench fill-in and breaking of pond bunds at closure to allow flow of water Develop an Incident reporting procedure Trench network and BMUs will be strategically breached on the completion of brine abstraction to allow natural flow paths to return to the lake. | Implement a baseline monitoring program from inception of the Project over the period of stage 1 (1-2 years) to determine the extent of fauna interactions with on-lake infrastructure. Given the large scale of the Project, monitoring for bird mortality will focus on the evaporation ponds and a representative portion of the trench network. Baseline information to be used to determine the effectiveness and inform the adaptive management proposed to be progressively refined over stages 2-5. Maintain records and report on fauna mortality rates to determine fauna at risk and potential locations of interest. | Once a week for main feed canal and evaporation ponds, once every 6 months for infiltration trenches. | Implement bird deterrents if required. To be informed by the monitoring program Revise plan for the artificial waterbodies post closure depending on the findings of the monitoring. | Annual Compliance Assessment Report (CAR) Internal incident reporting and investigation process Monitoring reports |
| 5 | Avoid and minimise adverse impacts to waterbird foraging and breeding during inundation events as a result of operating the Project | Engineering design and implementation (1 km spacing, install crossovers) of suitable drainage control features. These features will convey flow past On- LDE infrastructure and return flow to its natural path and area of inundation. Staged development of trenches via BMUs to allow for adaptive management of the engineering design. Avoid direct impacts to lake islands Trench network will be outside a suitable buffer zone from island formations (buffer dependent on island size) to avoid indirect | Conduct waterbird surveys during inundation which are sufficient enough to trigger breeding and/or foraging events (i.e. greater than 20% inundation of lake) to monitor for potential impacts and inform management actions if required. | As applicable - during flood events Weekly visual inspections of Turkey's nests | Initially, no access will be permitted to inundated portions of Lake Mackay when more than 20% of the lake is inundated. Results of further waterbird surveys will be used to refine this limit. Further hydrological modelling to inform adaptive management Adaptive management of waterbirds will occur as | Annual Compliance Assessment Report (CAR) Waterbird survey reports |

| Objective-Based ID Management Targets | Management Actions | Monitoring | Timing | Contingency | Reporting |
|--|--|---|--|---|--|
| | impacts (surface hydrology and groundwater drawdown) to island habitats. To avoid disturbance to foraging waterbirds, no access will be permitted to inundated portions of Lake Mackay when more than 20% of the lake is inundated. Similarly, no access will be permitted to inundated claypans or salt pans with the exception of inspections and evaporation ponds. To avoid disturbance to breeding waterbirds, no access will be permitted to islands used for breeding by Banded Stilts or other waterbirds during inundation events | | | operations progress through the various stages according to findings of monitoring. | |
| No human induced fire in the area as a result of implementing the Project To ensure that construction impacts to terrestrial fauna from fire are minimised as far as practicable. | spinifex) Liaise with Traditional Owners about the management of local fire regimes and fire management practices Establish Emergency Response Plan and Emergency Response Team (ERT) Require all personnel to complete a site induction that will include | Monitor daily wind conditions will be taken into consideration when clearing activities are proposed Record Bushfire occurrence within Development Envelope. | Daily during construction On-going | Alert Emergency Response Team Implement Emergency Response Plan Undertake post-fire weed control in the areas affected by the fire. | Internal incident reporting Annual Compliance Assessment Report (CAR) |

Reporting Provisions

4.1.1 Annual Reporting

Agrimin will prepare Annual Environmental Reports (AERs) to be submitted to regulatory authorities. The format of these reports will be consistent with requirements stipulated by individual regulatory authorities.

Annual Compliance Assessment Report (CAR) will also be submitted to regulatory authorities. The report will document compliance with conditions of approval including assessment of compliance with management plan requirements where management plans form part of approval conditions.

4.1.2 Exceedance Reporting

In the event that a management threshold level is exceeded, the DWER and DBCA will be notified within 7 days of identification of the exceedance.

4.1.3 Incident Reporting

All environmental incidents regardless of the scale and nature of the incident will be required to be reported to the Environment and Heritage Manager as soon as practicable.

All environmental near misses and incidents will be recorded within an incident management system that will be developed by Agrimin. Incidents will be recorded by the person/s who cause or identify the event, within 24 hours of the incident occurring.

Incidents will be investigated, and root causes determined and recorded within the incident investigation, within 2 weeks of the incident occurring, or as instructed by the Registered Mine Manager. Where applicable, environmental incidents will be reported to the relevant government agencies by the Environment and Heritage Manager.

In the event of a non-compliance, the cause of the non-compliance will be investigated and reported as an incident. Corrective actions will be developed and recorded, and outcomes monitored. Non-compliance and incident reports will be closed out by the Environment and Heritage Manager and/or the Registered Mine Manager.

Table 4-1 is an example of how incidents might be reported and maintained in a register.

Table 4-1: Incident Reporting Register

| Management Targets | Status report: Management target achieved Management actions implemented |
|--------------------|--|
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Adaptive Management and Review of EMP

5.1 Adaptive Management

It is recognised that there is a level of scientific uncertainty and gaps in our current knowledge relating to a number of significant fauna species protected by the TFEMP, particularly in relation to the abundance and distribution of cryptic species such as the Night Parrot. This makes determination of residual impacts from implementing the Project on local or regional scales difficult to determine with any degree of certainty. Given the long life of the Project, it is reasonable to expect that additional information and knowledge will be gained on the species, and effectiveness of the management actions, that may influence the development of future management approaches.

For the above reasons, Agrimin are committed to ensuring the management approach for significant fauna species is adaptive and responsive to changes in the scientific understanding and advancements in best management practices, as well as changes occurring to the natural environments (e.g. future climatic changes), enabling adjustments to the mitigation measures and monitoring protocols to meet the Project's management objective, over the long-term.

Through this TFEMP, Agrimin are committed to preparing their adaptive management approach through the identification and application of early response indicators to provide information on changes that are precursors to an environmental impact and supports improved understanding and identification of trends in environmental systems. The TFEMP's early response indicators will be developed in the first three years of the Project's life span and will be informed by the analysis of additional data sets and monitoring results collected over this time.

Review processes for the TFEMP will be based on formalised dates during the operational stages of the Project, and will include:

- **Periodic reviews and evaluation of monitoring data or methodology**: Aimed to determine whether site specific monitoring program results indicate that management targets are not being achieved.
- **Increased understanding of the ecological system**: If additional information about the species use of the project area or region is received that would better inform management approaches.
- External changes during the life of the Project (e.g. Project design changes, technical advances or innovation): The relevance and effectiveness of management measures would be considered and reviewed and/or revised following any significant changes to the Project.

Over the first three years of implementing the Project, the baseline data available is considered adequate for Agrimin to commence a review of the effectiveness of the TFEMP management approach. Agrimin is committed to working closely with State and Commonwealth regulatory and conservation agencies over this period to determine the effectiveness of the management plans management actions and targets.

5.1.1 Staged Approach to Waterbird Management

Additional adaptive management is planned to be incorporated into this management plan that will focus on Waterbirds. The staged approach of the development of the Brine Mine Units (BMUs) allows a unique opportunity to enhance the management practices to avoid impacts to waterbirds as a greater understanding of the environment is progressively enhanced.

There are four BMU areas that will be constructed and operated in a staged manner over the 20 year mine life, as shown in Figure 5-1. As the construction and operation of each BMU progresses around the lake in stages, the learnings from previous stages will help to inform revised management controls and actions provisioned within this TFEMP (if the monitoring of the previous stage warrants). This approach will also help to develop a baseline understanding of the lakes important for particular waterbird species.

Once the first BMU has been constructed and is in operation, a Waterbird Monitoring Program will be prepared in consultation with DBCA and to the satisfaction of DAWE, and built into this TFEMP to inform the adaptive management component of the management approach. With each new stage of BMU development, the monitoring information will guide the management of the next stage. The Monitoring Programme will further inform the following:

- Baseline Understanding: including species richness and species abundance;
- Significance of the lake for migratory birds;
- Key areas of the lake used by migratory waterbirds;
- The interactions between birds and trench infrastructure;
- Impact predictions; and
- Early response indicators that might trigger management actions.

5.2 Auditing

The implementation of this plan will be audited by Agrimin, including audit of compliance and performance against all elements of this TFEMP. The review and audit process will:

- identify issues and proposed changes to the TFEMP;
- monitor and evaluate performance against outcome and management provisions and environmental criteria; and
- determine if management, mitigation and monitoring is effective or is required to be adjusted.

5.3 Corrective Actions

All environmental incidents regardless of the scale and nature of the incident will be required to be reported to the Environment and Heritage Manager as soon as practicable.

All environmental near misses and incidents will be recorded within an incident management system that will be developed by Agrimin. Incidents will be recorded by the person/s who cause or identify the event, within 24 hours of the incident occurring.

Incidents will be investigated, and root causes determined and recorded within the incident investigation, within 2 weeks of the incident occurring, or as instructed by the Registered Mine Manager. Where applicable, environmental incidents will be reported to the relevant government agencies by the Environment and Heritage Manager.

In the event of a non-compliance, the cause of the non-compliance will be investigated and reported as an incident. Corrective actions will be developed and recorded, and outcomes monitored. Non-compliance and incident reports will be closed out by the Environment and Heritage Manager and/or the Registered Mine Manager.

5.4 Review

The TFEMP will be reviewed and updated every three years throughout the operational phases of the Project, or as required. Other triggers for a review of this TFEMP include trigger of early warning indicators, addressing items identified during incident investigations, audits or inspections; and new or revised information becomes available

Ongoing monitoring programs will be reviewed on a regular basis, as required, likely to be annual during the initial phases of the Project and as operations begin.

