SOUTH32
Worsley Alumina

OFFSET IMPLEMENTATION PLAN

OFFSET 1A – HABITAT PROTECTION
OFFSET 1B – TARGETED ECOLOGICAL RESTORATION

SOUTH32 WORSLEY ALUMINA

DATE: JANUARY 2022
VERSION: 1.0

Table of Contents

Table of Figures

Table of Table

1 INTRODUCTION

1.1 PURPOSE OF THIS OFFSET IMPLEMENTATION PLAN

This Offset Implementation Plan (OIP) has been prepared to support the Biodiversity Offset Plan (BOP) prepared by South32 Worsley Alumina Pty Ltd (Worsley Alumina) for the Worsley Bauxite-Alumina Project (the Project).

1.2 SCOPE

This document has been developed to outline the details of the offset including the specific detail of the proposed property as well as tasks, timing and responsibilities for the offset.

1.3 OFFSET VALUE

In accordance with the *Environmental Protection and Biodiversity Act 1999* (EPBC Act) Assessment guide, this offset provides a benefit to each species as outlined in Table 1. Worsley Alumina will report clearing against this value to ensure total clearing does not exceed the benefit provided by this offset.

Table 1 Area Provided by the Offset

Conservation significant species (EPBC Act[a] and WA BC Act[b])	Offset Balance (ha)
Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*)	982.9
Baudin's black cockatoo (*Calyptorhynchus baudinii*)	870.9
Carnaby's black cockatoo (*Calyptorhynchus latirostris*)	870.9
Chuditch (*Dasyurus geoffroii*)	982.1
Woylie (*Bettongia penicillata ogilbyi*)	309.7
Western ringtail possum (*Pseudocheirus occidentalis*)	317.3
Quokka (*Setonix brachyurus*)	727.1

2 DESCRIPTION OF THE OFFSET

This offset identifies suitable land which represents strategic benefit to the ecological restoration and management of habitat for the Forest Red Tailed, Carnaby and Baudins Black Cockatoo's, chuditch and quokka in priority locations within the range of the species. This offset has been split into two parts, Habitat Protection (1A) and Ecological Restoration (1B) – with the properties identified to account for this offset providing area for both parts. Section 4 will describe for the actions associated with the implementation of each part separately.

2.1 OBJECTIVE OF THE OFFSET

2.1.1 Habitat Protection

The objective of the Habitat Protection portion of the offset (1A) is to:

- Permanently protect land through an appropriate legal mechanism within two years of approval of the Revised Proposal by Commonwealth and State governments;
- commence monitoring and management activities on habitat protection lands for life of impact prior to the commencement of mining, including:
  - foraging resource for black cockatoos;
  - foraging/refuge habitat and linkage for chuditch, quokka and western ring-tailed possum;
  - removal or reduction of threatening processes (e.g. fire, feral predators, weeds); and
- delivery of ecological benefit within five years of initial impact associated with the Worsley Mine Expansion.

2.1.2 Ecological Restoration

The objective of the ecological restoration portion of the offset (1B) is to:

- Permanently protect restored land through an appropriate legal mechanism within two years of approval of the Revised Proposal by Commonwealth and State governments;
- commence ecological restoration activities on Worsley Alumina-owned unmined land prior to the commencement of mining and commencement of ecological restoration on Worsley Alumina-owned mined land within five years of clearing, including:
  - revegetation to provide a foraging resource for black cockatoos and foraging/refuge habitat and linkage for chuditch and quokka;
  - activities to ensure a tangible contribution to ecological linkages;
- commence monitoring and management activities for life of impact immediately (<12 months) following ecological restoration, including:
  - removal or reduction of threatening processes (e.g. fire, feral predators, weeds); and
  - delivery of ecological benefit within appropriate timescales for conservation significant species:
    - 8 years for black cockatoo
    - 10 years for chuditch;
    - 20 years for all other species

Table 2 Offset Sites Summary

	Address	Lot / Plan
	Morts Road, Shire of Boddington	**2209/278** Lot 11 on Deposited Plan 24463
	Bannister Marradong Road, Shire of Boddington	**2076/45** Lot 6636 on Deposited Plan 123932
	Bannister Marradong Road, Shire of Boddington	**2064/464** Lot 5199 on Deposited Plan 119572
	Stagbouer Trail, Shire of Boddington	**1917/68** Lot 388 on Deposited Plan 255829
	Harvey Quindanning Road, Shire of Boddington	**1605/597** Lot 1 on Diagram 60766
	Harvey Quindanning Road, Shire of Boddington	**1605/598** Lot 591 on Deposited Plan 122639
	Harvey Quindanning Road, Shire of Boddington	**1573/93** Lot 633 on Deposited Plan 122638
	Lower Hotham Road, Shire of Boddington	**2188/432** Lot 1 on Diagram 97837
	Lower Hotham Road, Shire of Boddington	**453/168A** Lot 2 on Plan 9255
	Lower Hotham Road, Shire of Boddington	**2107/377** Lot 233 on Deposited Plan 249034

