



Preston  
Consulting

# ASHBURTON SALT PROJECT

INITIAL OFFSET STRATEGY

30 MAY 2023

PREPARED FOR K PLUS S SALT PTY LTD  
BY PRESTON CONSULTING PTY LTD



Proponent contact details:

## K PLUS S SALT AUSTRALIA

Contact Person: Gerrit Gödecke – Managing Director  
Email: [ashburtonsalt@k-plus-s.com](mailto:ashburtonsalt@k-plus-s.com)  
Phone: 1300 653 357  
Street Address: Level 27, St Martins Tower, 44 St Georges Terrace, Perth, WA, 6000

Document developed by:

## PRESTON CONSULTING

Contact: Gavin Edwards - Director  
Email: [gedwards@prestonconsulting.com.au](mailto:gedwards@prestonconsulting.com.au)  
Website: [www.prestonconsulting.com.au](http://www.prestonconsulting.com.au)  
Phone: +61 4 8873 7273  
Street Address: Level 3, 201 Adelaide Terrace, East Perth, WA, 6004  
Postal Address: PO Box 3093, East Perth, WA, 6892

### Disclaimer

This document has been prepared on behalf of and for the exclusive use of K Plus S Salt Pty Ltd and is subject to and issued in accordance with the agreement between Preston Consulting Pty Ltd and K Plus S Salt Pty Ltd.

Preston Consulting Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this document by any third party.

Copying of any part of this document without the express permission of Preston Consulting Pty Ltd and K Plus S Salt Pty Ltd is not permitted.

## ACKNOWLEDGEMENT OF COUNTRY

*Preston Consulting acknowledges the Traditional Owners of the lands on which it works, in particular the Whadjuk people of the Noongar Nation and the Thalanyji people of the lands where activities are proposed. Preston Consulting pays its respects to Elders past and present, to emerging community leaders and to all Aboriginal and Torres Strait Islander peoples.*



## DOCUMENT CONTROL

<b>Document Title</b>	Ashburton Salt Project: Initial Offset Strategy		
<b>Document Number</b>	K+S_ASH_OFS_01		
<b>Revision Number</b>	1		30/05/2023
<b>Status</b>	FINAL		
<b>Author</b>	Madeline Tindale - Environmental Consultant Preston Consulting	Signature	30/05/2023
<b>Checked</b>	Gavin Edwards - Director Preston Consulting	 Signature	30/05/2023
<b>Authorisation</b>	Gerrit Gödecke - Managing Director K Plus S Salt Pty Ltd	 Signature	30/05/2023



---

## CONTENTS

---

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2</b>	<b>SCOPE AND PURPOSE.....</b>	<b>4</b>
<b>3</b>	<b>STAKEHOLDER CONSULTATION.....</b>	<b>4</b>
<b>4</b>	<b>PROPOSED OFFSETS.....</b>	<b>9</b>
4.1	<i>Significant Residual Impacts.....</i>	9
4.2	<i>Details of Proposed Offsets.....</i>	14
<b>5</b>	<b>ASSESSMENT OF PROPOSED OFFSETS – EP ACT.....</b>	<b>15</b>
5.1	<i>WA Environmental Offsets Guidelines.....</i>	16
5.2	<i>WA Offsets Template.....</i>	16
5.3	<i>Offset Principles.....</i>	20
5.4	<i>WA Offsets Calculator.....</i>	20
<b>6</b>	<b>ASSESSMENT OF PROPOSED OFFSETS – EPBC ACT.....</b>	<b>21</b>
6.1	<i>Commonwealth Environmental Offsets Guidelines.....</i>	22
6.2	<i>Offset Principles.....</i>	22
6.3	<i>Offset Calculator.....</i>	23
<b>7</b>	<b>OBJECTIVES, TARGETS, AND COMPLETION CRITERIA.....</b>	<b>24</b>
<b>8</b>	<b>MONITORING.....</b>	<b>24</b>
<b>9</b>	<b>FUNDING ARRANGEMENTS.....</b>	<b>25</b>
<b>10</b>	<b>MANAGEMENT, ROLES, AND RESPONSIBILITIES.....</b>	<b>25</b>
<b>11</b>	<b>REVIEW AND REVISION.....</b>	<b>25</b>
<b>12</b>	<b>CONCLUSION.....</b>	<b>26</b>
<b>13</b>	<b>REFERENCES.....</b>	<b>27</b>
<b>14</b>	<b>GLOSSARY.....</b>	<b>27</b>
<b>15</b>	<b>APPENDICES.....</b>	<b>28</b>

---

## FIGURES

---

Figure 1: Regional Proposal Location.....	2
Figure 2: Development Envelopes and Indicative Proposal Layout.....	3
Figure 3: Local Values Benthic Habitats and Communities.....	11
Figure 4: Regional Values Flora and Vegetation.....	12
Figure 5: Local Values Terrestrial Fauna.....	13



---

## TABLES

---

Table 1: Summary of Relevant Stakeholder Engagement.....	4
Table 2: Summary of Significant Residual Impacts – Part IV EP Act Environmental Values.....	9
Table 3: Summary of Significant Residual Impacts – MNES.....	10
Table 4: Proposed offsets.....	14
Table 5: Assessment against Residual Impact Significant Model.....	17
Table 6: WA Offsets Policy Template.....	18
Table 7: Assessment of the proposed offsets against the six principles .....	20
Table 8: EPBC Act overarching principles applied in determining the suitability of offsets.....	22
Table 9: Objectives, targets, and completion criteria.....	24
Table 10: Offset monitoring schedule .....	25

---

## APPENDICES

---

Appendix 1: WA offsets calculator for Good to Excellent quality vegetation

Appendix 2: WA offsets calculator for Northern Quoll and Pilbara Olive Python (combined)