With the premise of management practices detailed in this TFEMP regarding migratory waterbirds based on the results of the Migratory Bird Monitoring Program, a review of this Management Plan will also be triggered at the end of each BMU stage developed as more information is understood about the lake and the way migratory birds interact. As such, a review of this TFEMP will be undertaken in the following years of operation (based on the BMU stages):

- Year 1: end of stage 1 Waterbird Monitoring Program to be developed and implemented.
- Year 2: end of stage 2 of BMU development, stage 3 of BMU commences and learnings from stage 2
 used to update TFEMP
- Year 5: end of stage 3 of BMU development, stage 4 of BMU commences and learnings from stage 3
 used to update TFEMP
- Year 10: end of stage 4 of BMU development, stage 5 of BMU commences and learnings from stage 4
 used to update TFEMP

| The Project is subject to further environmental approvals under other legislation, including assessment and approval by DWER and DMIRS. Agrimin will review this FVEMP (and update if required) to ensure it achieves all identified environmental outcomes |
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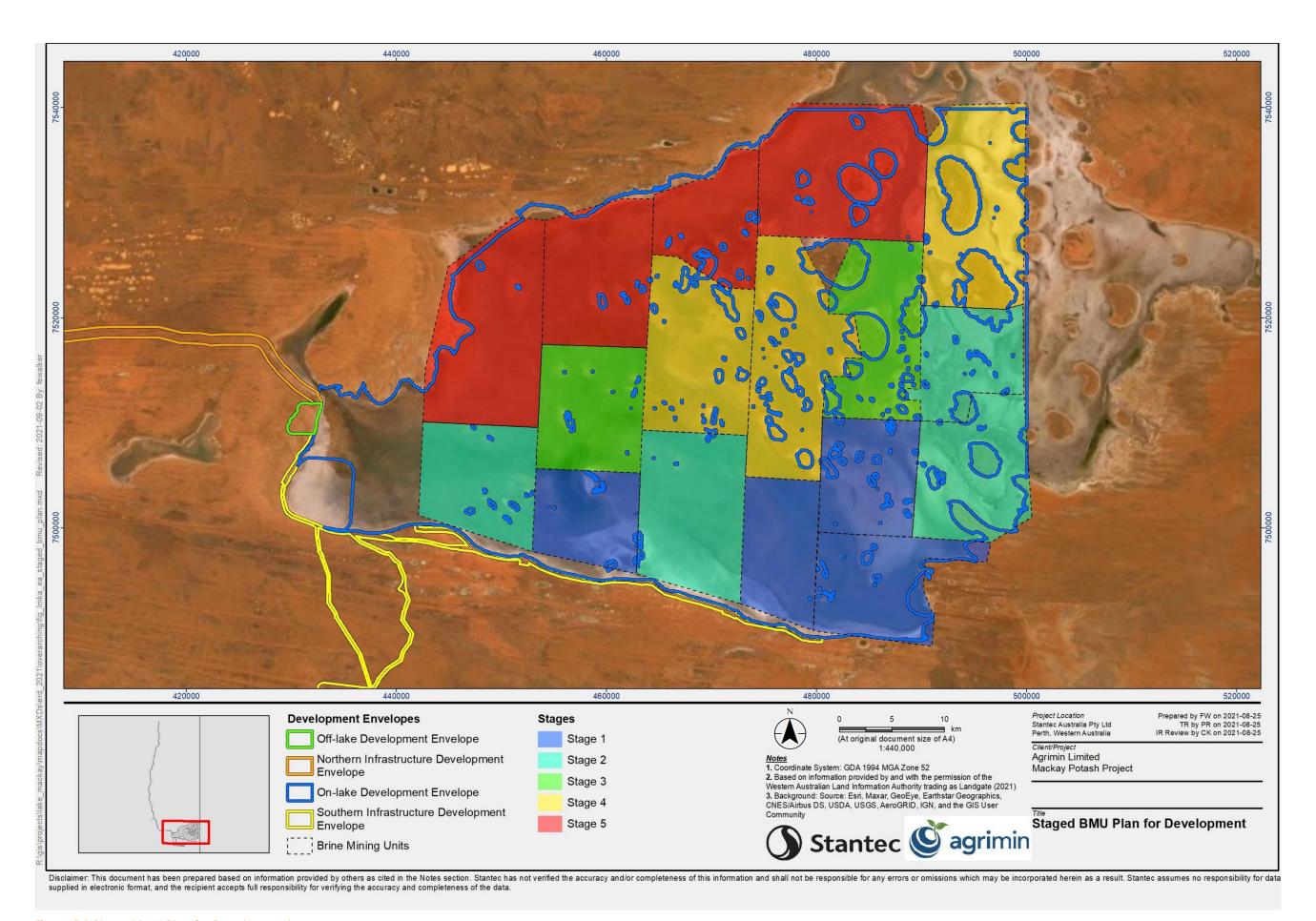


Figure 5-1 Staged BMU Plan for Development

Stakeholder Consultation

Agrimin is committed to ongoing stakeholder communication, engagement and consultation through the planning and approvals phase, as well as the construction, operational and closure phases of the Project. This FVEMP is submitted as a draft for comment and consultation with the EPA.

6.1 Stakeholder Engagement

Agrimin has undertaken extensive community and stakeholder consultation as part of the design and feasibility assessments of the Project. These including presentations and briefings to stakeholder groups including representatives from environment, heritage, community, and Indigenous groups, local, State and Commonwealth Government agencies.

Agrimin maintains a Stakeholder Engagement Register that includes specific consultation with stakeholders and a detailed response to issues is provided. Stakeholder engagement will continue through the construction and operation of the Project and reported through revisions of Environmental Management Plans. Stakeholder consultation will continue to be monitored and reported following revision of the FVEMP as the document is finalised and implemented.

6.2 Key Stakeholders

Key stakeholders have been outlined in Table 6-1.

Table 6-1 Key Project Stakeholders

| Group | Stakeholders | | | | | | |
|---------------------------------------|---|--|--|--|--|--|--|
| Commonwealth Government Agencies | Commonwealth Department of the Environment and Energy (DoEE). | | | | | | |
| State Government Agencies | Environmental Protection Authority (EPA); Department of Mines, Industry Regulation and Safety (DMIRS); Department of Water and Environmental Regulation (EPAS); Department of Water and Environmental Regulation (DWER); Department of Water and Environmental Regulation (DWER – Regulation); Department of Biodiversity, Conservation and Attractions (DBCA); Department of Planning, Lands and Heritage (DPLH); Main Roads Western Australia (MRWA); Department of Jobs, Tourism, Science, and Innovation (DJTSI); Department of Fire and Emergency Services (DFES); Civil Aviation Safety Authority (CASA); and Members of Parliament. | | | | | | |
| Local Government Authorities | Shire of East Pilbara;Shire of Halls Creek; andShire of Wyndham-East Kimberley. | | | | | | |
| Native Title Representative Bodies | Central Desert Native Title Services; andKimberley Land Council. | | | | | | |
| Indigenous Groups | Tjamu Aboriginal Corporation and Kiwirrkurra People; Parna Ngururrpa Aboriginal Corporation and Ngururrpa People; and Tjurabalan Native Title Land Aboriginal Corporation. | | | | | | |
| Environmental Interest Groups | Conservation Council of Western Australia (CCWA); Night Parrot Recovery Team; and Water bird Conservation Group. | | | | | | |
| Industry Groups | Chamber of Commerce and Industry. | | | | | | |

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- Stantec, A. (2020b). Lake Mackay Potash Project: Stage 1 and Stage 2 Surface Water Assessment.
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Appendix A Key Regulatory Obligations

A.1 Key Regulatory Obligations

Legislation relevant to the scope of this EMP, included, but are not limited to, the following legislation:

- Aboriginal Heritage Act 1972
- Australian Heritage Council Act 2003
- Biodiversity and Agricultural Management Act 2007
- Biodiversity Conservation Act 2016
- Biosecurity Act 2015
- Bush Fires Act 1954
- Conservation and Land Management Act 1984
- Contaminated Sites Act 2003
- Dangerous Goods (Transport) Act 1998
- Dangerous Goods Safety Act 2004
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Commonwealth)
- Environmental Protection Act 1986
- Health Act 2016
- Heritage of Western Australia Act 1990
- Land Administration Act 1997
- Local Government Act 1995
- Main Roads Act 1930
- Mines Safety and Inspection Act 1994
- Mining Act 1978
- National Greenhouse and Energy Reporting Act 2007
- Native Title Act 1993
- Occupational Safety and Health Act 1984
- Planning and Development Act 2005
- Rights in Water and Irrigation Act 1914
- Soil and Land Conservation Act 1945
- Waste Avoidance and Resource Recovery Act 2007
- Water Services Act 2012
- Waters and Rivers Commission Act 1995
- Waterways Conservation Act 1976

A.2 Regaultory Approval Requirements

Table A-7-1: Regaultory approvals relevant to the Mackay Potash Project* (this list is indicative and subject to change throughout the life of mine)

| Project Activities | Type of Approval | Legislation Regulating the Activity | Responsible Government Agency | Additional Information |
|---|---------------------------------------|--|--|---|
| Mackay Project Development (including infrastructure corridors) | Grant of Mining Lease | Mining Act 1978 | DMIRS | Grant of mining lease required for mining activities, processing, and mining infrastructure such waste landforms. |
| | Grant of Miscellaneous Licences | Mining Act 1978 | DMIRS | Grant of tenure required for infrastructure. |
| | Native Title Agreement | NT Act | Attorney-General's Department (Cwth) DPLH | Required prior to access and works. |
| | Land Access Agreement | | DPLH | Required prior to access of Proposal, clearing and mining activities. |
| | Aboriginal Heritage Sites | AH Act | DPLH | If the disturbance of any Aboriginal Heritage Sites site is required |
| Mining and Processing | Mining Proposal and Mine Closure Plan | Division 3 of Part IV of the Mining Act 1978 | DMIRS | Required prior for mining and processing activities and supporting infrastructure. |
| | Dangerous Goods Licence | Dangerous Goods Safety Act 2004 (DGS Act) | DMIRS | Required for the storage, transport and use of Dangerous Goods. |
| | Project Management Plan | Mines Safety and Inspection Act 1994 (MSI Act) Mining Safety & Inspection Regulations 1995 | DMIRS | Required prior to construction or mining operations commencing. |
| Clearing of native vegetation | Native Vegetation Clearing Permit | Part V of the EP Act | DMIRS (via administrative agreement with DWER) | Not required if flora and vegetation is formally assessed as a key environmental factor under s38 of the EP Act. |

| Project Activities | Type of Approval | Legislation Regulating the Activity | Responsible Government Agency | Additional Information |
|--|--|--|---|--|
| Processing plant construction and operations | Works Approval | Part V of the EP Act Environmental Protection Regulations 1987 | DWER - Regulation | Required prior to construction of processing and other associated prescribed premises activities |
| | Operating Licence | Part V of the EP Act | DWER - Regulation | Required prior to the commencement of official production and shipment. |
| Construction of trenches, bores for process water supply | Application for 26D Licence | Section 26D RIWI Act | DWER - Water | Required prior to construction of trenches and bores. |
| Groundwater abstraction – brine and process water | Application for a 5C Licence | Section 5C RIWI Act | DWER - Water | Required for groundwater abstraction. |
| Support infrastructure (wastewater treatment) | Application to Construct or Install an Apparatus for the Treatment of Sewage | Health Act 1911 Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations of 1974 | Shire of East Pilbara Department of Health DWER - Regulation | Requirement is dependent upon size and treatments options. |

Appendix B Feral Predator Control Program

B.1 Pest Animals Management Guidelines

The Department of Agriculture, Water and Environment (DAWE) (2017) document, Australian Pest Animal Strategy 2017-2027, is applicable to the control of feral predators at the Mackay Potash Project as it involves human presence in a remote location creating more accessibility, generating waste and potentially causing artificial ponding of water, all of which could attract introduced species to the area. The guideline provides guidance on the following;

- · identification of the stages of pest management;
- roles and responsibilities of pest management;
- national goals for pest prevention; and
- implementation of pest management.