	Address	Lot / Plan
	Harvey Quindanning Road, Shire of Boddington	**1976/23** Lot 5 on Plan 14227
	Gastaldo Road, Shire of Collie	**2862/255** Lot 100 on Deposited Plan 402144
	Gastaldo Road, Shire of Collie	**2153/260** Lot 102 on Deposited Plan 23201
	Niger Road, Shire of Harvey	**1437/753** Lot 2764 on Deposited Plan 138097
	Joint Venture property mine-site rehabilitation (restored from agricultural land to native vegetation	
Area	435 ha (Ecological Restoration) 4,175 ha (Habitat Protection)	
Tenure	Freehold (Worsley Joint Venture)	
Local Government Area	Shire of Boddington, Shire of Collie and Shire of Harvey	
Action Commencement Date	Following acceptance of the Biodiversity Offset Plan in accordance with EPBC Assessment 2019/8437 – planning and initial actions to commence FY23	

2.1.3 Species of National Significance

The species of National Environmental Significance that will be addressed by this offset are outlined below in Table 3, which also includes the conservation status for each species as well as the adjusted impact calculated for the **entire** project area. The offset described by this OIP does not address the entire impact for the three species of black cockatoo, the Chuditch or the Woylie but does address the entire impact proposed by the project on the Western ringtail possum and the Quokka.

Table 3 Focus Species of National Significance

Conservation significant species (EPBC Act[a] and WA BC Act[b])	Conservation Status [c]		Adjusted impact [d] (ha)
	EPBC Act	BC Act	
Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*)	VU	VU S3	4,795
Baudin's black cockatoo (*Calyptorhynchus baudinii*)	EN	EN S2	4,795
Carnaby's black cockatoo (*Calyptorhynchus latirostris*)	EN	EN S2	4,795
Woylie (*Bettongia penicillata ogilbyi*)	EN	EN S2	1,857
Chuditch (*Dasyurus geoffroii*)	VU	VU, S3	4,749
Western ringtail possum (*Pseudocheirus occidentalis*)	CR	CR S1	245
Quokka (*Setonix brachyurus*)	VU	VU, S3	225

a: EPBC Act refers to the Commonwealth Government Environment Protection and Biodiversity Conservation Act 1999
b: BC Act refers to the Western Australian Government Biodiversity Conservation Act 2016
c: Species status as classified as EN – endangered, VU- vulnerable, CR – critically endangered, T- threatened, MI- migratory species, CD – species of special conservation interest, IA – migratory birds protected under an international agreement, S1 – schedule 1 (critically endangered species), S2 – schedule 2 (endangered species), S3- schedule 3 (vulnerable species), S6 – schedule 6 (conservation dependent fauna)

3 DESCRIPTION OF THE OFFSET AREA

3.1 GENERAL DESCRIPTION

The lands were identified and subsequently assessed for their environmental offset value (e.g., landscape connectivity, contiguity with existing habitat, tenure, viability, future level of threat), via desktop study and on-ground reconnaissance. Selection in part also considered the connectivity with existing conservation reserves such as the Wellington Forrest National park.

3.1.1 Areas for Habitat Protection

Twelve land parcels (4,175 ha) were considered suitable for inclusion in the direct offset ranging from good to excellent condition (Keighery scale of vegetation condition), with some cleared land also included (Table 4). These areas have high conservation value and significant potential to maintain or enhance connectivity within the landscape. Of these 12 land parcels, 11 were considered suitable for land protection and management, and eight contained areas that provided suitable benefit to conservation significant species through ecological restoration.

3.1.2 Areas for Ecological Restoration

The proposed properties are currently owned by Worsley Alumina and have been cleared for agriculture and the vegetation is degraded (100% paddock/agricultural land) being primarily used for grazing. Some remnant paddock trees exist and have potential to contain or form hollows, therefore represent potential breeding habitat.

Current land form condition is good; major soil type is Ironstone Gravelly Soils: soils that have an ironstone gravel layer (>20% and >20 cm thick) or ferricrete/cemented gravels within the top 15 cm, and ironstone gravels a dominant feature of the profile. This is favourable for successful restoration of habitat, as demonstrated by Worsley Alumina mine site rehabilitation and nearby ecological restoration projects undertaken for offsets (eg New mont Boddington Gold Hotham Farm, Water Corporation Abercorn Rd, The Lakes).

Surrounding vegetation types include: Jarrah/Marri forest and woodlands; Jarrah/Marri/Allocasuarina woodlands on slopes and ridges; Wandoo woodlands; Blackbutt woodlands on lower slopes; Flooded Gum woodlands in drainage lines;

Restoration sites contain water sources (i.e. small agricultural dams and minor drainage lines).