Appendix 3: EPBC calculator for Northern Quoll and Pilbara Olive Python



---

# 1 INTRODUCTION

---

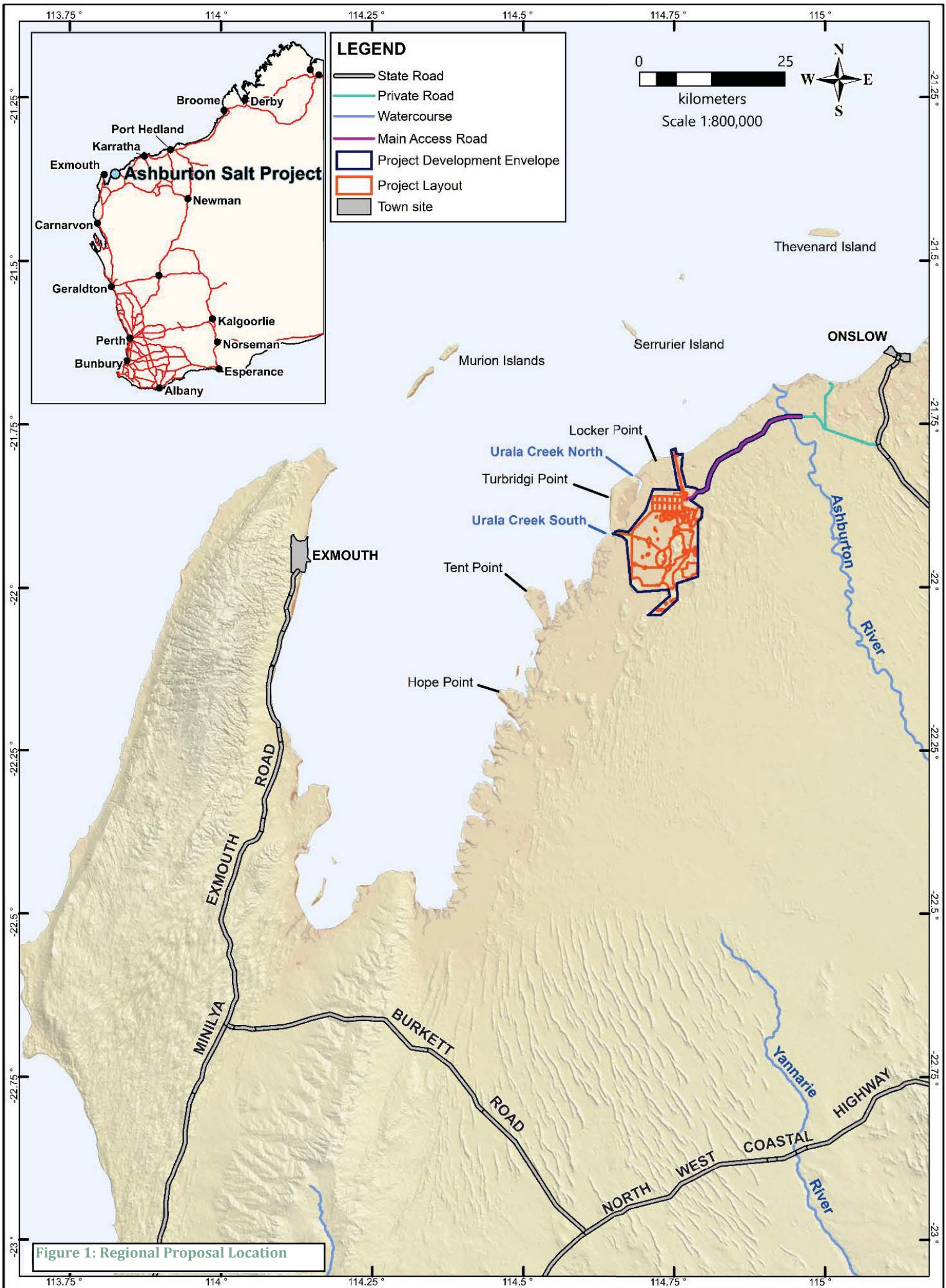
K plus S is an international resources company with headquarters in Germany and is planning through its Australian entity K+S Salt Australia Pty. Ltd. (K+S) to develop and operate a greenfield solar salt project (the Ashburton Salt Project; Proposal). The Proposal is approximately 40 kilometres (km) south-west of the township of Onslow in Western Australia (WA), within the Shire of Ashburton (Figure 1).

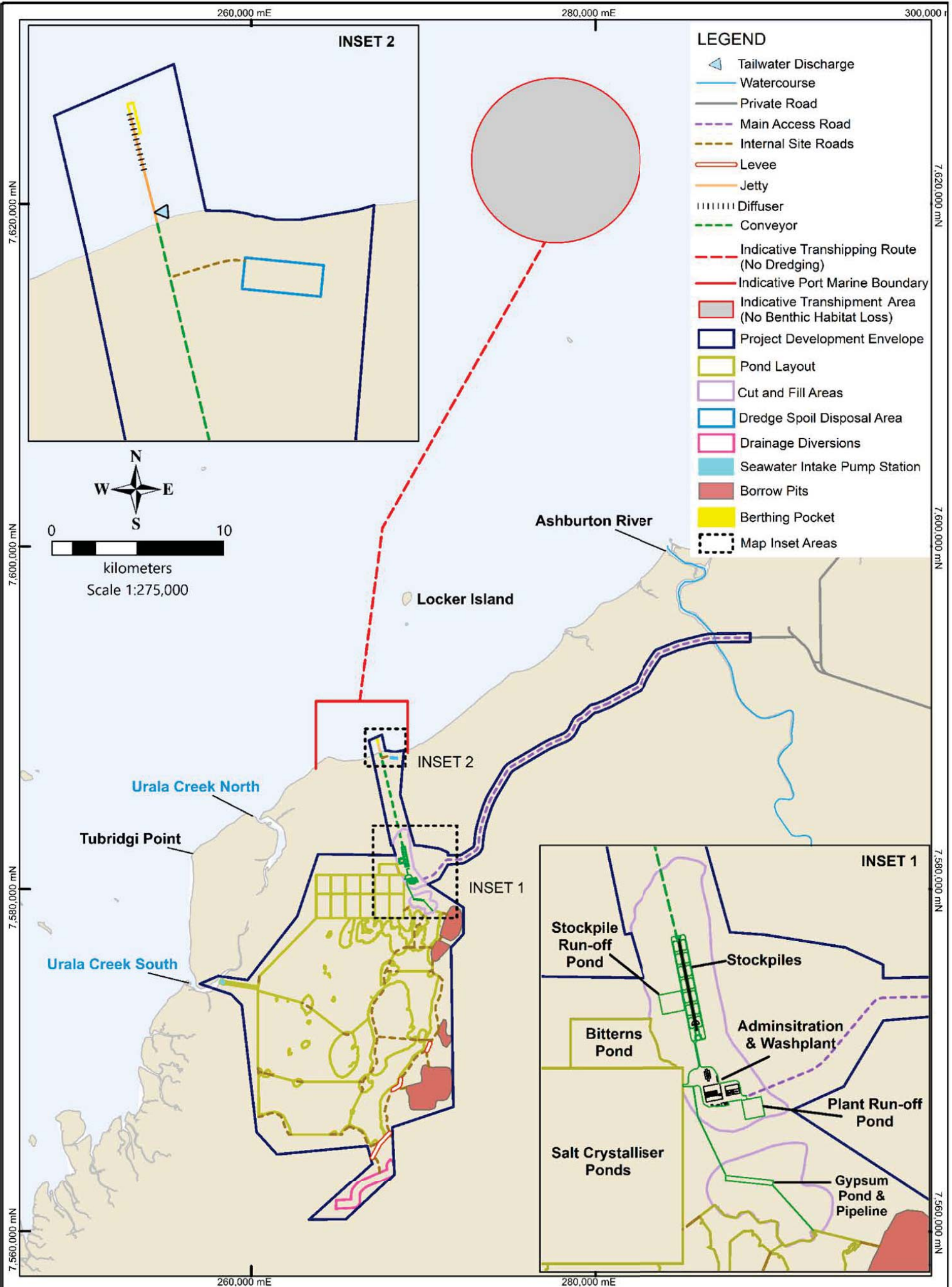
The Proposal includes the construction of solar salt evaporation and crystallisation ponds and associated infrastructure/activities, including:

- Seawater intake pumps/channel/pipeline(s);
- Service Corridor and internal site roads;
- Onsite diesel fuelled back-up/standby electricity generation and reticulation;
- Fuel storage sites;
- A jetty and product loading facilities, and bitterns discharge infrastructure;
- Salt wash plant and associated ponds, salt stockpiles and conveyors;
- Laydown and onsite buildings such as offices, storage, workshops and possibly accommodation;
- Sewage treatment facilities and landfill;
- Water management/monitoring bore(s);
- Desalination plant;
- Drainage diversion/s and levees;
- Borrow pit areas for rock, clay and other construction materials; and
- Dredging and land-based dredge spoil disposal.

The Proposal has a direct footprint of up to 11,992 hectares (ha) within a proposed 20,990 ha Development Envelope (Figure 2).