B.2 Potential Impacts

Feral predators, especially feral cats and Red Foxes have contributed to the decline and extinction of many species in Australia (Abbott 2002, Burbidge and McKenzie 1989, Ford et al. 2001, Short and Smith 1994, Woinarski et al. 2014, 2015). Feral predators are also likely to negatively impact upon fauna assemblages, in particular on small and medium-sized native vertebrates in Australia (Dickman 1996). With respect to the Project, predation by feral animals is listed as a key threatening process for the following significant species that have been recorded in the vicinity of the Project:

- Greater Bilby (Macrotis lagotis) (Vu, Vu)
- Brush-tailed Mulgara (Dasycercus blythi) (P4)
- Night Parrot (Pezoporus occidentalis) (En, CR)
- Princess Parrot (Polytelis alexandrae) (Vu, P4)
- Striated Grasswren (inland) (Amytornis striatus striatus) (P4)
- Australian Painted Snipe (Rostratula benghalensis) (En, IA)
- Great Desert Skink (Liopholis kintorei) (Vu, Vu)
- Marsupial Mole spp (P4)
- Gull-billed Tern (Sterna nilotica^) (Mi, IA)

Additionally, when the lake is in flood, the islands on Lake Mackay provide suitable breeding habitat for waterbirds such as the Banded Silt. During these waterbird breeding events, the eggs and chicks are particularly vulnerable to predation.

Feral predators, particularly feral cats are already known to occur within the Project Area and surrounding region. However, the operation of the Project could attract and lead to an increased abundance of feral predators in the vicinity of the Project through an increase of available foraging resources. Foraging resources may include access to putrescible wastes and landfill, freshwater sources but may also result from access to carcasses from road strike.

B.3 Feral and Pest Vertebrate Fauna

Through the consolidated Survey efforts of terrestrial fauna around the Lake Mackay area, eight introduced fauna species were recorded within the Study Area, and which have potential to occur in the Project area, including European Cattle (Bos taurus), the Camel (Camelus dromedarius), Feral Cat (Felis catus), Feral Dog (Canis lupus), Horse (Equus caballus), Red Fox (Vulpes vulpes), House Mouse (Mus musculus), and the Rabbit (Oryctolagus cuniculus). Of particular importance, cats and foxes have been found to pose the greatest risk to the area as predators of significant native species, and so will be addressed in this Feral Predator Control Program (Paltridge and Crossing 2016).

An increase in the abundance of feral predators (cats, foxes) may occur in certain areas due to ease of access along established roads, scavenging opportunities relating to increased human activity (e.g. food waste, landfills, etc) and increased road-kill on access roads. Population of fauna of significance, such as Great Desert Skink, Bilby, Night Parrot and the Brush-tailed Mulgara are particularly susceptible to impacts from feral predators.

Following implementation of the Project, feral animals may be attracted to the accommodation village and/or landfill and any freshwater sources. Management actions and monitoring protocols for feral predators will be undertaken, with a specific focus on high risk areas, such as landfill sites, camp site/waste disposal and water storage areas.

Agrimin proposes to investigate options to engage traditional owners to assist in managing feral predators, particularly in habitat important to significant species and/or locations where significant species have been recorded.

B.3.1 Feral Cat (Felis catus)

Feral cats are now found all over Australia, the same species as domestic cats, however living and reproducing in the wild and hunt and scavenge to survive. Mostly solitary animals with nocturnal behaviour and a carnivorous diet of small mammals, birds, reptiles, amphibians, fish and insects. Since their proliferation, feral cats have threatened the survival of over 100 native Australian animals through predation or competition for food and shelter. This feral species has also been known to carry infectious diseases that could be transmitted to native animals, domestic livestock and humans (DAWE n.d).

B.3.2 European Red Fox (Vulpes vulpes)

Introduced to Australia in 1855 for hunting purposes, the Red Fox has since become a feral found across most of Australia. Mainly active at night, feral foxes are scavengers, who prey on anything available. This introduced species poses a threat to the environment as is preys on ground nesting birds and small to medium sized mammals and often undermines recovery efforts for threatened species. Although the fox presents an additional threat to already declining populations of native animals (Commonwealth of Australia 2010).

B.3.3 Silver Gulls (Chroicocephalus novaehollandiae)

While not feral, Silver Gulls are known to predate Banded Stilt chicks during breeding events and have considerable influence on breeding success {Pedler, 2017}. Silver Gull populations will potentially increase in response to the same foraging resources as feral predators, due to the Project operations (particularly food and waste availability in accommodation village)

B.4 Management Provisions

In line with the DAWE's Australian Pest Animal Strategy 2017-2027, the management actions that will be implemented at the Mackay Potash Project will follow the following stages:

- Prevention
- Eradication
- Containment
- Asset Protection and Monitoring

This Control Program also outlines contingency actions that will be implemented if the actions of the above four stages fail, and monitoring shows increased feral predator population.

The following control measures will be implemented at the site as part of standard controls to control feral predators and provide contingency arrangements should their populations be found to be increasing in the Project Area.

Table C-7-2 Management Actions for Feral Predator Control

| Stage of control | Strategy | Timing | Responsibility |
|---------------------------------|--|------------------------|--|
| | Implement the Feral Predator Control Program which works towards controlling the numbers, of introduced predators within the Project. | Life of Mine | General Manager |
| Prevention | Domestic cats and dogs will be banned at the Project. | Life of Mine | General Manager |
| | Take measures to limit the attraction of introduced fauna to the Project, including proper hygiene and landfill management practices (cover and fence waste disposal sites) | Life of Mine | General Manager |
| Eradication | Investigate options to engage traditional owners to manage feral predators, particularly in habitat important to significant species and/or locations where significant species have been recorded. See Section B.4.1. | Life of Mine | General Manager |
| Containment | Fence landfill areas and secure all waste bins. | Life of Mine | Environmental Manager |
| | Undertake monitoring to determine changes in occupancy rates of feral animals. See Section B.4.2. | Life of Mine | Environmental Manager |
| Asset Protection and Monitoring | Report sightings on introduced fauna to the site environmental department. See Section B.4.3. | Life of Mine | All staff, contractors and site visitors |
| | Make data available to Traditional Owners to contribute to their Management Practices detailed in their Plan for Country | Life of Mine | General Manager |
| | Increase frequency of feral control actions | Only if other | General Manager |
| Contingency | Investigate new opportunities in feral control methods | stages of control fail | General Manager |

B.4.1 Investigate options to engage Traditional Owners

Agrimin plan to investigate options to engage Traditional Owners identified as important and local stakeholders of the Project to participate in feral predator control. Management actions are already underway by Indigenous Ranger groups, Agrimin will participate in and help to facilitate their programs where possible. The Project Area traverses three Indigenous Protected Areas (IPA), including the Ngururrpa and Kiwirrkurra IPAs. Indigenous Protected Areas (IPAs) are voluntarily dedicated by Indigenous groups on Indigenous owned or managed land or sea country. They are recognised by the Australian Government as an important part of the National Reserve System, protecting the nation's biodiversity for the benefit of all Australians.

IPA management plans describe how Indigenous groups 'care for country' using a combination of traditional Indigenous knowledge and contemporary western science. These plans identify an International Union for Conservation of Nature (IUCN) management category to ensure that their management is in line with international standards.

B.4.1.1 Kiwirrkurra IPA – Plan for Country

The Kiwirrkurra IPA is owned and managed by traditional owners through their prescribed body corporate, Tjamu Tjamu Aboriginal Corporation. The area is managed to protect biodiversity and cultural resources, based on Indigenous perspectives of connecting to and looking after country and complemented by Western knowledge and management principles (Tjamu Tjamu Aboriginal Corporation 2014).

The Kiwirrkurra IPA's – Plan for Country sets out management actions to protect both natural and cultural values, and provide a range of economic, educational, health and wellbeing benefits for the community. The priorities for managing country are grouped into four key areas, although these are closely interrelated:

Looking after Culture;

- Looking after Country;
- Keeping our People Strong; and
- Economic Development.

Agrimin proposes to provide support to the IPA's key conservation program of 'Looking after Country', which includes objectives focused on maintaining and improving biodiversity and environmental health across the Kiwirrkurra IPA, through two-way management, including:

- Looking after water places;
- Right way fire;
- Looking after plants and animals, especially threatened species and bush foods and medicines;
- Managing weeds; and
- Managing feral animals: cats, foxes, camels, and rabbits as applicable to this Feral predator Control Program.

These objectives are further supported by the Kiwirrkurra IPA Science and Monitoring Plan (SMP) (Paltridge and Crossing 2016). The SMP provides more detail on some of the management strategies identified in the IPA Plan, particularly the 'Looking after Country' theme. Objectives and actions have been developed to manage, monitor, and reduce key threats, and improve the condition of land within the IPA. A key focus of the SMP is building the capacity of the Traditional Owners to implement the management actions required.

The conservation activities undertaken by the Kiwirrkurra Rangers on their prescribed land specifically address the control of feral predators. Table C-7-3 outlines the management measures implemented in the Kiwirkurra IPA to control feral predators. The plans seek to avoid baiting programs for foxes and cats as they are not so effective (particularly for cats) and is more likely to impact populations of Dingos (the main predator of feral cats).