The proposed parcels of land are boarded by State Forest (Harris River) and National Park (Wellington National Park), they are also adjacent to the areas proposed for habitat protection under Offset Implementation Plan 1A.

3.2 LOCATION, PARCEL AND OWNERSHIP.

The offset property is shown in shown in Figure 1 and Figure 2 with the details provided below in Table 4.

Table 4 Offset Property Details for Offset 1A and 1B

Lot Number	Total Offset Area (ha)	Vegetation Type		Current Land Use
		Cleared	Native Vegetation	
2209/278 Lot 11 on Deposited Plan 24463	35.6	32.0	3.6	Agricultural (Leased)
2076/45 Lot 6636 on Deposited Plan 123932	77.3	1.8	75.6	Agricultural (Leased)
2064/464 Lot 5199 on Deposited Plan 119572	13.1	0	13.1	Agricultural (Leased)
1917/68 Lot 388 on Deposited Plan 255829	20	20		Agricultural (Leased)
1605/597 Lot 1 on Diagram 60766	16.6	0	16.6	Remnant Veg
1605/598 Lot 591 on Deposited Plan 122639	1.8	0	1.8	Remnant Veg
1573/93 Lot 633 on Deposited Plan 122638	134.4	0	134.4	Remnant Veg
2188/432 Lot 1 on Diagram 97837	45.6	39.1	6.5	Agricultural (Leased)
453/168A Lot 2 on Plan 9255	61.2	44.7	16.5	Agricultural (Leased)
2107/377 Lot 233 on Deposited Plan 249034	0.7	0	0.7	Agricultural (Leased)
1976/23 Lot 5 on Plan 14227	229.5	0	229.5	Remnant Veg
2862/255 Lot 100 on Deposited Plan 402144	1642.7	297.3	1345.4	Agricultural (Leased) Remnant Veg

Lot Number	Total Offset Area (ha)	Vegetation Type		Current Land Use
2153/260 Lot 102 on Deposited Plan 23201	2243.1	0	2243.1	Remnant Veg
1437/753 Lot 2764 on Deposited Plan 138097	90.6		90.6	Remnant Veg
TOTAL	4610	435	4175	

Table 5 Value of the Offset utilizing the EPBC Assessment Guide

Species	Offset value (EPBC Assessment Guide)		TOTAL
	Cleared	Remnant Veg	
BBC	209.7	661.3	870.9
CBC	209.7	661.3	870.9
CHU	229.5	752.6	982.1
FRTBC	230.3	752.6	982.9
QUO	64.2	662.9	727.1
RTPH	0	0	0.0
WOY	0	309.7	309.7
WRTP	0	317.3	317.3