Date: 25/08/2021 Paper: A4 P GDA94, MGA50  
 Data Source: 4A, 4E, 13D, 17A  
 File Info: S43a\_Site\_Layout\_Detail\_20210822.WOR

Figure 2: Development Envelopes and Indicative Proposal Layout



## 2 SCOPE AND PURPOSE

K+S has assessed the residual impacts of the Proposal against the residual impact significance model provided in the WA Environmental Offsets Guidelines (EPA, 2014a). K+S has considered the Proposal would have significant residual impacts on benthic communities and habitats (BCH), marine and terrestrial fauna, and flora and vegetation (refer to Section 4.1, Table 2 and Table 3).

If the Proposal is approved, K+S predicts that an offset condition will be included in the Ministerial Statement and EPBC approval decisions to counterbalance the significant residual impacts of the Proposal. This Offset Strategy has been prepared in anticipation of these offset conditions, in order to detail potential suitable offset measures that will be undertaken by K+S.

This Offset Strategy will remain in draft form until further detailed discussions are held with Environmental Protection Authority (EPA) Services at the Department of Water and Environmental Regulation (DWER), Department of Biodiversity, Conservation and Attractions (DBCA), Department of Mines, Industry Regulation and Safety (DMIRS) and the Department of Climate Change, Energy, the Environment and Water (DCCEEW). This Offset Strategy will be revised as required throughout the assessment process to address comments and the final version will be submitted for approval by EPA Services and DCCEEW.

## 3 STAKEHOLDER CONSULTATION

K+S has undertaken its stakeholder engagement in accordance with Ministerial Council on Mineral and Petroleum Resources (MCMPR) Principles for Engagement with Communities and Stakeholders (2005). These principles are as follows:

- Communication must be open, accessible, clearly defined, two-way and appropriate;
- The process and outcomes of community and stakeholder engagement should, wherever possible, be made open and transparent, agreed upon and documented;
- A cooperative and collaborative approach to seek mutually beneficial outcomes is considered key to effective engagement;
- Inclusiveness involves identifying and involving communities and stakeholders early and throughout the process, in an appropriate manner; and
- Community and stakeholder engagement should establish and foster mutual trust and respect.

All interactions with stakeholders are recorded in the Proposal's Stakeholder Consultation Register (refer to summary table in Table 1).

**Table 1: Summary of Relevant Stakeholder Engagement**

Date	Description of Engagement	Stakeholders	Stakeholder comments/ issue	Proponent Response and/or resolution	Stakeholder Response
2016 – ongoing	Meetings; letters	DMIRS	Initial discussions around process and lead agency.	Lead agency was transferred to Department of Jobs, Tourism, Science and Industry (DJTSI).	Satisfactory, consultation to continue



Date	Description of Engagement	Stakeholders	Stakeholder comments/ issue	Proponent Response and/or resolution	Stakeholder Response
			Discussions regarding proposed National Park boundaries. Mining Proposal, Mine Closure Plan and Post Mining Land-use (fauna habitat) discussed.	Fauna habitat issue was discussed with DBCA.	
2016 - ongoing	Meetings; letters	DJTSI	Proposal was given lead agency status. Discussions regarding access, Ashburton North Strategic Industrial Area (ANSIA) and all government regulatory issues.	Continued discussions as Proposal has lead agency status.	Satisfactory, consultation to continue
2016 - ongoing	Meetings; Environmental briefing session; letters; submission of draft Environmental Review Document (ERD)	EPA Services (DWER)	Ongoing discussions with issues raised regarding protection of marine fauna, mangroves and wetlands. Ongoing discussions regarding assessment process, review of draft ERD and proposed offsets.	Continued open discussions and addressed any environmental concerns during environmental scoping. Consultation with EPA regarding the three Section 43A applications to change the Proposal during assessment that have been submitted. ERD revised to address comments.	Environmental Scoping Document (ESD) approved. Three separate changes to Proposal under section 43A approved. ERD being reviewed for public release. Provision of this Offset Strategy for review
2016-ongoing	Meetings; letters	DBCA	Local officers of Exmouth DBCA are kept up to date with the Proposal and environmental studies. Discussions with DBCA Perth office on proposed Giralia National Park proposed some distance south of the Proposal. Discussion regarding proposed offsets of the Proposal. Proposed Exmouth Gulf Marine Park – boundaries and management	Continue to provide regular updates on the Proposal and environmental studies. Continue to liaise with DBCA regarding offsets and the Proposed Exmouth Gulf Marine Park. Preference is to integrate offset management commitments with DBCA activities where appropriate and available This Offset Strategy developed in consideration of DBCA advice.	Satisfactory, consultation to continue
2016 - ongoing	Meetings	Department of Primary Industries and Regional	Ongoing engagement in development of an agent-based model of prawns in Exmouth Gulf	Ongoing engagement as model is developed	Satisfactory, consultation to continue



Date	Description of Engagement	Stakeholders	Stakeholder comments/ issue	Proponent Response and/or resolution	Stakeholder Response
		Development (Fisheries)	in order to predict impact of Proposal on Prawn Fishery		
2016 - ongoing	Meetings	DCCEEW	Engaged during development of EPBC referral. Comments provided on ESD and draft ERD.	Officially involved in current EPA assessment as it is an accredited assessment. K+S is keeping DCCEEW officers up to date where relevant given the EPBC assessment will still need to be conducted to allow approval by the Federal Minister. ERD revised to address comments. This Offset Strategy developed in consideration of DCCEEW comments.	S156A application approved. ERD being reviewed for public release. Provision of this Offset Strategy for review
2016-ongoing	Meetings; phone calls; community updates; environmental briefing	Pilbara Ports Authority	Regular engagement with issued raised around ports, marine safety, environmental studies, shipping providers, anchor points, Native Title and transshipping.	All issues were addressed with follow up meetings with various parties and a site visit was coordinated with PPA. PPA have attended community updates.	Satisfactory, consultation to continue
2016-ongoing	Meetings; phone calls; community updates; environmental briefing	Shire of Ashburton	Regular engagement with issued raised around river's flood plain, National Park, workforce housing, access road, bridge, turbidity, impact on Onslow Coast and management of infrastructure. Post-mining land use (fauna habitat) discussed.	All issued were addressed and engagement continues with the Shire of Ashburton. Discussions to be held regarding management of offsets during detailed planning later in the assessment process.	Satisfactory, consultation to continue
2016-ongoing	Meetings; phone calls; community updates, letters	Shire of Exmouth	Regular engagement with issued raised around river's flood plain, National Park, workforce housing, access road, bridge, turbidity, impact on Onslow Coast and management of infrastructure.	Engagement continues with the Shire of Exmouth. Discussions to be held regarding management of offsets during detailed planning later in the assessment process.	Satisfactory, consultation to continue
2016-ongoing	Community updates; community info sessions; correspondence;	Gascoyne Development Commission	Discussions with issues raised around ensuring GDC are kept up to date with the Proposal and	Continue to provide regular updates on the Proposal and local community engagement.	Satisfactory, consultation to continue