Table C-7-3 Management measures for feral animals as detailed in the Kiwirrkurra IPA Plan for Country and Science and Monitorina Plan

| cience and Monitoring Plan | | | | | |
|----------------------------|--|--|--|--|--|
| Feral Species | Management Actions | | | | |
| General | Establish >15 permanent 2 ha plots in each Kiwirrkurra Priority Management Zone (PMZ) (of which there are three, Kiwirrkurra, Murruwa and Nyinmi) to conduct annual broadscale monitoring of predators. The monitoring should capture: | | | | |
| | • Frequency of Occurrence of sign of each feral animal species (% of 2 ha plots) in each PMZ. | | | | |
| | Frequency of Occurrence of key threatened species (% of 2 ha plots) in each PMZ. | | | | |
| | Number of feral animals removed through hunting, shooting, trapping and poisoning. | | | | |
| | Impact of feral predators (cats and foxes) on key animal species (e.g. by tracking, analysing scats or checking stomach contents) | | | | |
| | Collect and analyse predator scats from threatened species sites. Record the number of predator scats analysed. | | | | |
| | Number of rangers trained to conduct pest animal control safely, humanely, legally and effectively. | | | | |
| | Provide all Rangers with training in animal welfare and OH&S protocols to ensure all feral animal control is conducted safely, legally and humanely | | | | |
| | Where required, undertake works to minimise feral animal damage. E.g. physical barriers (fencing or rockhole spiders) and/or removal of camels | | | | |
| | Additional measures include: Trial other predator control techniques including leghold trapping and grooming traps in the Kiwirrkurra PMZ | | | | |
| | Monitor Predation Pressure at Bilby and Great Desert Skink burrows using motion-detector cameras to record frequency of predator visitation to burrows, in sites with and without predator control | | | | |

| Feral Species | Management Actions |
|---------------|--|
| Cats | Kiwirrkurra and other Pintupi people historically hunted cats for food and continue to do so today. Anecdotal evidence suggests that this hunting, along with regular patch burning, may be a factor in the continued survival of threatened species near these communities. The key management action for feral cats is to integrate Traditional Hunting skills with new control technologies to produce a multi-skilled feral animal strikeforce team who will undertake traditional hunting of feral cats, rabbits and foxes with a focus on priority Bilby and Great Desert Skink sites in the Kiwirrkurra Priority Management Zone (PMZ). Record traditional hunting results. Additional measures include: Introduce tools to improve the efficiency of cat hunting, such as expert dog training for hunters with hunting dogs |
| Fox | Integrate Traditional Hunting skills with new control technologies to produce a multiskilled feral animal strike-force team who will undertake traditional hunting of feral cats, rabbits and foxes with a focus on priority Bilby and Great Desert Skink sites in the Kiwirrkurra Prioirty Management Zone (PMZ). Record traditional hunting results. |
| | Additional measures include: Continue to explore methods of fox control that don't affect dingo populations such as tracking foxes to dens and targeting these with baits, bait deployment via fox-specific bait stations and conducting ground baiting in areas at least 20 km from water where dingoes are generally absent |

B.4.1.2 Ngururrpa Aboriginal Corporation – IPA (Plan for Country)

The longest stretch of road corridor (approximately 220 km) supporting the Project is located within the Ngururrpa Native Title Determination Area. The Ngururrpa IPA was formally launched on 6 May 2021.

Located within the Great Sandy Desert bioregion and comprising of a network of sandplains and dunefields, Ngururrpa IPA is known to contain a number of state and nationally listed threatened species, including the EPBC Act listed Night Parrot, Greater Bilby, and Great Desert Skink. The IPA is connected to IPAs in the north, south, and east, contributing to a contiguous network of protected areas in the region. On ground management will be undertaken by Indigenous rangers according to the Ngururrpa Indigenous Protected Area Plan for Country 2019-2024.

The plan outlines 12 targets and priorities that management actions will address:

- Cultural knowledge & sites;
- Kids (young people);
- Rangers;
- Tourism:
- Bush foods and medicine:
- Burning country right way;
- Special animals;

- Water places;
- Outstations, camps & water bores;
- Resources (buildings, vehicles, equipment);
- Mining and exploration; and
- Feral animals and weeds as applicable in this Feral Predator Control Program.

Integrating the management practices of this Plan for Country with Agrimin's Feral Predator Control Program is beneficial for all of the Ngururrpa priorities, two in particular; rangers and feral animals. By undertaking the monitoring and management measures detailed in this Program, results can be used to inform further development of the Ngururrpa Plan for Country and help Rangers to plan and undertake their work.

B.4.2 Monitoring

Agrimin plan to monitor feral animal presence in and around their operations as part of their Control Program. The data that is collected from this monitoring will help to inform and update management actions as well as contribute to the IPAs' Plan for Country management and monitoring detailed in Section B.4.1. Agrimin's monitoring program will focus on recorded sightings of feral animals in key areas.

Prior to and/or during construction of the Project, a baseline value of feral animal occupancy will be obtained. The monitoring program will then aim to record and monitor the presence of feral predators compared to the determined baseline levels to determine the effectiveness of the Feral Predator Control Program.

Monitoring will involve the use of camera traps that will be setup at potential impact areas including the accommodation village, landfill and other areas in close proximity to operations where there is potential for feral predator access to water, food or shelter. Camera traps will also be set up in areas where control programs have been implemented to assist with determination of effectiveness of the programs (Robley 2010). If the results of monitoring indicate an increase / proliferation of feral animals, management actions will be reviewed and if required, the contingency actions detailed in Table C-7-2 will be implemented.

B.4.3 Opportunistic visual observations

Site personnel and contractors will be required to record sightings of feral predators at the site, including date, time, location and species. Those observations will be considered in relation to the annual monitoring results, to inform management of site activities.

B.4.4 Employee education

Site personnel and contractors will be trained at induction. Training will include the identification of species considered feral predators, the measures detailed in this Feral Predator Control Program, the importance of and responsibility of individuals to implement the above mitigation measures and reporting of feral predators.

B.4.5 Complaints management

A complaints management system will be implemented at the site. The system will, at a minimum, record:

- the number and details of complaints received concerning the presence of feral predators in the Project's surrounding areas (such as an increase in the presence of these species at the Balgo or Kiwirrkurra communities)
- any action taken in response to the complaints to reduce or eliminate the risk of future events.

A notice will be erected at the site entrance providing contact details of the person to be contacted regarding any complaint (e.g. Site Manager).

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Appendix C Preliminary Offset Strategy



PREPARED FOR AGRIMIN LIMITED

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| 1.0 | 06/08/2021 | Draft for Client Issue | LJ | MS | PT | PT |
| 2.0 | 23/08/2021 | Final for Submission | LJ/CK | MS | PT | PT |

Executive Summary

Agrimin Limited (Agrimin) proposes to develop a greenfields potash fertiliser operation, the Mackay Potash Project (the Project or Mackay Potash Project), approximately 490 kilometres (km) south of Halls Creek, adjacent to the Western Australia (WA) and Northern Territory (NT) border.

The purpose of this preliminary offset strategy (Offset Strategy or Strategy) is to support the assessment of the Proposal undertaken by the Western Australian Environmental Protection Authority (EPA) under Part IV of the Environmental Protection Act 1986 (EP Act), and by Commonwealth's Department of Agriculture, Water and the Environment (DAWE) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). This document should be read in conjunction with the Environmental Review Document (ERD) submitted 10 September 2021.

Following Decision Making Authorities (DMAs) review and commentary of the first draft of the ERD provided to Agrimin on 9 March 2021, Agrimin understands the key residual impacts and offset requirements that were raised by the DAWE specifically relate to Matters of National Environmental Significance (MNES). It is noted that no State based comments were received during the review.

Agrimin understands its obligations to offset the significant residual impacts of the Proposal that may remain after the mitigation hierarchy of avoidance and minimisation has been implemented and applied within the management framework.

Since the time of submitting the first draft of the ERD, further fauna and flora survey work has been conducted to characterise the environment and inform the next revision of the ERD. The outcomes of these surveys have allowed Agrimin to further identify opportunities to apply the EPA's mitigation hierarchy to avoid and minimise potential impacts on MNES and State listed species, and thereby addressing a large number of the key DMA comments.

Furthermore, the proponent-led avoidance measures that have been implemented demonstrate Agrimin's on-going commitment to protecting the environmental values of the Great Sandy Desert region. These have included:

- Realigning the haul road corridor and the Northern Infrastructure Development Envelope (NIDE) to avoid the Yagga Yagga Great Desert Skink population. This has resulted in the closest known active burrow being at least 300 m away from the development centreline, exceeding the distance the species tends to travel from a burrow while foraging (<200m). This realignment avoids bisecting the core of the described population with a high density of recorded burrows;
- Reducing the width of the haul road and not permitting borrow pits in this sensitive area;
- Utilising existing cleared areas where possible; 30% of the haul road is on existing cleared track;
- Clearing will only be permitted in approved ground disturbance areas. Where possible, clearing and earthwork disturbance will be limited; and
- Night-time travel relating to the Proposal will not be permitted (removing a key impact pathways on nocturnal conservation significant species).

Despite Agrimin's efforts to identify and implement effective control measures, it has been concluded that the Proposal may still result in a residual impact to the conservation significant Night Parrot through the clearing and removal of important habitat located in the Proposal's linear infrastructure corridor.

Therefore, Agrimin has developed this Offset Strategy as part of the public review process of the ERD to counterbalance the potential significant residual risks associated with clearing within the NIDE. The Offset Strategy has been prepared in accordance with the Commonwealth's Environmental Offsets Policy 2012 (SEWPaC 2012), and where required, the WA EPA's Environmental Offset Policy 2011 (Government of Western Australia 2011) and WA Environmental Offsets Guidelines 2014 (Government of Western Australia 2014).

Noting the above, the objective of this Offset Strategy is to outline the potential residual impact to the Night Parrot and propose appropriate offsets. The Strategy will:

- Outline proposed measures to avoid, mitigate, manage and monitor significant impacts to the Night Parrot;
- Describe significant residual impacts to the Night Parrot, including the estimated quantum of impacts;
- Estimate the total quantity of offsets that may be required to meet regulatory guidelines using the Commonwealth Offsets Assessment Guide (Australian Government 2012); and

• Outline the proposed strategy to offset the Proposal's significant residual environmental impacts on the Night Parrot in accordance with State and Commonwealth environmental offsets policy and guidance.

In accordance with State and Government offset polices, the Offset Strategy proposes the development of a Governance Fund Model allowing for offset funds to be distributed directly conservation programs (including research initiatives) to local Indigenous rangers who currently undertake on-ground conservation management within their respective Indigenous Protection Areas (IPA). Justification for this approach is provided in Section 5, noting:

- On-ground management, including rehabilitation, revegetation and restoration of existing Department of Biodiversity, Conservation and Attractions (DBCA) managed land, and
- The proposed offsets have been selected to be permanent, achievable, and provide a long-term strategic outcome that benefits both the environment and the land manager.

The Offset Strategy will be finalised following comments from regulators and to meet the approval conditions imposed by the respective State and Commonwealth Ministers for Environment.