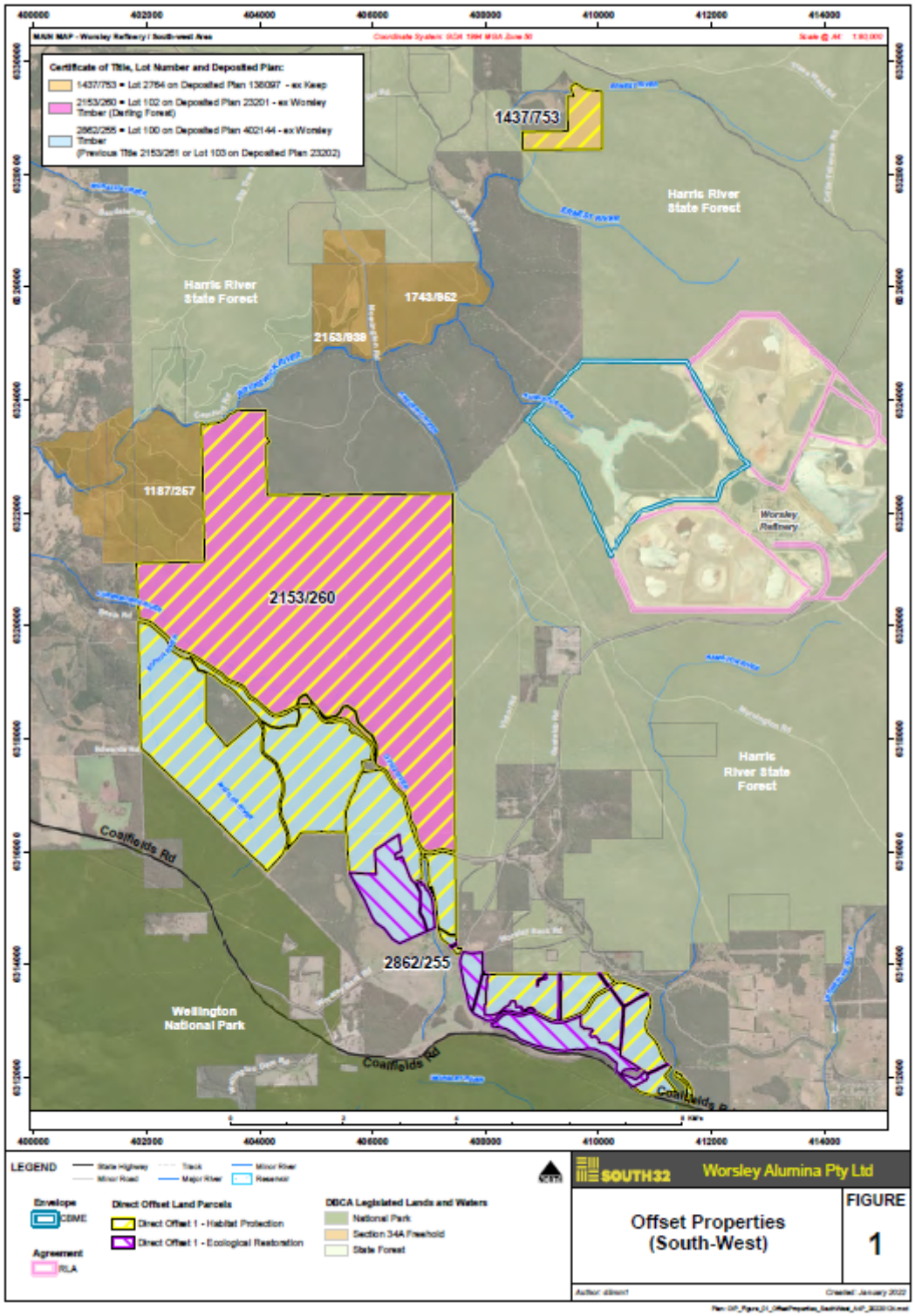

Figure 1 Offset Properties (South West)