Date	Description of Engagement	Stakeholders	Stakeholder comments/ issue	Proponent Response and/or resolution	Stakeholder Response
	community open day		local community engagement.		
2016-ongoing	Community updates; meetings	Pilbara Development Commission	Initial meeting to explain the Proposal. Ongoing mailing of Proposal updates.	Continue to provide regular updates on the Proposal and local community engagement.	Satisfactory, consultation to continue
2016-ongoing	Community updates; meetings; mail outs; phone calls	Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	Ongoing discussions with BTAC with issues raised around Native Title and Indigenous Employment. Post mining land use (fauna habitat) discussed.	Continue to be in discussions with BTAC on these issues, and how Traditional Owners input and participation can be integrated into the offsets	Satisfactory, consultation to continue
2016-ongoing	Community updates; meetings; environmental sessions	Cape Conservation Group (CCG)	Ongoing discussions with issues raised around ensuring CCG are kept up to date with the Proposal, marine life, salt pans and bitterns.	All issues are being considered in ERD. CCG is invited to all community update sessions and has been provided updates on environmental studies. Potential participation in offsets.	Satisfactory, consultation to continue
2016-ongoing	Meetings; community information days; newspaper advertisements; phone calls; mail outs; website and social publications	Onslow Town Community	Regular engagement with issues raised around prawn numbers, fisheries, jetty, dredging, local employment and shipping.	Addressed issues and provide ongoing forums for community feedback.	Satisfactory, consultation to continue
2016-ongoing	Meetings; community information days; newspaper advertisements; phone calls; mail outs; website and social publications	Exmouth Town Community	Regular engagement with issues raised around school engagement, jetty, Marine fauna, bitterns, fishing and environmental impacts.	Addressed issues and provide forums for ongoing community feedback.	Satisfactory, consultation to continue
2016-ongoing	Meetings; community information days; correspondence; mail outs	AGIG – holder of Urala Pastoral Lease	Discussions with issues raised around road access, bridge, flooding, salt production process, gas storage Proposal and Urala pastoral lease.  Post mining land use (fauna habitat) discussed.	All issues are being considered as part of Proposal design. Ongoing communication with AGIG is occurring, and will include offset program discussions.	Satisfactory, consultation to continue



Date	Description of Engagement	Stakeholders	Stakeholder comments/ issue	Proponent Response and/or resolution	Stakeholder Response
2017-ongoing	Meetings, community information days, correspondence, emails	Forrest & Forrest / Harvest Road – sublessee of Urala Station	Discussions with issues raised around road access, construction traffic, potential impacts to cattle station use, associated infrastructure tenure	Correspondence to continue regarding key issues.	Consultation to continue
2016-ongoing	Meetings; emails; phone calls	Neighbouring Pastoral Stations (Koordarrie)	Discussions regarding property access for monitoring and drainage management. Koordarrie has provided access for monitoring and drainage management to be discussed at next Proposal stage.	Continue to be in discussions with Koordarrie on these issues which will include offset program discussions.	Satisfactory, consultation to continue
2016-ongoing	Meetings; emails; phone calls	Recreational Fishing Groups	Regular engagement with issues raised around, fisheries, jetty, dredging, local employment and shipping.	Continue to be in discussions on these issues, and applicability of offsets for fishing species.	Satisfactory, consultation to continue
2016-ongoing	Meetings; emails; phone calls	Exmouth and Onslow Prawn Fisheries	Regular engagement with issues raised around prawn fishery and potential impacts	Continue to be in discussions with Prawn Fisheries on these issues and applicability of offsets for prawn species.	Satisfactory, consultation to continue
2022-ongoing	Meetings, emails, correspondence	Western Australian Fishing Industry Council	Meeting to explain proposal, updates on project, discussion of potential impacts on fisheries	Continue to be in discussions on these issues.	Consultation to continue
2021-ongoing	Correspondence, emails	Protect Ningaloo	Response to letter received from Protect Ningaloo, offer to brief Protect Ningaloo	Stakeholder declined offer for briefing, continue to inform via email updates	Consultation to continue



## 4 PROPOSED OFFSETS

### 4.1 SIGNIFICANT RESIDUAL IMPACTS

The WA Environmental Offsets Guidelines (EPA, 2014a) states:

*“In general, significant residual impacts include those that affect rare and endangered plants and animals (such as declared rare flora and threatened species that are protected by statute), areas within the formal conservation reserve system, important environmental systems and species that are protected under international agreements (such as Ramsar listed wetlands) and areas that are already defined as being critically impacted in a cumulative context. Impacts may also be significant if, for example, they could cause plants or animals to become rare or endangered, or they affect vegetation which provides important ecological functions”.*

The impact assessments for the Proposal have utilised the findings of the numerous surveys and studies completed for the Proposal. K+S has assessed the residual impacts of the Proposal against the residual impact significance model provided in the WA Environmental Offsets Guidelines (EPA, 2014a). The Proposal’s predicted significant residual impacts on the environmental values are summarised in Table 2 (Environmental values under Part IV of the *Environmental Protection Act 1986* (WA; EP Act)) and the Matters of National Environmental Significance (MNES) listed in Table 3.

**Table 2: Summary of Significant Residual Impacts – Part IV EP Act Environmental Values**

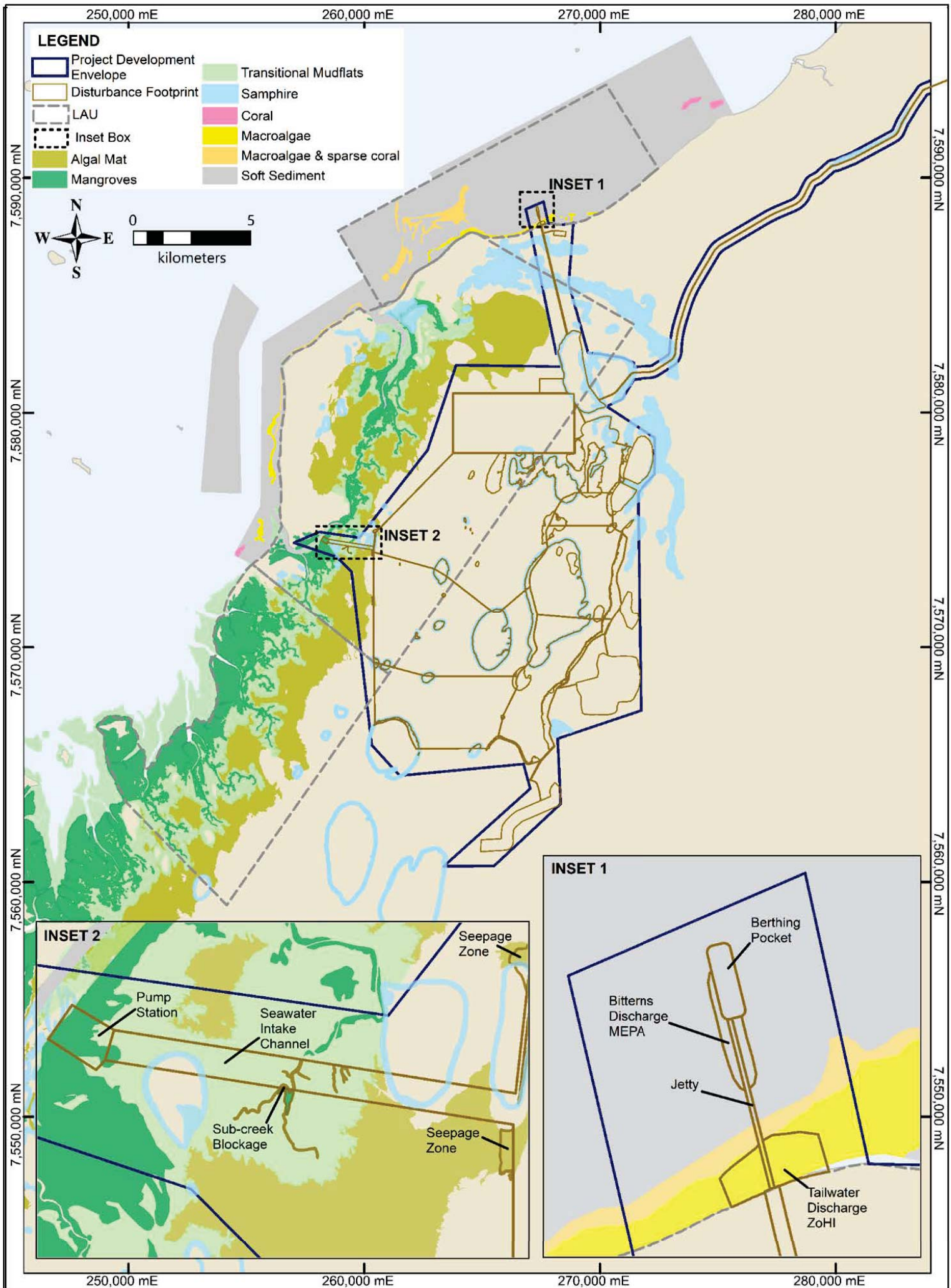
Environmental value	Other associated values	Residual Impacts	Figure reference
Nearshore BCH	Turtles, dugong, green sawfish and other elasmobranchs	Loss of up to 226.2 ha	Figure 3
Migratory Shorebirds	Green turtle juveniles and North-Western Free-tailed Bat (Priority 1) (Mangrove BCH), turtles (Sandy Beach BCH), Exmouth Gulf East Wetland (WA007) which is listed in the Directory of Important Wetlands in Australia	Loss of: <ul style="list-style-type: none"> <li>0.99 ha of Sandy Beaches BCH;</li> <li>4.28 ha of Mangroves BCH, which may also be utilised by green turtle juveniles;</li> <li>17.81 ha of Transitional Mudflat BCH;</li> <li>16.68 ha of Algal Mats BCH.</li> </ul>	Figure 3 and Figure 5
Tidal Creek BCH	Green sawfish and green turtle juveniles	Loss of 0.54 ha	Figure 5
‘Good’ to ‘Excellent’ condition native vegetation	Pilbara Olive Python and Northern Quoll	Clearing of up to 1,053 ha of good to excellent condition native vegetation, including 67 ha of foraging and dispersal habitat for Pilbara Olive Python and Northern Quoll (discussed below)	Figure 4
River bank / creekline / drainage habitat	Pilbara Olive Python and Northern Quoll	Disturbance of 0.53 ha	Figure 5