Abbreviations

| Agrimin | Agrimin Limited |
|----------|--|
| CEMP | Construction Environmental Management Plan |
| СМСР | Conceptual Mine Closure Plan |
| Cwth | Commonwealth |
| DAWE | Commonwealth Department of Agriculture, Water and the Environment |
| DMA | Decision Making Authority |
| EP Act | Environmental Protection Act 1986 |
| EPA | Environmental Protection Authority |
| EPBC Act | Environment Protection and Biodiversity Conservation Act 1999 |
| ERD | Environmental Review Document |
| ESD | Environmental Scoping Document |
| FVEMP | Flora and Vegetation Environmental Management Plan |
| ha | hectare |
| km | kilometre |
| m | metres |
| MNES | Matter of National Environmental Significance |
| NIDE | Northern Infrastructure Development Envelope |
| NT | Northern Territory |
| Off-LDE | Off Lake Development Envelope |
| On-LDE | On Lake Development Envelope |
| SEWPaC | Department of Sustainability, Environment, Water, Population and Communities |
| SIDE | Southern Infrastructure Development Envelope |
| TFEMP | Terrestrial Fauna Environmental Management Plan |
| WA | Western Australian |

Agrimin Limited

Offset Strategy

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Introduction

1.1 Project Overview

Agrimin Limited (Agrimin) proposes to develop a greenfields potash fertiliser operation, the Mackay Potash Project (the Project or Mackay Potash Project), approximately 490 kilometres (km) south of Halls Creek, adjacent to the WA (WA) and Northern Territory (NT) border (Figure 1-1).

The Project involves the extraction of brine from a network of shallow trenches established on the surface of Lake Mackay. The brine will be transferred into evaporation ponds for the precipitation of salt which will be harvested and then processed to produce a potash fertiliser product. Disturbance of up to 15,000 hectares (ha) of the lake's surface and clearing of approximately 1,500 ha of native vegetation are required for Project development.

The Project is remote and extensive (263,675 ha) and therefore four development envelopes have been defined. The following terms are used throughout the FVEMP (Figure 1-1):

- Study Area refers to the boundary within which all investigations and field surveys were undertaken.
- **Development Envelopes** the boundary within which the elements of the Project are situated. The development envelopes occur entirely within the Study Area and comprise four components that make up the Project. The Project includes disturbance of up to 15,000 hectares (ha) of the lake's surface and clearing of approximately 1,500 ha of native vegetation. The proposed extent of the physical and operational elements includes four development envelopes (Figure 1-1):
 - On-lake Development Envelope (On-LDE): On-lake development of trenches, extraction of up to 100 GL/a of brine, and solar evaporation and harvesting ponds for potash salts, including ground disturbance of approximately 15,000 ha with the 217,261 ha On-LDE.
 - Off-Lake Development Envelopes (Off-LDE): Off-lake development of a processing plant and associated site infrastructure, including access roads, accommodation camp, airstrip and solar farm, including clearing of approximately 200 ha of native vegetation within the 688 ha Off-LDE.
 - Southern Infrastructure Development Envelope (SIDE): Development of borefield, water pipeline and access tracks for abstracting up to 3.5 GL/a of processing water and off-lake access to Lake Mackay including clearing of approximately 300 ha of native vegetation within the 11,799 ha SIDE.
 - Northern Infrastructure Development Envelope (NIDE): Haul road for trucking potash production to Wyndham Port, including clearing of approximately 1,000 ha of native vegetation within the 33,928 ha NIDE.
- **Proposal area**: The combined area in which the four development envelopes are contained.
- Indicative Footprints the proposed Indicative Footprints (IFs) occur entirely within the Proposal Area and refers to the area that is proposed to be directly disturbed by the Proposal (e.g. clearing of native vegetation). The layout of the IF may be subject to change, however, total disturbance will not exceed the maximum extent of disturbance for each Development Envelope as presented in the Environmental Review Document (ERD). Proponent-led avoidance and minimise measures has been implemented where possible to reduce and minimise potential impacting on areas of high ecological or heritage value through the detailed design of the indicative footprints.

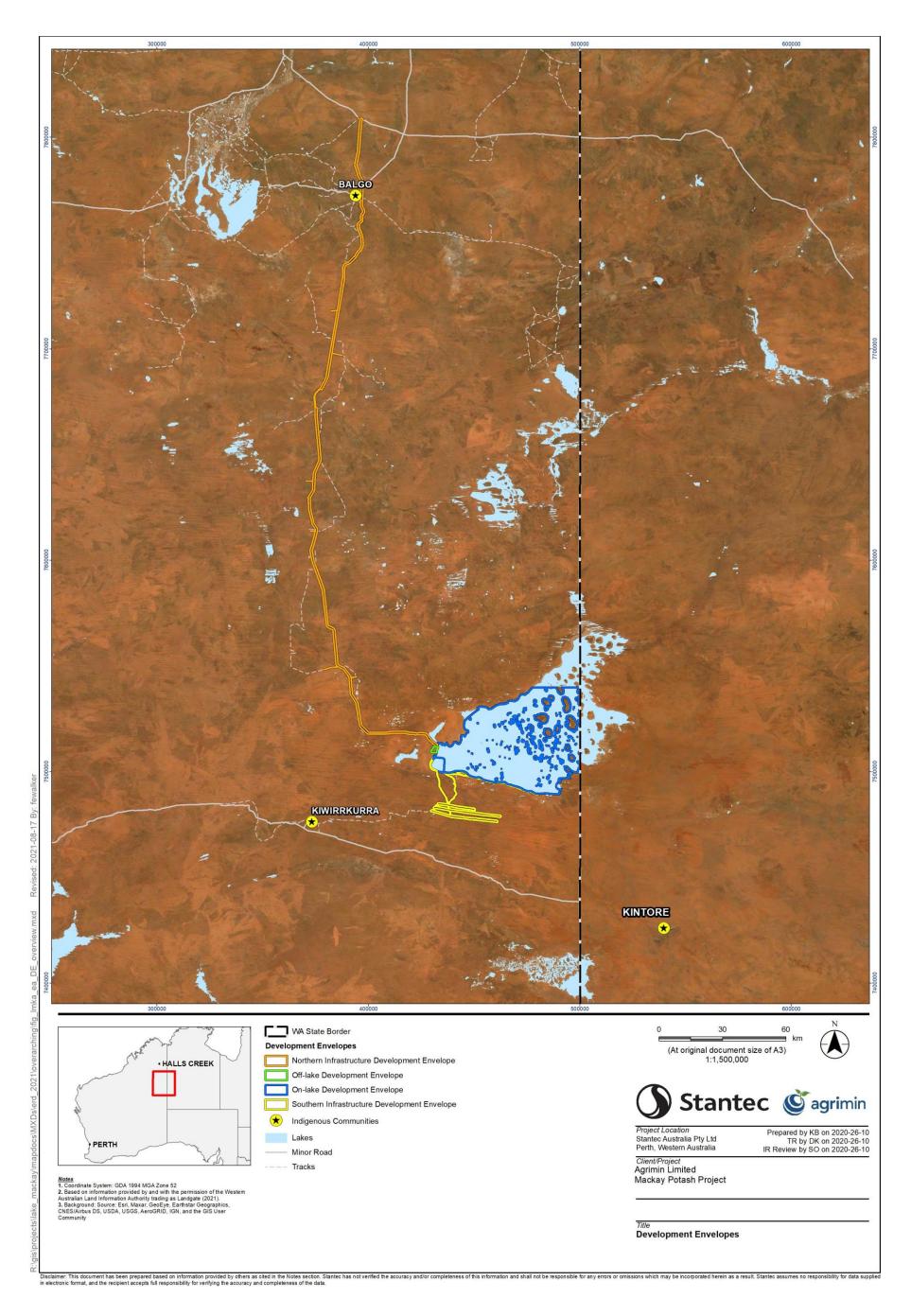


Figure 1-1 Overview of Mackay Potash Project, Proposal area and Development Envelopes

1.2 Purpose and Scope of Report

The purpose of this preliminary offset strategy (Offset Strategy or Strategy) is to support the assessment of the Proposal undertaken by the Western Australian Environmental Protection Authority (EPA) under Part IV of the Environmental Protection Act 1986 (EP Act), and by Commonwealth Department of Agriculture, Water and the Environment (DAWE) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). This document should be read in conjunction with the Environmental Review Document (ERD) submitted 27 November 2020.

Following a review of the first draft of the ERD by Decision Making Authorities (DMAs) in March 2021, the Commonwealth DAWE highlighted key residual impacts and offset requirements related to Matters of National Environmental Significance (MNES). This Offset Strategy directly addresses comments provided by DAWE specifying that a strategy is required to define the potential residual significant impact and proposed offsets; outline proposed monitoring and management measures, and conservation mechanisms; and describe how the proposed environmental offsets meet the requirements of the Commonwealth's Environmental Offsets Policy 2012 (SEWPaC 2012).

It is noted that no State based comments were received. Nonetheless, this Offset Strategy has also taken into regard the requirements of the WA EPA's Environmental Offset Policy (Government of Western Australia 2011) and WA Environmental Offsets Guidelines 2014 (Government of Western Australia 2014).

The only MNES identified with the potential to experience significant residual impacts after avoidance and mitigation measures have been applied is the Night Parrot (*Pezoporus occidentalis*). The scope of this Offset Strategy therefore specifically addresses the impact on the Night Parrot through the clearing and removal of important habitat located in the Proposal's linear infrastructure corridor within the NIDE. The Strategy will:

- Outline proposed measures to avoid, mitigate, manage and monitor significant impacts to the Night Parrot;
- Describe significant residual impacts to the Night Parrot, including the quantum of impacts;
- Estimate the total quantity of offsets that may be required to meet regulatory guidelines using the Commonwealth Offsets Assessment Guide (Australian Government 2012); and
- Outline the proposed strategy to counterbalance the Proposal's significant residual environmental impacts on the Night Parrot in accordance with State and Commonwealth environmental offsets policy and guidance.

2. Impact and Mitigation Hierarchy

The EPBC Act Environmental Offsets Policy states that offsets will not be considered until all reasonable avoidance and mitigation measures are considered. Section 7.6.3.2 of the ERD details the measures proposed to avoid, mitigate, manage, and monitor potential impacts to the Night Parrot, with the key measures summarized in

Table 2-1.