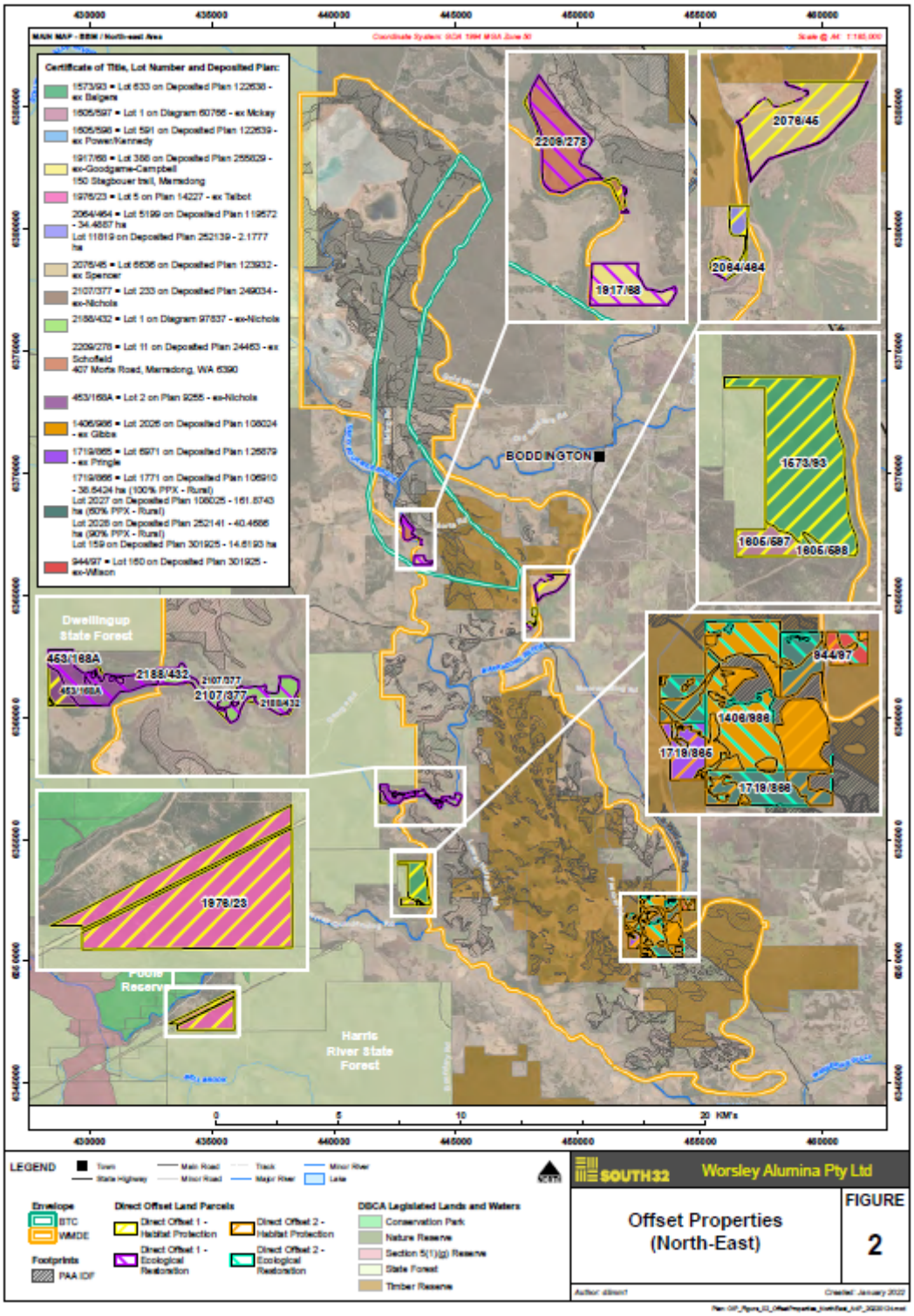

Figure 2 Offset Properties (North East)

3.3 ASESSMENT OF THE LAND

3.3.1 Areas Proposed for Habitat Protection

Disturbance:

- historical logging and grazing;
- recent bushfire
- presence of feral species (i.e. red fox *Vulpes vulpes*; feral cat *Felis catus*; feral pig *Sus scrofa*);
- minor recreational use.

Habitat importance:

- Major habitat types include: Jarrah/Marri forest and woodlands; Jarrah/Marri/Allocasuarina woodlands on slopes and ridges; Wandoo woodlands; Blackbutt woodlands on lower slopes; Flooded Gum woodlands (Mattiske 2020b, Biostat 2020);
- All extant native vegetation on the properties represents foraging habitat for Carnaby's black cockatoo, Baudin's black cockatoo and forest red-tailed black-cockatoo (as per DoEE 2018), (Mattiske 2020, Biostat 2020). The majority of the offset properties contain mature habitat trees with potential to form hollows, therefore representing potential breeding habitat for black cockatoos (as per DoEE 2018).

All extant native vegetation on the properties represents potential habitat for the chuditch (Biostat 2020, 2021).

Extant native vegetation on the offset properties within the proximity of CBME is potentially important habitat for the quokka and western ring-tailed possum, with an emphasis on riparian habitat, denser vegetation communities within valleys and those supporting hollows and Balga (Xanthorrhoea preissii) (Biostat 2020, Craig et al. 2017, Hayward et al. 2005, Wayne et al. 2005).

Several properties contain water sources (i.e. small dams and natural drainage lines).

Phytophthora dieback status of properties is indeterminate at this stage with survey work commencing in Autumn 2022.

3.4 METHOD FOR CALCULATING OFFSET SITE SUITABILITY

The suitability of the site as an offset was assessed using the EPBC Act Offsets Assessments Guide to ensure it meets the requirements of the Department's EPBC Act *Environmental Offsets Policy* (October 2012).

3.5 CONTRAINTS AND VARIABLES

Confirmation from the Department of Agriculture, Water and the Environment (Commonwealth) and Department of Water and Environmental Regulation (State) that the offset property and intent is acceptable will be required in order to progress this plan. This will be confirmed during the assessment process and final calculations confirmed prior to approval of the Project and associated offsets.

4 OFFSET IMPLEMENTATION PLAN

This section describes the management actions and measures necessary to meet the identified outcomes of the proposed offset area. The actions and management measures proposed are designed to provide positive conservation outcomes for the black cockatoos, chuditch, quokka, woylie and western ringtail possum, however they will also bring an overall improvement in the condition and quality of a wide range of native species present within the offset area, as well as providing an effective ecological linkage between State forest blocks and the Wellington national park.

4.1 ACTION PLAN

4.1.1 Confirmation of Suitability of the Land Parcels

Worsley has proposed the above land parcels as potential locations which could support offsets for the seven MNES species outlined in Section 2.1.3. Confirmation of the suitability and acceptability of the location will be required through the State and Commonwealth Regulatory Authorities. Further studies may be required as to the adequacy of the proposed land, including but not limited to flora and fauna studies (including native and weed/feral investigations) and dieback reviews to confirm the environmental offset value.