Table 3: Summary of Significant Residual Impacts – MNES

Relevant MNES	Residual Impacts	Figure reference
<b>Listed threatened species and communities (Section 18 &amp; 18A)</b>		
Migratory Shorebirds	Clearing of: <ul style="list-style-type: none"> <li>Up to 0.99 ha of Sandy Beaches habitat;</li> <li>Up to 4.57 ha of Mangroves habitat;</li> <li>Up to 17.78 ha of Transitional Mudflat habitat;</li> <li>Up to 16.69 ha of Algal Mats habitat;</li> <li>Up to 69.21 ha of Freshwater Claypan habitat.</li> </ul>	Figure 3 and Figure 5
Pilbara Olive Python ( <i>Liasus olivaceus barroni</i> ) critical habitat	Clearing of up to 0.53 ha of River bank / creekline / drainage habitat on the Ashburton River	Figure 5
Northern Quoll ( <i>Dasyurus hallucatus</i> )	Clearing of up to 0.53 ha of River bank / creekline / drainage habitat on the Ashburton River Clearing of up to 67 ha of surrounding foraging habitat	Figure 5 and Figure 4
Marine Fauna, including elasmobranchs, Marine Turtles and marine mammals	Loss of up to 226.2 ha of nearshore BCH, 4.28 ha of Mangrove BCH and 0.54 ha of Tidal Creeks BCH Indirect impacts associated with marine noise, vessel strike, water quality (from dredging and bitterns disposal) and unplanned pollution (i.e., spills)	Figure 3 and Figure 5
<b>Listed migratory species (Section 20 &amp; 20A)</b>		
Migratory Shorebirds	Clearing of: <ul style="list-style-type: none"> <li>Up to 0.99 ha of Sandy Beaches habitat;</li> <li>Up to 4.57 ha of Mangroves habitat;</li> <li>Up to 17.78 ha of Transitional Mudflat habitat;</li> <li>Up to 16.69 ha of Algal Mats habitat;</li> <li>Up to 69.21 ha of Freshwater Claypan habitat.</li> </ul>	Figure 3 and Figure 5

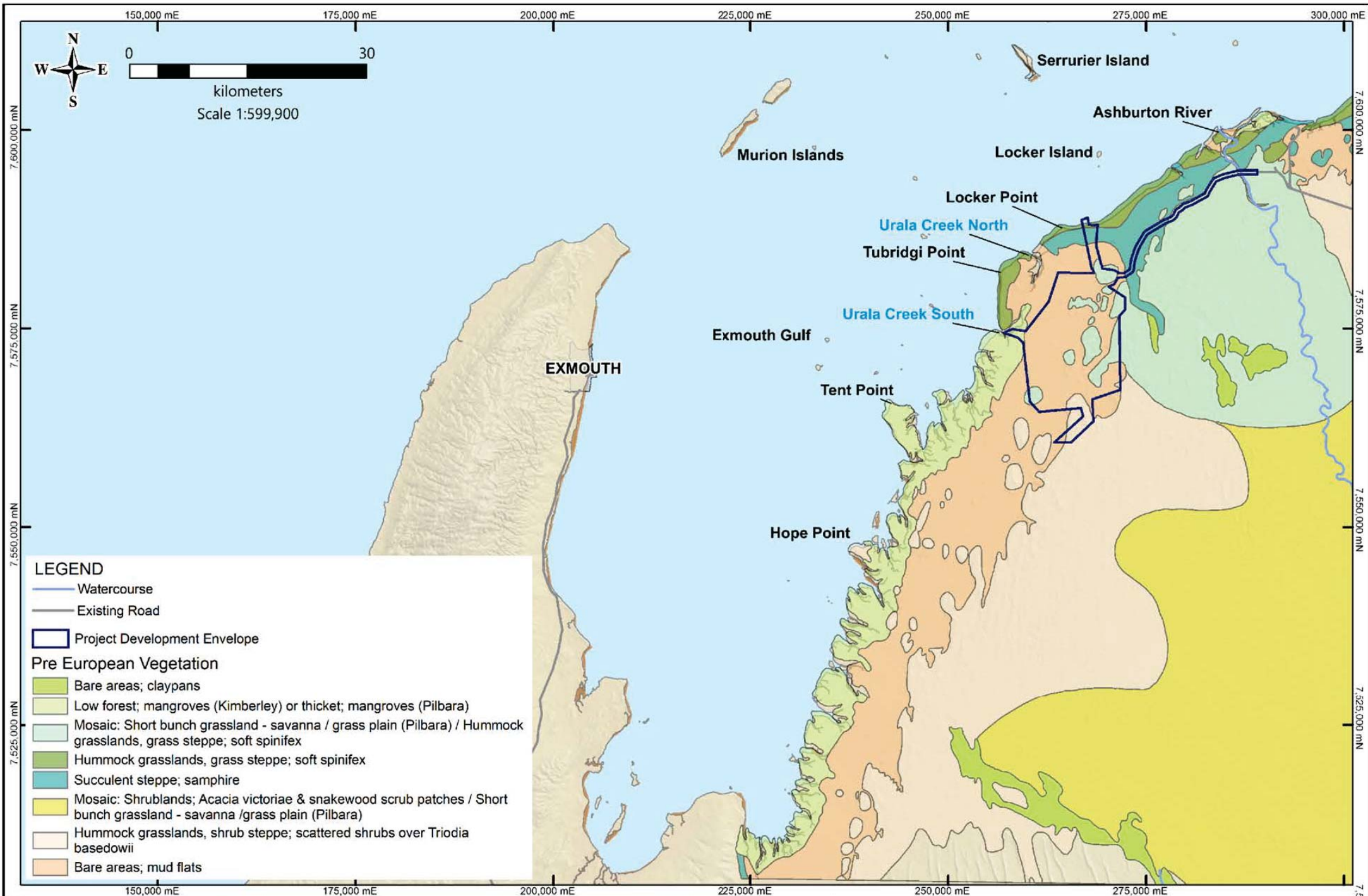




Date: 25/09/2021 Paper: A4 P GDA94, MGA50  
 Data Source: 4A, 4E, 13D, 17A  
 File Info: K04\_J10\_Local\_BCH\_20210707.WOR