Table 2-1: Proposal Impact and Mitigation Hierarchy

| Key Proposal modification | Impact: Night Parrot (EN, CR): loss of individuals and / or habitat loss, fragmentation, or |
|------------------------------|--|
| Avoid | 30% of the haul road will be constructed on the existing cleared track reducing total clearing Clearing will only occur in approved ground disturbance areas Avoid clearing old growth spinifex and primary foraging habitats where possible (as identified by the fine scale mapping) After implementing stringent proponent-led avoidance measures including the realignment of the Haul Road, clearing will be restricted to a maximum of 23.55ha of old growth spinifex (0.20% of the habitat found within the Study Area) critical to the survival of the species No evidence of roosting or breeding has been detected within the Study Area, however Agrimin will avoid breeding season during construction |
| Mitigate | Where possible, minimise disturbance to primary habitats of significant species Clearing activities will only be carried out during daylight hours Buffer and avoid any confirmed roost sites, if known and encountered |
| Manage | Comply with Flora and Vegetation Environmental Management Plan (FVEMP) Comply with Terrestrial Fauna Environmental Management Plan (TFEMP) Comply with Construction Environmental Management Plan (CEMP) Comply with Mine Closure Plan (MCP) Develop a Ground Disturbance Permit System and Procedure Develop a Feral Predator Control Program Develop a Fire Management Procedure Develop an Emergency Response Plan Develop a Traffic Management Plan Develop a Hot Works Permit System Develop an Incident Reporting Procedure |
| Monitor | Conduct a pre-clearance survey (four weeks prior to clearing) within Indicative Footprint using acoustic recorders where primary roost habitat has been identified from the fine scale desktop habitat mapping and from ground truthing Monitor any confirmed roost sites (if encountered) to determine success of mitigation Monitor foraging activity at known locations to determine success of mitigation Monitor vegetation heath / hydrology along drainage features within suitable Night Parrot habitat to determine success of mitigation Internal incident reporting and investigation process |
| Rehabilitate | Rehabilitation of temporary cleared areas |

Significant Residual Impacts to the Night Parrot

After the hierarchy of control measures has been implemented, the Proposal may still cause a residual impact to the Night Parrot through loss of individuals and/or habitat loss, fragmentation, or modification from native vegetation clearing.

The following sections describe the assessment of the quantum of impact for the Night Parrot.

3.1 Quantum of Significant Residual Impact to Night Parrot

3.1.1 Profile of Species

The Night Parrot is a small, green, highly cryptic parrot. They are primarily ground-feeding and inhabit remote arid and semi-arid Australia. The species roosts in clumps of dense vegetation, primarily long unburnt Triodia hummocks with roost sites tending to be permanent. The species is likely to feed on seeding grasses, forbs, herbs, and succulents, particularly in low-lying areas that are seasonally inundated promoting diverse, seeding ephemerals. Refer to ERD Section 7.6.3.2 for more detailed information about the Night Parrot.

Importantly, the Night Parrot is nocturnal so is unlikely to travel through the vicinity of the haul road during daylight hours when haulage is conducted.

3.1.2 Quantum of Residual Impact for the Night Parrot

The EPBC Act Environmental Offsets Policy and associated guidelines have been used to assess the quantum of residual impact associated with the Proposal and quantify offset requirements. The policy considers an impact on habitat not only in terms of spatial extent (ha) but also considers the relative quality of that habitat. The term 'Quantum of Impact' is used to describe the integrated consideration, and is a numerical value that is calculated as follows:

Quantum of Impact (ha) = Area of impact (ha) x Habitat Quality score

3.1.3 Area of Impact

As detailed in the ERD (Section 7.6.3.2) the loss of primary foraging habitat for the Night Parrot will occur during clearing. Based on fine scale mapping, it is estimated that a total of 11,522 ha of old growth spinifex occurs within the Study Area, of which 646.62 ha (5.61%) occurs within the Proposal area and 23.55 ha (0.20%) occurs within the Indicative Footprint and has the potential to be disturbed.

Therefore, the total area of impact within the Indicative Footprint that should be considered in this offset package is 23.55ha.

3.1.4 Habitat Quality Score

Confirmed Night Parrot foraging calls were recorded within the Proposal area, however roosting sites have yet to be found. Notably, Night Parrot foraging and roosting habitats are not restricted to the Proposal area and are considered well represented in the local and regional contexts

As detailed in the ERD (Section 7.4.1), all habitats within the Study Area are relatively untouched and assessed as being in excellent condition. However, as noted in DAWE's Offsets Assessment Guide, the assessment of quality for threatened species habitat and ecological communities is not simply a scoring of vegetation 'pristineness'. Rather, there are three components that contribute to the calculation of habitat quality: site condition, site context and species stocking rate, see Table 3-1.

Table 3-1 Scoring of Night Parrot Habitat Attributes

| Habitat Attribute | Score | Basis of Score |
|-------------------|-------|---|
| Condition | 9 | This high score reflects the results of habitat mapping in both locations where the species was recorded in broad drainage basins which extend for more than 5 km either side of the NIDE. The proposed clearing contains most, if not all, of the ecological requirements for the Night Parrot, including claypans and claypan mosaic, in association with gravel spinifex |

| Habitat Attribute | Score | Basis of Score |
|---|-------|---|
| | | plain and spinifex sandplain. Both areas supported old-growth spinifex and a high cover of diverse seeding tussocks and herbs, and limited shrubs and trees. Such sites are likely to provide natural protection to old-growth spinifex rings from fire and be productive foraging areas for Night Parrots. (ERD Section 7.6.3.2). |
| Context | 9 | It is acknowledged that the species is likely to occur widely in other suitable habitats in the landscape. However, this score reflects the results of habitat mapping which indicates the proposed clearing area likely represents important habitat for Night Parrot in the Study Area, due to the presence of mosaic habitats in broad drainage basins (ERD Section 7.6.3.2) |
| Stocking Rate | 6 | The Night Parrot was recorded foraging from two locations 25 km apart via four acoustic units (two at each location) within the NIDE. The foraging calls were detected during long-term deployments after Phase 2 of the Stantec 2020 Survey, which occurred after rainfall. No calls were recorded at these same locations during the Phase 1 or during Phase 2 survey which suggests the species was not roosting in the area. At least three individuals were estimated at each location. These individuals represent the 6th population in Western Australia. Based on current knowledge, the birds appear to be moving through the two areas on a semi regular basis, with activity being highest in the weeks after rainfall (ERD Section 7.6.3.2). A low stocking rate has therefore been applied. |
| Overall Score | 9 | The overall score has been weighted predominantly toward the context of the habitat, as the area contains claypan mosaic in broad drainage channels, likely representing the most important habitat for Night Parrot in the Study Area. |
| Night Parrot Quantum of Impact Calculation | | 23.55ha foraging habitat (refer Appendix A) |

4. Environmental Offsets

Environmental offsets are conservation actions which provide environmental benefits intended to counterbalance the significant residual environmental impacts associated with a Proposal (Government of Western Australia 2014). Offsets differ to mitigation measures in that they are undertaken outside of the area of development/impact (Mine Development Envelope).

Environmental offsets for the Proposal have been developed with consideration of the Commonwealth Government's EPBC Act Environmental Offsets Policy (SEWPaC 2012), and the Principles of the WA Government's Environmental Offset Policy (Government of Western Australia 2011).

4.1 Commonwealth Guidance

The Commonwealth EPBC Act Environmental Offsets Policy (SEWPaC 2012) states that a minimum of 90 percent of offset requirements for any given impact must be met through direct offsets. Direct offsets are defined as those actions that provide a measurable conservation gain for an impacted protected matter. Conservation gain is the benefit that a direct offset delivers to the protected matter, which maintains or increases its viability or reduces any threats of damage, destruction, or extinction.

Deviation from the required 90% will be considered where it can be demonstrated that there will likely be a greater benefit to the protected matter, through increasing the proportion of indirect offsets or where scientific uncertainty is so high that it is not possible to determine a direct offset likely to benefit the protected matter.

Following review of the first draft of the ERD by DMAs, DAWE specifically requested Agrimin to describe how the proposed environmental offsets meet the requirements of the EPBC Act Environmental Offsets Policy. This is demonstrated in Table 5.3.

4.2 State Guidance

The WA Environmental Offsets Policy (Government of Western Australia 2011) requires the following Principles are considered when developing an offset proposal:

- Environmental offsets will only be considered after avoidance and mitigation options have been pursued.
- Environmental offsets are not appropriate for all projects.
- Environmental offsets will be cost effective, as well as relevant and proportionate to the significance of the environmental value being impacted.
- Environmental offsets will be based on sound environmental information and knowledge.
- Environmental offsets will be applied within a framework of adaptive management.
- Environmental offsets will be focussed on longer term strategic outcomes.

Agrimin has considered these Principles in development of this draft Offset Strategy.

Draft Offsets Proposal

In the event that the State and Commonwealth departments determine the residual impacts significant enough to warrant an offset consideration, Agrimin will develop an Offset Proposal based on this Strategy, during the statutory assessment process. The Offset Strategy will be prepared in consultation with relevant Government departments and stakeholder groups to ensure the quantum of offsets is proportionate to the level and significance of the environmental impacts (Principle 3 of the WA Offset Policy). The Commonwealth's Offset Assessment Guide will be used where relevant, to assist the State assessment process in determining the offset quantum for the final Offset Proposal (noting Principle 3 and 4 of the EPBC Offsets Policy).

5.1 Direct Offsets

As discussed in Section 4.1, a minimum of 90 percent of the offset requirements for any given impact must be met through direct offsets.

Habitat mapping in the Study Area indicates the Night Parrot is likely to occur widely in other suitable habitats in the landscape, outside of the Indicative Footprint. Therefore, Agrimin proposes direct offsets focussed on maintaining or increasing the viability of the Night Parrot in habitats located outside of the Indicative Footprint by reducing threats of damage, destruction, or extinction.

The Night Parrot, like other significant species recorded within the Study Area, is impacted by key threatening processes including predation by feral animals, and alteration of habitat by weed spread and fire. As such, the proposed Offset Strategy has great potential to positively impact other fauna species occurring within the Study Area.

5.2 Calculation of Direct Offset Value

A summary of the offset value and proposed direct and indirect offsets is detailed in Table 5-1.

Table 5-1: Draft Offset Summary

| Environmental value (listing) | Total Quantum of Impact | Offset required ¹ | Offset Value (Range) ² | Direct offset area provided | Indirect offset provided | Percentage of offset met |
|-------------------------------|-------------------------------|---------------------------------|--------------------------------------|--|---|-----------------------------|
| Night Parrot Habitat | 23.55 ha | 105 ha | \$81,900 to \$346,500 | On-ground conservation IPA Rangers management | 10% of that Offset Value to Night Parrot research | 100% |

Note 1: Calculated using the Commonwealth Offset Calculator.

Note 2: Based on Pilbara Environmental Offsets Fund 2019/20 base rates of \$780 to \$3300 per ha.

5.3 Draft Offset Strategy

As the Proposal area is located within the State's Extensive Land-use Zone, and the NIDE intercepts three Native Title Determination Areas, it is not possible to direct funds towards land acquisition to be used for direct environmental offset. Agrimin therefore proposes a strategic approach (Principle 6 of the WA Offset Policy) through establishing a managed offset fund within the bioregion to support conservation activities in the relevant Title Areas that support known populations of Night Parrot. A managed fund model is considered an appropriate mechanism to enable funding of a third party to undertake agreed offset actions, such as on-ground conservation management (i.e. feral animal control, fire management and weed monitoring/eradication) and research of the species affected by the Proposal. A draft managed fund model is summarised in Table 5-2.