4.1.2 Provision of Suitable Tenure – Legally Securing the Offset Area

Application for suitable protection measures to ensure protection of the offset for the life of the impact (eg conservation covenant including appropriate survey and delineation of the area for conservation (registered as an encumbrance against the property) and potentially future subdivision of 1719/866. Methods of protection include:

- *Soil and Land Conservation Act 1945 (WA)*: a conservation covenant or an agreement to reserve between owner and Commissioner of Soil and Land Conservation (Part IVA)
- *National Trust of Australia (WA) Act 1964 (WA*): agreement between the owner/occupier of land and the National Trust of Australia (WA) restricting use of land (s 21A)
- *Biodiversity Conservation Act 2016 (WA):* biodiversity conservation agreement between the owner/occupier and the Minister (Part 7) or biodiversity conservation covenant between the owner and DBCA (Part 8)
- *Environmental Protection Act (1986) (WA)*: environmental protection covenant between DWER and owner (with consent of all owners/occupiers) as a condition of a clearing permit or Ministerial Statement (new part VB, not yet in force)
- *Environment Protection and Biodiversity Conservation Act 1999 (Cth):* conservation agreement between the Commonwealth Environment Minister and the landowner or user (can include indigenous groups) (s 305, Part 14)
- *Conservation and Land Management Act 1984 (WA)*: agreement between DBCA and the person responsible for the area to manage private land (as if it were state forest, timber reserves, national parks, conservation parks or nature reserves) (s 8A)
- *Transfer of Land Act 1893 (WA)*: absolute caveat (s 137) between caveator and owner and registered on the Certificate of Title or deed of restrictive covenant 'in gross' between owner and local government / public authority

Investigation as to the appropriate tenure and timing for placement will be confirmed following confirmation under Section 4.1.1.

As the largest part of this area, in the south (Figure 1) presents a valuable opportunity to link existing state forest (Harris River State Forest) with National Park (Wellington National Park) Worsley Alumina will pursue agreement with the Department of Biodiversity and Land Management (DBCA) to incorporate the area into the overall State Conservation Estate. Much of this is habitat protection and will require confirmation as to its acceptability for incorporation into the conservation estate, and it is expected the areas of ecological restoration would be required to meet the requirements of state forest restoration activities currently undertaken by Worsley Alumina as part of existing expectations for these to be acceptable for incorporation. Where appropriate areas identified on Figure 2 will also be reviewed for inclusion within the State conservation estate.

4.1.3 Management Activities

This section describes the land management and restoration activities that will be undertaken to ensure the property is suitably prepared for protection of the existing habitat and that restoration will provide an improvement to the habitat values for the species identified to benefit from this proposed offset. This section has been split into two sections to accommodate Part A and Part B of the offset.

4.1.3.1 Habitat Protection – Part A

The following land management activities will be undertaken to ensure the property is suitably prepared to ensure protection of the habitat.

- Management Activities:
    - Site Understanding – the following activities will be completed within 12 months of approval of this OIP, if not already completed
        - Disease Mapping and subsequent management (disease mapping of properties already complete)

- Weed management (for land preparation and fire risk minimization) – a weed survey will be undertaken to determine the presence of noxious weeds, resulting, if required, in a weed management plan and appropriate mapping
- Feral animal control
    - Feral animal baseline monitoring will be undertaken, and a feral animal control plan completed for the area.
    - Incorporation into the Worsley Alumina current feral animal management procedures, and inclusion of any additional actions as a result of baseline monitoring will be incorporated.
- Establishment of baseline monitoring plots within and outside of the offset properties to ensure monitoring can be undertaken to demonstrate improvement or stability in the habitat (depending on the start quality of the zone) as well as comparison with adjacent existing protected habitat (State forest and National Park) to monitor external effects that may occur;
- Establishment of baseline photo monitoring points, within offset areas and surrounding protected habitat areas (State forest and National park).

4.1.3.2 Ecological Restoration – Part B

The following land management and restoration activities will be undertaken to ensure the property is suitably prepared and that restoration will provide an improvement to the habitat values for the species identified to benefit from this proposed offset.

The following activities will be undertaken within 12 months of approval of this OIP:

- Site Preparation
    - Destocking – removal of all livestock from the property allowing for access agreements to expire;
    - Improvement (if required) of boundary fencing to prevent stock entering from adjacent properties and including maintenance of firebreaks;
    - Confirmation of any contaminated sites and planning for appropriate removal or restoration;
    - Weed management (for land preparation and fire risk minimization) – a weed survey will be undertaken to determine the presence of noxious weeds, resulting, if required, in a weed management plan and appropriate mapping
    - Disease Mapping and subsequent management
    - Feral animal control
        - Feral animal baseline monitoring will be undertaken, and a feral animal control plan completed for the area.
        - Incorporation into the Worsley Alumina current feral animal management procedures, and inclusion of any additional actions as a result of baseline monitoring will be incorporated.
- Restoration Planning and Design

  Restoration planning identify suitable locations within the selected land parcels to commence ecological restoration. Actions to be undertaken include:
    - Baseline survey, land assessment and mapping of Restoration Units (including remnant vegetation) (Complete)
    - Definition of Restoration Units include species composition, seed/seedling rates, and any specific management actions associated with establishment and habitat provision

Following the initial planning process (within 12 months of approval) implementation of restoration activities will commence following completion of the land management activities such as fencing and preliminary weed control. This will include weed and disease management and soil and landform preparation. Restoration activities will commence two to five years post approval and will include:

- Targeted restoration within stands of remnant vegetation (if available) through natural regeneration following destocking (initially spontaneous regeneration). Where regeneration is not successful in line with establishment criteria for understory supplementary seeding or planting (facilitated regeneration) will be carried out;

- Collection of seed and production of seedlings as required for restoration activities. Seed or seedlings will be selected for inclusion in the restoration activities to ensure they are representative of reference ecosystems and matched to topography, soil type to delivery the required outcomes. Seed and seedlings will be sourced from within the Worsley Alumina DBCA agreed provenance zone and will be consistent with regional vegetation. Again, the timing of this activity is dependent on seasonal variations in seed availability. Provenance zones will need to be confirmed with DBCA for the southern areas as outlined in Figure 1.

- Restoration earthworks and planting will be undertaken by suitably experienced restoration contractors and supervised appropriately by Worsley Alumina or selected third party contractor/consultant. Timing of works will be dependent on seasonal requirements and will be completed in line with existing, well proven techniques currently employed at BBM and supported with input from practitioners experienced in ecological restoration;

- Installation of appropriate structures to improve habitat value (including but not limited to nest boxes and habitat piles – numbers and location will be developed in accordance with the planning processes and installed accordingly).

4.2 MONITORING

Monitoring programs will be discussed and finalised as part of the ongoing consultation with DAWE and DWER with input from other regulatory agencies and suitably qualified external parties. The below information has been prepared to outline the initial plan for reporting and monitoring of the offset.

4.2.1 Habitat Protection – Part A

Protection and management will improve the landscape for conservation significant species and reduce the spread of weeds and *Phytophthora* as well as negative recreational uses. Protection may also prevent logging and management will reinstate appropriate fire regimes.

Monitoring activities for Part A of the offset will be focused around improving the quality of the habitat as much as possible as well as ensuring the habitat continues to be comparable to surround habitat (such as areas of adjacent state forest or national part) and will include:

- Feral Animal control activities – ongoing feral animal monitoring programs to occur on a 3 yearly cycle and incorporated as much as possible into ongoing fauna monitoring;

- Disease management monitoring activities as planned and required by baseline monitoring – ongoing monitoring expected to be undertaken on a 3-5 yearly review cycle

- Fauna monitoring will be incorporated into the Worsley fauna monitoring program which includes monitoring on a three year cycle

- Reporting on habitat quality, including comparison against baseline plots established within State forest or National Park, for areas not subject to restoration activities, including analysis of the quality to determine if t has been maintained or improved over the reporting period (it is expected monitoring for this reporting trigger will be undertaken on no more than a 3 yearly basis);

    - Photo monitoring points will be established to monitor restoration works as well as remnant vegetation areas, photos will be taken annually to provide baseline and ongoing imagery, including:

        - GPS location of the photo point
        - Date, time and number of the photo
        - Direction in which the photo was taken

4.2.2 Ecological Restoration – Part B

Monitoring of the offset properties will be incorporated into the Worsley Alumina annual monitoring program. Monitoring is undertaken within 15 months of planting to determine establishment, and then progressively over 5, 10, 20 years (and then as

required) to evaluate if the areas has met the completion criteria. Monitoring also allows for review and ongoing improvement or maintenance required to deliver the conservation benefit. Monitoring activities will include:

- Early monitoring to determine establishment – at 15 months, and again at 3 years;
- Species composition – 3 years following establishment, then 5, 10, 15 years
- Evidence of structure development on a trajectory toward mature communities – after 10 years, five yearly

Results from monitoring activities will be reported in the Annual Biodiversity Offsets Report and will include:

- Flora monitoring activities – reporting on success against establishment criteria and ongoing assessment against the criteria for state forest restoration;
- Fauna monitoring activities
- Reporting on habitat quality for areas not subject to direct restoration activities, including if it has been maintained or improved over the reporting period (it is expected monitoring for this reporting trigger will be undertaken initially within 18 months of stock exclusion and then on no more than a 3 yearly basis);
    - Photo monitoring points will be established to monitor restoration works as well as remnant vegetation areas, photos will be taken annually to provide baseline and ongoing imagery, including:
        - GPS location of the photo point
        - Date, time and number of the photo
        - Direction in which the photo was taken
- Feral Animal and Disease control activities;
- Weed monitoring – as monitored during normal monitoring activities and also to report on any additional weed management activities or any required if baseline monitoring indicates the need for a weed management plan

4.3 KEY PERFORMANCE INDICATORS

The of expectations for development of KPI's and Completion criteria will be further discussed with regulators and advisory bodies in accordance with the BOP. It expected that, as the ultimate goal for this offset will be incorporation into the State Conservation Estate, that the completion criteria and KPI's will be in accordance with the Worsley Alumina Biodiversity and Forest Management Plan (BFMP).