Figure 3: Local Values Benthic Habitats and Communities





Date: 25/08/2021

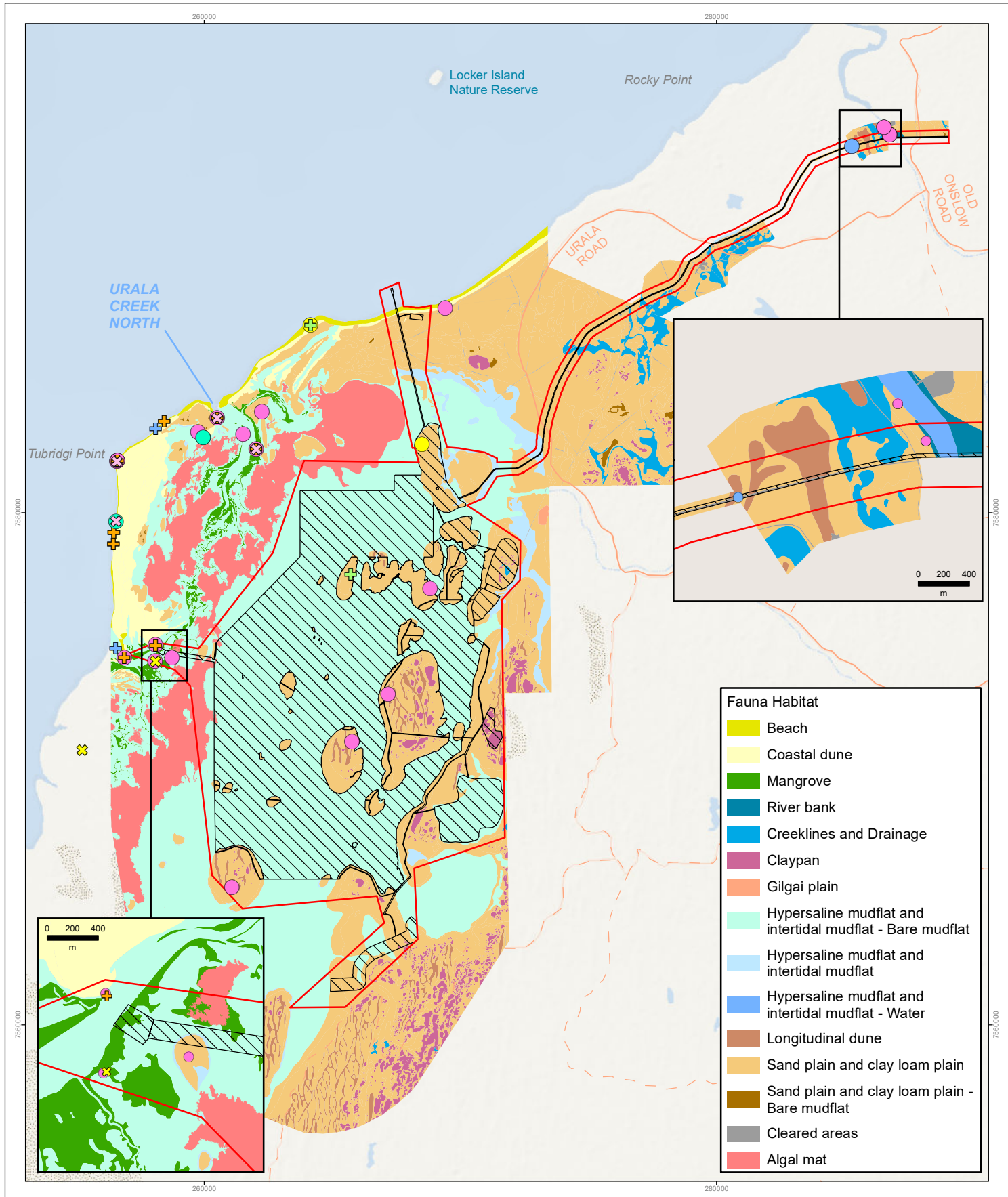
Paper: A4 L

GDA94, MGA50

Data Source: 4A, 4E, 13D, 17A

File Info: K04\_J10\_PER\_Regional\_Flora\_Veg\_20210707.WOR

Figure 4: Regional Values Flora and Vegetation



**ENVIROMAPS** t: 0406 590 006  
Environmental Mapping Solutions | www.enviromaps.com.au

**Preston Consulting**

CREATED	JOB	DATE	REVISION
ENVIROMAPS	PC2900360	1/11/2022	0

**Ashburton Salt**

0 1.25 2.5 5 km  
Scale: 1:200,000 @ A4

- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS

**LOCALITY**

**Figure 5: Local Values Terrestrial Fauna**

## 4.2 DETAILS OF PROPOSED OFFSETS

Table 4 describes the initial measures proposed to offset the significant residual impacts associated with the Proposal. These measures are subject to refinement as the Proposal assessment progresses, and pending discussions with influencing parties such as DBCA are undertaken. Further meetings with DBCA are planned to assist in the refinement of the proposed offsets, and additional offset programs may be included in the offsets package.

A key requirement for the development of the marine and intertidal offsets is the establishment of the Exmouth Gulf marine park and the development of associated management requirements.

Table 4: Proposed offsets

Offset	Type	Details	Relevant values / MNES
<p>Terrestrial land management – contribution to land management for direct and indirect impacts to Pilbara Olive Python habitat and Northern Quoll supporting habitat.</p> <p>A minimum of 200 ha of degraded Pilbara Olive Python habitat and Northern Quoll supporting habitat in the local area is proposed to be managed to improve habitat quality.</p>	Direct – management of existing habitat	<p>Large areas of the study area and the Northern Quoll supporting habitat have been heavily impacted by invasive weeds and grazing. The funds will be collated with other terrestrial fund commitments discussed below to focus on improving the quality of the broader landscape, with these specific funds focused on areas of Northern Quoll and Pilbara Olive Python habitat within the local area.</p> <p>DBCA have identified that there may be some suitable land management programs may be established at the time of approval (if approved) that could be suitable to align with. DBCA is currently conducting research and planning for these programs.</p> <p>The aim is to deliver a land management project that achieves overall biodiversity conservation outcomes.</p>	Pilbara Olive Python, Northern Quoll.
<p>Terrestrial land management – contribution to land management for direct and indirect impacts to ‘Good’ to ‘Excellent’ condition native vegetation not already offset by the measure above.</p> <p>A minimum of 3,200 ha of degraded vegetation in the local area is proposed to be managed to improve vegetation / habitat quality.</p>	Direct – management of existing flora, vegetation and fauna habitat	<p>Large areas of the study area and surrounds have been heavily impacted by invasive weeds and grazing. The funds will be collated with the terrestrial fund commitments discussed above to focus on improving the quality of the broader landscape.</p> <p>DBCA have identified that there may be some suitable land management programs may be established at the time of approval (if approved) that could be suitable to align with. DBCA is currently conducting research and planning for these programs.</p> <p>The aim is to deliver a land management project that achieves overall biodiversity conservation outcomes.</p>	Native vegetation, fauna habitat, <i>Minuria tridens</i>
Contribution of \$230,000 to a relevant scientific initiative regarding	Indirect (research) – contribution prior to or within 12 months	DBCA have noted that there are clear knowledge gaps regarding intertidal	<ul style="list-style-type: none"> <li>Migratory shorebirds</li> </ul>