Managed Fund

Proposed Governance Model

The Offset Proposal's Managed Fund Governance Agreement Model will be developed in consultation with relevant Government departments and stakeholder groups, and include consideration for the following provisions:

- Decision making arrangements;
- Approval requirements set out in the Ministerial conditions;
- Objectives;
- Key offset actions and strategies;
- Rules of expenditure;
- Principle amount;
- Probity standards;
- Reporting requirements that demonstrate how the approval conditions have been met; and
- Legislative requirements.

| Offset Type | Offset Summary | Location |
|-------------------------|--|---|
| On-ground Management | On-ground management - This includes revegetation (reestablishment of native vegetation in degraded areas) and rehabilitation (repair of ecosystem processes and management of weeds, disease or feral animals). The objective of on-ground management actions is tangible improvement to environmental values in the offset area (Government of Western Australia 2014). Agrimin proposes to offset the direct impact to the Night Parrot through on-ground management options in collaboration with Traditional Owner groups. On-ground management is proposed to be implemented throughout the Proposal area and surrounds including remote communities to mitigate and manage impacts from altered fire regimes, spread of weeds and feral animal control, given the potential cumulative impacts from such activities. | Ngururrpa and Kiwirrkurra IPAs Great Sandy Desert Bioregion |
| Research | Research projects - Research project offsets can only be applied under Part IV of the EP Act and must be reasonably related to the impact (Government of Western Australia 2014). | |
| | The research projects will be prepared in consultation with key stakeholders and designed to increase the knowledge base where lacking for significant fauna species located within Proposal area. It will so aim to result in positive conservation outcomes, targeted at improving the management and protection of terrestrial fauna species impacted by the Proposal. | Great Sandy Desert Bioregion |

5.3.1 Indigenous Protected Area

The NIDE traverses three Indigenous Protected Areas (IPA). The locations where the Night Parrot was detected are within two of these IPAs, the Ngururrpa and Kiwirrkurra (Figure 5-1), therefore this Offset Strategy specifically applies to these two IPAs.

IPAs are voluntarily dedicated by Indigenous groups on Indigenous owned or managed land or sea country. They are recognised by the Australian Government as an important part of the National Reserve System, protecting the nation's biodiversity for the benefit of all Australians.

IPA management plans describe how Indigenous groups 'care for country' using a combination of traditional Indigenous knowledge and contemporary western science. These plans identify an International Union for Conservation of Nature (IUCN) management category to ensure that their management is in line with international standards.

Agrimin is of the view that the offset contributions required by this Proposal are provided directly into a regional fund that support both the Kiwirrkurra and Ngururrpa IPA on-ground conservation work. The distribution of these fund can be discussed further relevant parties during the finalisation of the Offset Proposal, which support the principles of the IUCN management category, including:

- Protection of natural ecosystems and promotion of sustainable use must be integrated and mutually beneficial; category VI can potentially demonstrate best management practices that can be more widely used.
- New skills and tools need to be developed by management authorities to address the new challenges that emerge from planning, monitoring and managing sustainable use areas.
- There is also need for development of appropriate forms of governance suitable for category VI protected areas and the multiple stakeholders that are often involved. Landscape-scale conservation inevitably includes a diverse stakeholder group, demanding careful institutional arrangements and approaches to innovative governance.

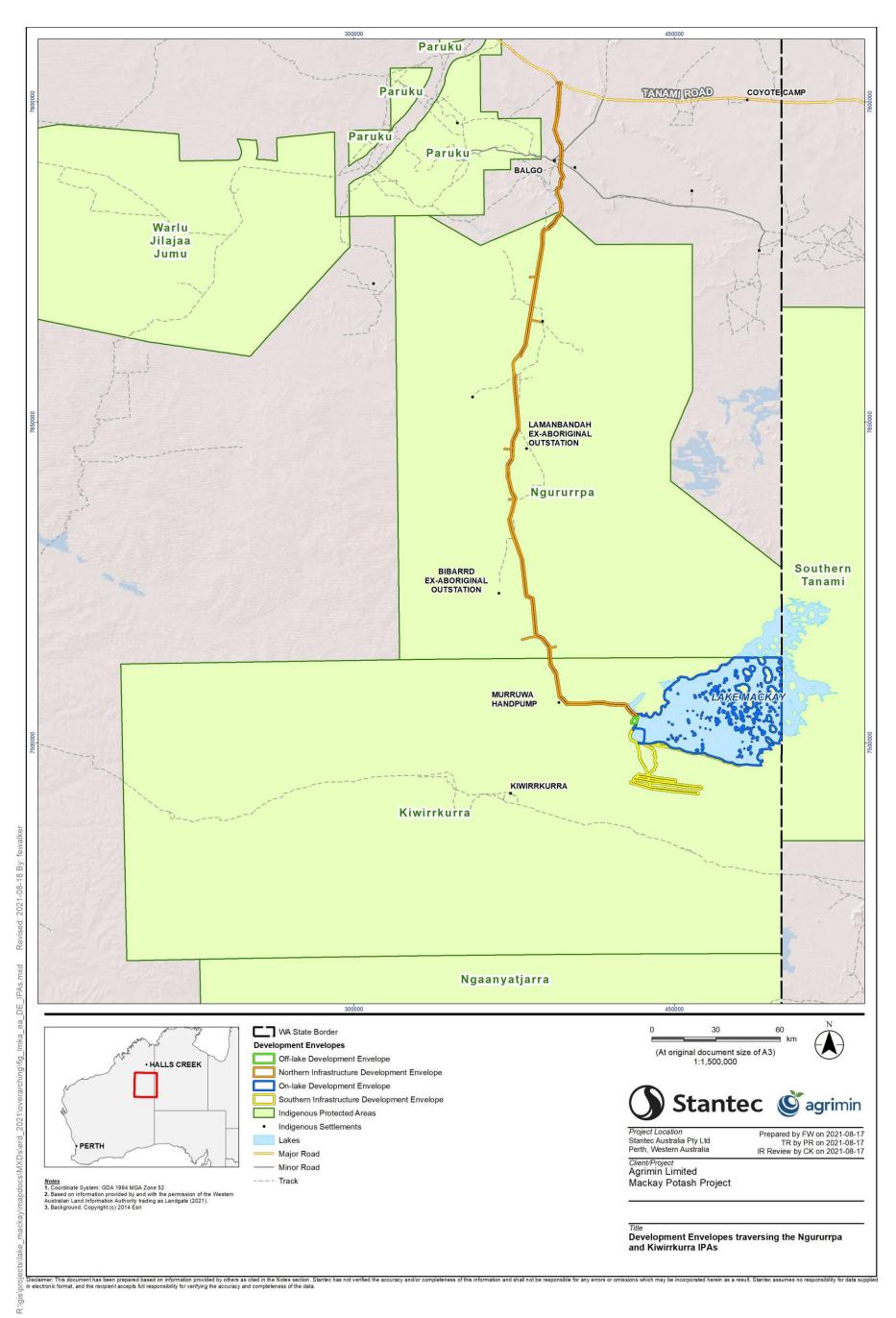


Figure 5-1 Development envelopes traversing the Ngururrpa and Kiwirrkurra IPAs

5.3.2 Tjamu Tjamu Aboriginal Corporation – Kiwirrkurra IPA (Plan for Country)

The Proposal area traverses the remote Kiwirrkurra IPA located in the Great Sandy and Gibson Deserts in the far southeast corner of Western Australia's Pilbara region (Figure 5-1). It extends from the northern edge of Lake Mackay on the Northern Territory border south to Lake Macdonald and approximately 300km to the west, extending beyond Jupiter Well.

The nearest major town is Alice Springs in the Northern Territory, 700kms east on a mostly dirt road. The nearest Aboriginal communities are Kintore (about 150 kms east) and Balgo (400 kms north). Service provision is complex, coming mainly from either Alice Springs or the Ngaanyatjarra region to the south.

The IPA covers the whole of the Kiwirrkurra Native Title determination, an area of 42,857 square kilometres. It therefore contributes about 3.6% to Australia's National Reserve System (based on 2012 protected areas data). It shares its southern boundary with the Ngaanyatjarra IPA and most of its eastern boundary with the Southern Tanami IPA, thereby contributing to a continuous network of protected lands in the region. The Kiwirrkurra IPA increases the level of protection of the Great Sandy Desert bioregion from 15 to 20%, and that of the Gibson Desert bioregion from 36 to 51% (again based on 2012 data).

The Kiwirrkurra IPA is owned and managed by traditional owners through their prescribed body corporate, Tjamu Tjamu Aboriginal Corporation. The area is managed to protect biodiversity and cultural resources, based on Indigenous perspectives of connecting to and looking after country and complemented by Western knowledge and management principles (Tjamu Tjamu Aboriginal Corporation 2014).

The Kiwirrkurra IPA – Plan for Country sets out management actions to protect both natural and cultural values, and provide a range of economic, educational, health and wellbeing benefits for the community. The priorities for managing country are grouped into four key areas, although these are closely interrelated:

- Looking after Culture;
- Looking after Country;
- Keeping our People Strong; and
- Economic Development.

Agrimin proposes to provide support to the IPA's key conservation program of 'Looking after Country', which includes objectives focused on maintaining and improving biodiversity and environmental health across the Kiwirrkurra IPA, through two-way management, including:

- Looking after water places;
- Right way fire;
- Looking after plants and animals, especially threatened species and bush foods and medicines;
- Managing feral animals: cats, foxes, camels, and rabbits; and
- Managing weeds.

These objectives are further supported by the Kiwirrkurra IPA Science and Monitoring Plan (SMP) (Paltridge and Crossing 2016). The SMP provides more detail on some of the management strategies identified in the IPA Plan, particularly the 'Looking after Country' theme. Objectives and actions have been developed to manage, monitor, and reduce key threats, and improve the condition of land within the IPA. A key focus of the SMP is building the capacity of the Traditional Owners to implement the management actions required.

Providing offset funding via a Model Fund will result in the key benefit of building the capacity of the Kiwirrkurra Rangers to undertake conservation activities on their prescribed land. The management approach can be formalised and endorsed in the revision of the IPA's Plan for Country.

5.3.3 Ngururrpa Aboriginal Corporation – IPA (Plan for Country)

The longest stretch of road corridor (approximately 220 km) supporting the Project is located within the Ngururrpa Native Title Determination Area. The Ngururrpa IPA was formally launched on 6 May 2021.

The nearest town to Ngururrpa country is Halls Creek, approximately 500 kms north along the Tanami Road. The IPA is connected to Paruku IPA in the north, Kiwirrkurra IPA to the south, and Southern Tanami IPA to the east, contributing to a contiguous network of protected areas in the region.