4.3.1 Habitat Protection – Part A

It is expected that the areas included under Part A of this offset will be presented for incorporation in the WA Conservation Estate and requirements for acceptance will be to ensure the properties have a comparable habitat quality to that of the surrounding estate. KPI's may include the following outcomes:

Landform & management:

- Habitation protection sites will not have any landform feature that is a potential hazard (eg unsafe holes, trenches, exposed culverts)
- Habitat protection sites have no physical features that present a potential hazard to incorporation into the WA Conservation Estate (including fences, old buildings, contaminated sites)

Habitat Quality

- Vegetation is of comparable composition and form as the surrounding conservation estate (or other agreed baseline sites)
- Fauna use is comparable to surrounding conservation estate (or other agreed baseline sites)
- Presence of weeds is comparable with surrounding conservation estate (or other agreed baseline sites)

- Risk of disease is comparable with the surrounding conservation estate and the offset area does not present a risk of contamination within the surround estate if incorporated

4.3.2 Ecological Restoration – Part B

Examples of appropriate completion criteria for ecological restoration are outlined below and will require discussion with the members of the BOAG and other regulatory bodies (including DBCA, DWER and DAWE) to ensure they are consistent with expected outcomes.

Landform:

- Restoration sites will not have any landform feature that is a potential hazard (eg unsafe holes, trenches, exposed culverts)
- There will be no cuttings or drains narrower than 3 meters nor with a face steeper than a 1:3 slope

Sustainable Growth & Development - establishment

- Areas will be fertilised to encourage growth
- Seed Mix used to be sourced from local provenance and be representative of the surrounding vegetation
- Fallen logs and substantial rocks to remain insitu as habitat locations

Sustainable Growth and Development – successional establishment (2-10 years)

- Average Native species richness between 20-40 native species/80m^2
- 40% foliage cover of native species
- Tree density >200 trees/ha

Ecosystem Consolidation (>10 years)

- No declared weeds
- Weed presence foliage cover <2%

4.4 CONTINGENCY MEASURES AND ADAPTIVE MANAGEMENT

In the event that suitable land protection cannot be secured for these offset properties, Worsley Alumina commits to engage with Western Australian and Australian Commonwealth governments as required to secure an alternative area of land of equivalent size and value, which can be suitably protected.

4.5 RISK ASSESSMENT

Following completion of planning and design actions outlined in section 4.1 a risk assessment will be undertaken for the offset.

5 REPORTING

5.1 ANNUAL BIODIVERSITY OFFSET REPORT (ABOR)

Progress against this plan will be provided in the Annual Biodiversity Offset Report (ABOR) which will be provided as an appendix to the Annual Environmental Report (AER). In addition, clearing in accordance with the allowance provided by this offset will be reported in the Annual Plan of Bauxite Mining Operations (10 Year Plan).

6 STAGING

6.1 REQUIREMENT FOR STAGING

As outlined in Section 1.3 this offset represents value for seven species of national significance. Successful implementation of the offsets proposed in this OIP fully compensates for the SRI for the Western Ringtail Possum and Quokka as a result of the disturbance associated with the Revised Proposal. There are further requirements for the remaining 5 species and these will be addressed by further offsets proposed and included in in accordance with the Worsley BOP (2022). Further offsets will be proposed and approved in accordance with Section 5.3 of the BOP, prior to clearing commencing which is not accounted for by this OIP.

7 OFFSET ACQUITTAL

The offset acquittal process is undertaken using the EPBC Act Offsets assessment guide. The EPBC Act Offsets assessment guide requires the key ecological attributes of the species or ecological community to be quantified.

8 DEFINITIONS, TERMS AND ABBREVIATIONS

Term	Description
ABOR	Annual Biodiversity Offset Report
AER	Annual Environmental Report
BBC	Baudins Black Cockatoo
BOAG	Biodiversity Offsets Advisory Group
BOP	Biodiversity Offsets Plan
CBC	Carnaby's Black Cockatoo
CBME	Contingency Bauxite Mining Envelope
CHU	Chudich
ERD	Environmental Review Document
DAWE	Department of Agriculture, Water and the Environment
DBCA	Department of Biodiversity, Conservation and Attractions (WA)
DWER	Department of Water and Environmental Regulation
EPBC Act	*Environmental Protection and Biodiversity Act 1999*
FRTBC	Forest Red Tailed Black Cockatoo
JV	Joint Venture
OIP	Offset Implementation Plan
QUO	Quokka
RTPH	Red Tailed Phascogale
SRI	Significant Residual Impact
WOY	Woylie
WRTP	Western Ringtail Possum

9 REFERENCES

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10 DOCUMENT CONTROL

Reviewer Circulation

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Approval Circulation

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