Offset	Type	Details	Relevant values / MNES
<p>intertidal BCH on the eastern Exmouth Gulf shoreline.</p> <p>DBCA have noted that there are clear knowledge gaps regarding intertidal BCH on the eastern Exmouth Gulf coastline. DBCA are currently identifying research programs required for management of the marine park, there is potential for funds to be used to improve one of these research programs.</p> <p>Funding will be maintained through indexation to the Perth CPI.</p>	<p>of the commencement of construction for the purpose of research</p>	<p>BCH on the eastern Exmouth Gulf coastline.</p> <p>DBCA are currently identifying research programs required for management of the marine park, there is potential for funds to be used to improve one of these research programs.</p> <p>The proponent shall ensure that the real funding will be maintained through indexation to the Perth CPI, commencing in 2023.</p>	<ul style="list-style-type: none"> <li>• Marine fauna</li> <li>• Mangroves</li> <li>• Samphire</li> <li>• Algal Mats</li> <li>• Transitional Mudflats</li> </ul>
<p>Marine (offshore) management - \$1 million contribution to management of regional threats to the Eastern Exmouth Gulf area.</p> <p>Funding will be maintained through indexation to the Perth CPI.</p>	<p>Direct - management of marine waters, fauna and/or subtidal BCH</p>	<p>K+S is aware of plans to designate a marine park for Exmouth Gulf. It is expected that several management measures will be put in place to conserve the values of the Exmouth Gulf marine park, and K+S proposes to provide funds to either:</p> <ul style="list-style-type: none"> <li>• Extend the managed areas outside of the marine park, in areas advised by DBCA; and/or</li> <li>• Provide management within the marine park that is in addition to what is being undertaken by DBCA (to achieve better outcomes)</li> </ul>	<ul style="list-style-type: none"> <li>• Migratory shorebirds</li> <li>• Marine fauna</li> </ul>

## 5 ASSESSMENT OF PROPOSED OFFSETS – EP ACT

Offsets are the last of the four steps in the mitigation hierarchy (Avoid, Minimise, Rehabilitate and Offset). They are only applied to counterbalance residual significant impacts when the other steps have already been applied to a proposal.

K+S has commissioned numerous environmental surveys and studies for the Proposal. Assessment of these surveys and research has enabled K+S to determine key environmental values requiring protection at the Proposal, including significant BCH, marine and terrestrial fauna habitat, flora and vegetation, and areas of Aboriginal cultural value. Changes to the Proposal design have been made to avoid and minimise significant impacts to the key environmental factors during Proposal construction and operations.

The application of these avoidance and minimisation mechanisms in Proposal design and operations has meant that impacts to many key environmental values have been avoided or significantly reduced. K+S understands that this conclusion is in part based on studies and modelling, and as such monitoring has been committed to in order to verify the study and model outputs.



## 5.1 WA ENVIRONMENTAL OFFSETS GUIDELINES

K+S has assessed the residual impacts of the Proposal against the residual impact significance model provided in the WA Environmental Offsets Guidelines (EPA, 2014a). The findings of this assessment are provided in Table 5.

As described in Table 5, based on the findings of the environmental impact assessment in the ERD, K+S considers that the Proposal's potential significant residual impacts to habitat for rare flora (*Minuria tridens*), vegetation in good to excellent condition, habitat for terrestrial fauna (primarily migratory shorebirds, Pilbara Olive Python and Northern Quoll), mangroves and tidal creeks (areas of high biological diversity) may be significant and require offsets.

## 5.2 WA OFFSETS TEMPLATE

K+S has implemented the WA Offsets Template as shown in Table 6, following the requirements of the WA Environmental Offsets Guideline (EPA, 2014a).



Table 5: Assessment against Residual Impact Significant Model

Part IV Environmental Factors	Vegetation and Flora				Marine Fauna		
	Benthic Habitat and Communities				Benthic Habitat and Communities		
	Terrestrial Fauna						
Part V Clearing Principles	c – Rare flora	d – TECs	e – Remnant vegetation	f – Wetlands and waterways	h – Conservation areas	a – High biological diversity	b – Habitat for fauna
<b>Residual impact that is environmentally unacceptable and cannot be offset</b>	No residual impacts are considered to meet this criterion (refer to ERD)						
<b>Significant residual impacts that will require an offset – all significant residual impacts to species and ecosystems are protected by statute or where the cumulative impact is already at a critical level</b>	No residual impacts are considered to meet this criterion: <ul style="list-style-type: none"> <li>No Threatened Flora records are located within the disturbance footprint</li> <li>No significant Priority Flora impacts</li> </ul>	No residual impacts are considered to meet this criterion – no TECs were recorded within the Study Area	Some significant residual impacts to vegetation in ‘good’ to ‘excellent’ condition are likely to meet this criterion: Up to 1,053 ha of good to excellent condition native vegetation, including potential habitat for significant flora and fauna	Some residual impacts are considered to meet this criterion: <ul style="list-style-type: none"> <li>Direct and indirect impacts to the Exmouth Gulf East Wetland (WA007) which is listed in the Directory of Important Wetlands in Australia (EnviroWorks 2016).</li> </ul> These impacts are considered residual impacts in the context of Terrestrial Fauna (primarily Migratory Shorebirds)	Some residual impacts are considered to meet this criterion: <ul style="list-style-type: none"> <li>Direct and indirect impacts to the Exmouth Gulf East Wetland (WA007).</li> <li>Direct and indirect impacts to the Area 2 – Exmouth East Shore’ Mangrove Management Area (MMA)</li> </ul> These impacts are considered residual impacts in the context of BCH and Terrestrial Fauna (primarily Migratory Shorebirds)	Some residual impacts are considered to meet this criterion: <ul style="list-style-type: none"> <li>Mangroves and tidal creeks would be considered areas of high biological diversity – almost all of these areas have been avoided.</li> </ul>	Some residual impacts are likely to meet this criterion: <ul style="list-style-type: none"> <li>Direct and indirect impacts to potential habitat for Migratory Shorebirds (including several Threatened species)</li> <li>0.53 ha of River bank / creekline / drainage habitat on the Ashburton River that provides potential habitat for the Pilbara Olive Python and Northern Quoll</li> <li>67.00 ha of surrounding Northern Quoll foraging habitat</li> </ul>
<b>Significant residual impacts that may require an offset – any significant residual impacts to potentially threatened species and ecosystems, areas of high environmental value or where the cumulative impact may reach critical levels if not managed</b>	Potential residual impacts to <i>Minuria tridens</i> habitat may meet this criterion. Potential residual impacts to <i>Triumfetta echinata</i> , <i>Stackhousia clementii</i> , <i>Eremophila forrestii</i> subsp. <i>viridis</i> , and <i>Abuliton sp. pritzelianum</i> may meet this criterion if conservation status or scale of impact was to increase.	No residual impacts are considered to meet this criterion – no TECs were recorded within the Study Area.	No additional residual impacts are considered to meet this criterion – refer above	No additional residual impacts are considered to meet this criterion	No additional residual impacts are considered to meet this criterion	No additional residual impacts are considered to meet this criterion	No additional residual impacts are considered to meet this criterion
<b>Residual impacts that are not significant</b>	No known Threatened Flora listed under the EPBC Act or BC Act will be disturbed. Priority flora species were recorded within the development envelopes. Based on the assessments of these species in Section 10 the Proposal is unlikely to significantly impact the local or regional extent of these species.	No other residual impacts are considered to meet this criteria – refer above	Clearing of vegetation that is in poor or degraded condition will occur as a result of the Proposal however this is not considered to be a significant residual impact.	No other residual impacts are considered to meet this criteria – refer above	No other residual impacts are considered to meet this criteria – refer above	With the exception of the above, the Proposal avoids areas of high biological diversity.	Clearing of fauna habitat that is in poor or degraded condition will occur as a result of the Proposal however this is not considered to be a significant residual impact.