Located within the Great Sandy Desert bioregion, the land is comprised of a network of sandplains and dunefields. Prior to 2015, very little was known about the biodiversity of this IPA (Parna Ngururrpa 2019). Since that time, three main surveys have increased knowledge about biodiversity values and the area is known to contain a number of state and nationally listed threatened species, including the Night Parrot and other EPBC Act listed species such as Greater Bilby, Great Desert Skink and Red-tailed Phascogale. However, there is a need to learn more about biodiversity in this area, particularly in less accessible country (Parna Ngururrpa 2019).

The Ngururrpa Indigenous Protected Area Plan for Country 2020-2025 (Parna Ngururrpa 2019) sets out strategies and actions gimed at conserving the Night Parrot and other threatened species, including:

- Rangers to work with elders and scientists to undertaken regular tracking surveys, and other surveys, to monitor fauna.
- Rangers to learn from other ranger groups that have experience in conservation of the same fauna.
- Carefully burn country to maintain good habitat.
- Manage feral animals including cats, foxes, rabbits, and camels.

As with the Kiwirrkurra Rangers, providing offset funding to the Ngururrpa IPA will result in the key benefit of building the capacity of rangers to undertake conservation activities.

5.4 Compliance with EPBC Act Environmental Offsets Policy Requirements

In the process of developing this Offset Strategy, Agrimin has applied the Offset Principles as specified in the EPBC Act Environmental Offsets Policy. As requested by DAWE following their review of the first draft of the ERD March 2021, Table 5.3 demonstrates how the proposed environmental offsets meet the requirements of the policy.

Table 5-3 Compliance with Offset Principles

| Table 5-3 Compilance with Offset Principles | | | | | | | | |
|---|---|--|--|--|--|--|--|--|
| Principle | How this Offset Strategy applies the Principle | | | | | | | |
| Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the protected matter. | Supporting on-ground conservation activities by the Kiwirrkurra and Ngururrpa Rangers has the potential to deliver an overall conservation outcome for the Night Parrot in these IPAs. Additionally, providing funding to Night Parrot research will deliver conservation outcomes for Night Parrot populations in the region. | | | | | | | |
| Suitable offsets must be built around direct offsets but may include other compensatory measures. | The Strategy proposes 90% direct offsets to support on-ground conservation by IPA Rangers and 10% indirect offsets towards Night Parrot research. | | | | | | | |
| Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter. | In Western Australia, the Night Parrot is listed as Critically Endangered fauna under the <i>Biodiversity Conservation Act 2016</i> . Nationally it is listed as Endangered under the EPBC Act, and internationally on the IUCN Red List of Threatened Species as Endangered. The Night Parrot is therefore considered to be facing a very high risk of extinction in the wild. | | | | | | | |
| | The proposed direct offsets to support on-ground conservation activities will enable further protection of the Night Parrot population in the Kiwirrkurra and Ngururrpa IPAs. Indirect offsets directed to Night Parrot research has the potential to discover more populations of Night Parrots in the region. | | | | | | | |

| Principle | How this Offset Strategy applies the Principle |
|---|---|
| Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter. | The offset value has been calculated using the Commonwealth Offset Calculator to ensure the offset proposed is of a suitable size and scale. |
| Suitable offsets must effectively account for and manage the risks of the offset not succeeding. | Risk management strategies will be included in the formalised managed fund agreements to minimise the risk of offsets failing. These risk management strategies may include objectives, targets, monitoring, thresholds and contingencies. |
| Suitable offsets must be additional to what is already required, determined by law or planning regulations, or agreed to under other schemes or programs. | Proposed offsets are in addition to conservation actions already required by relevant legislation. |
| Suitable offsets must be efficient, effective, timely, transparent, scientifically robust, and reasonable. | Proposed on-ground conservation actions will be based upon management plans developed for Kiwirrkurra IPA Rangers, and under development for the Ngururrpa IPA Rangers. |
| Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited, and enforced. | Agrimin proposes a strategic approach (Principle 6 of the WA Offset Policy) through establishing a managed offset fund within the bioregion. A formalised managed fund model is considered an appropriate mechanism to enable funding of a third party to undertake agreed offset actions, such as on-ground conservation management (i.e. feral animal control, fire management and weed monitoring/eradication) and research of the species affected by the Proposal. |

5.5 Stakeholder consultation

The scope, objectives and quantum of the Offset Proposal will be prepared in consultation with relevant Government departments and stakeholders and presented in a Preliminary Offset Strategy as part of the assessment process.

5.6 Finalisation and implementation of offsets

A final Offset Proposal will then be prepared and finalised for implementation during the construction and operational phases of the Proposal.

6. References

Australian Government (2012). Commonwealth Offsets Assessment Guide, 2012.

Government of Western Australia (2011) WA Environmental Offset Policy, 2011.

Government of Western Australia (2014) WA Environmental Offsets Guidelines, 2014.

Paltridge, R., and Crossing, K. (2016). Kiwirrkurra IPA Science and Monitoring Plan 2016-2020. Prepared for Central Desert Native Title Services, 2016.

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Tjamu Tjamu Aboriginal Corporation (2014). Kiwirrkurra IPA – Plan for Country 2014-2019. Prepared by Tjamu Tjamu Aboriginal Corporation and Central Desert Native Title Services, Kiwirrkurra, WA, 2014.



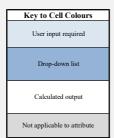
Appendix A Quantum of Impact Calculations

Offsets Assessment Guide

For use in determining offsets under the Environment Protection and Biodiversity Conservation Act 1999
2 October 2012

| This guide relies on Macros being enabled in your brows | ľ | This | guide | relies | on | Macros | being | enabled | in | your | brows |
|---|---|------|-------|--------|----|--------|-------|---------|----|------|-------|
|---|---|------|-------|--------|----|--------|-------|---------|----|------|-------|

| Matter of National Environmental Significance | | | | | | | |
|---|--------------|--|--|--|--|--|--|
| Name | Night Parrot | | | | | | |
| EPBC Act status | Endangered | | | | | | |
| Annual probability of extinction Based on IUCN category definitions | 1.2% | | | | | | |



| | | | Impact calcul | lator | | | | | | | | | | |
|-------------------|---|-----------------------------------|--|-------------------------|-------|----------------------|----------------------------------|--|--|--|--|--|--|--|
| | Protected matter attributes | Units | Information source | | | | | | | | | | | |
| | | | Ecological c | ommunities | | | | | | | | | | |
| | | | | Area | | | | | | | | | | |
| | Area of community | No | | Quality | | | | | | | | | | |
| | | | | Total quantum of impact | 0.00 | | | | | | | | | |
| | Threatened species habitat | | | | | | | | | | | | | |
| Impact calculator | | | The loss of primary foraging habitat for | Area | 23.55 | Hectares | | | | | | | | |
| | Area of habitat | Yes | the Night Parrot will occur during clearing, comprising claypans and | Quality | 9 | Scale 0-10 | ERD Section 7.6.3.2 and 7.4.1 | | | | | | | |
| | | | claypan mosaic, and saline flats and depresssions | Total quantum of impact | 21.20 | Adjusted hectares | | | | | | | | |
| dwI | Protected matter attributes | Attribute relevant to case? | Description | Quantum of imp | oact | Units | Information source | | | | | | | |
| | Number of features e.g. Nest hollows, habitat trees | No | | | | | | | | | | | | |
| | Condition of habitat Change in habitat condition, but no change in extent | No | | | | | | | | | | | | |
| | | | Threatene | d species | | | | | | | | | | |
| | Birth rate e.g. Change in nest success | No | | | | | | | | | | | | |
| | Mortality rate e.g Change in number of road kills per year | No | | | | | | | | | | | | |
| | Number of individuals e.g. Individual plants/animals | No | | | | | | | | | | | | |

| | | | | | | | | | | Offset o | calculat | or | | | | | | | | | |
|----------------------------|---|-----------------------------------|-------------------------------|-------------------|------------------|--|---------|--------------------------------------|-----|--|------------|--|--------------------|-------------|--------------------------|------------------|--|--------------------|--|-----------------|-----------------------|
| | Protected matter attributes | Attribute relevant to case? | Total quantum of impact | Units | Proposed offset | Time horizon | (years) | rs) Start area and quality | | d Future area and quality without offset | | Future area and quality with offset | | Raw gain | Confidence in result (%) | Adjusted gain | Net present value (adjusted hectares) | % of impact offset | Minimum (90%) direct offset requirement met? | Cost (\$ total) | Information source |
| | | | | | | | | Ecological Communit | | | ımunities | | | | | | | | | | |
| | Area of community | No | | | | Risk-related time horizon (max. 20 years) | | Start area (hectares) | | Risk of loss (%) without offset Future area without offset (adjusted hectares) | 0.0 | Risk of loss (%) with offset Future area with offset (adjusted hectares) | 0.0 | | | | | | | | |
| | | | | | | Time until ecological benefit | | Start quality (scale of 0- 10) | | Future quality without offset (scale of 0-10) | | Future quality with offset (scale of 0-10) | e vith de of | | | | | | | | |
| Threatened species habitat | | | | | | | | | | | | | | | | | | | | | |
| ıtor | Area of habitat | Yes | 21.20 | Adjusted hectares | Trust Fund Model | Time over which loss is averted (max. 20 years) | 20 | Start area (hectares) | 105 | Risk of loss (%) without offset Future area without offset (adjusted hectares) | 15% | Risk of loss (%) with offset Future area with offset (adjusted hectares) | 5% 99.8 | 10.50 | 100% | 10.50 | 8.27 | 101.33% | Yes | | |
| Offset calculator | | | | | | Time until ecological benefit | 2 | Start quality (scale of 0- 10) | 6 | Future quality without offset (scale of 0-10) | 5 | Future quality with offset (scale of 0-10) | 7 | 2.00 | 90% | 1.80 | 1.76 | | | | |
| Offs | Protected matter attributes | Attribute relevant to case? | Total quantum of impact | Units | Proposed offset | Time horizon | (years) | s) Start value | | Future value without offset | | | | Raw gain | Confidence in result (%) | Adjusted gain | Net present value | % of impact offset | Minimum (90%) direct offset requirement met? | Cost (\$ total) | Information source |
| | Number of features e.g. Nest hollows, habitat trees | No | | | | | | | | | | | | | | | | | | | |
| | Condition of habitat Change in habitat condition, but no change in extent | No | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | Thi | reatened : | species | | | | | | | | | |
| | Birth rate e.g. Change in nest success | No | | | | | | | | | | | | | | | | | | | |
| | Mortality rate e.g Change in number of road kills per year | No | | | | | | | | | | | | | | | | | | | |
| | Number of individuals e.g. Individual plants/animals | No | | | | | | | | | | | | | | | | | | | |

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