Table 6: WA Offsets Policy Template

Existing environment / Impact	Mitigation			Significant residual impact	Offset calculation methodology				
	Avoid and minimise	Rehabilitation type	Likely rehab success		Type	Risk	Likely offset success	Time lag	Offset quantification
<p><b>Good to Excellent Condition native vegetation</b> – clearing of up to 1,053 ha of good to excellent condition native vegetation, including potential habitat for significant flora and fauna species</p> <p><b>Pilbara Olive Python and Northern Quoll potential habitat</b> – up to 0.53 ha of river bank / creekline / drainage of the Ashburton River, and 67 ha of surrounding Northern Quoll foraging habitat</p>	<p><b>Avoid:</b> Impact to vegetation and flora have been avoided by placing most of the Proposal disturbance (salt ponds) on the bare salt flats which are devoid of vegetation</p> <p><b>Minimise:</b></p> <ul style="list-style-type: none"> <li>Minimise clearing within good to excellent quality vegetation</li> <li>Industry standard clearing controls</li> <li>Compliance with Part IV EP Act approval, Part V EP Act Works Approval and Licence, and <i>Mining Act 1978</i> approvals.</li> </ul>	<ul style="list-style-type: none"> <li>Site will be rehabilitated to reinstate the flora and vegetation.</li> <li>Vegetation to be respread with topsoil and reseeded.</li> </ul>	<p><u>Can the environmental values be rehabilitated / Evidence?</u> Yes, Pilbara rehabilitation methods are well established and while success has been varied, additional scientific information is likely to be available at closure given the long life of the Proposal.</p> <p><u>Operator experience in undertaking rehabilitation?</u> K+S will source experienced rehabilitation operators at closure.</p> <p><u>What is the type of vegetation being rehabilitated?</u> Various</p> <p><u>Time lag?</u> Up to several decades for vegetation to fully re-establish.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> Credible, Pilbara rehabilitation methods are well established and while success has been varied, additional scientific information is likely to be available at closure given the long life of the Proposal.</p>	<p><u>Extent</u> 1,053 ha</p> <p><u>Quality</u> Good to Excellent</p> <p><u>Conservation Significance</u> No formal listing on good to excellent vegetation</p> <p>Pilbara Olive Python – Vulnerable (BC Act)</p> <p>Northern Quoll – Endangered (BC Act)</p> <p><u>Land Tenure</u> Pastoral Leases, Mining Act leases</p> <p><u>Time Scale</u> Long-term, areas will remain cleared for up to 100 years</p>	Terrestrial land management – refer to Section 4.2	Low – clear management requirements (weed and grazing management) and DBCA may have established programs at the time of offset.	<p><u>Can the values be defined and measured?</u> Yes – value to ecosystem can be measured</p> <p><u>Operator experience/Evidence?</u> Experienced land managers will manage the offset (DBCA or contractor)</p> <p><u>What is the type of vegetation being revegetated?</u> N/A</p> <p><u>Is there evidence the environmental values can be re-created (evidence of demonstrated success)?</u> Evidence of successful weed control measures is available</p>	Minimal – manages habitat type and affected species soon after payment and management strategies are developed.	Offset would protect / improve / maintain the quality of significant areas of these environmental values.
<p><b>Migratory shorebird habitat</b> – Loss of:</p> <ul style="list-style-type: none"> <li>0.99 ha of Sandy Beaches habitat</li> <li>4.28 ha of Mangroves habitat (which also provides habitat for marine fauna and the North-Western Free-tailed Bat (Priority 1))</li> <li>17.81 ha of Transitional Mudflat habitat</li> <li>16.68 ha of Algal Mats habitat</li> </ul> <p>Some potential indirect impacts.</p>	<p><b>Avoid:</b> Impacts to fauna habitat have been avoided by placing most of the Proposal disturbance (salt ponds) on the bare salt flats which are devoid of vegetation and other valuable habitat features.</p> <p><b>Minimise:</b></p> <ul style="list-style-type: none"> <li>Minimise clearing within these habitat type</li> <li>Mangrove disturbance limits</li> <li>Ensure low noise and light emissions</li> <li>Industry standard clearing controls.</li> <li>Compliance with Part IV EP Act approval, Part V EP Act Works Approval and Licence, and <i>Mining Act 1978</i> approvals.</li> </ul>	<ul style="list-style-type: none"> <li>All buildings and structures on land will be removed from the site and the pond areas may be selectively reconnected to the existing tidal flat system, with consideration of the ponds becoming fauna habitat for shore birds</li> <li>Brine and salts to be removed from ponds</li> <li>Pond walls to be breached to allow flows to re-enter the pond footprint, with consideration of BCH that has become established on the pond walls</li> </ul>	<p><u>Can the environmental values be rehabilitated / Evidence?</u> Yes, the majority of the disturbance is bare mudflat and will remain at closure. Natural processes are expected to gradually reinstate the remaining BCH, although some boundaries may be altered due to SLR. BCH are relatively dynamic due to cyclone events.</p> <p><u>Operator experience in undertaking rehabilitation?</u> None required, rehabilitation will occur via natural processes.</p> <p><u>What is the type of vegetation being rehabilitated?</u> Algal mat, transitional mudflat, samphire and some mangrove BCH</p> <p><u>Time lag?</u> Up to two years to remove salts depending on rainfall events, then several decades for BCH to re-establish</p>	<p><u>Extent</u></p> <ul style="list-style-type: none"> <li>0.99 ha of Sandy Beaches habitat</li> <li>4.28 ha of Mangroves habitat</li> <li>17.81 ha of Transitional Mudflat habitat;</li> <li>16.68 ha of Algal Mats habitat</li> </ul> <p><u>Quality</u> Good to Excellent</p> <p><u>Conservation Significance</u> Various – threatened and migratory species.</p> <p><u>Land Tenure</u> Unallocated Crown Land, Mining Act leases</p> <p><u>Time Scale</u></p>	Research – refer to Section 4.2	Low – DBCA has identified suitable research benefits	<p><u>Can the values be defined and measured?</u> Yes – value to ecosystem can be measured due to increased knowledge base</p> <p><u>Operator experience/Evidence?</u> DBCA is likely to manage the offset if integrated into an existing program. Otherwise experienced organisation will be engaged.</p> <p><u>What is the type of vegetation being revegetated?</u> N/A</p> <p><u>Is there evidence the environmental values can be re-created (evidence of demonstrated success)?</u> There is evidence in the Pilbara of mangroves growing on man-made structures.</p>	Minimal – funding is intended to be provided to an established research program	Offset would provide important information to better manage and protect this environmental value.



Existing environment / Impact	Mitigation			Significant residual impact	Offset calculation methodology					
	Avoid and minimise	Rehabilitation type	Likely rehab success		Type	Risk	Likely offset success	Time lag	Offset quantification	
			<u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> Credible, intertidal processes are dynamic and will flush the area and allow BCH to spread across the area over time. There is evidence in the Pilbara of mangroves growing on man-made structures.	Long-term, areas will remain cleared for up to 100 years						
<b>Marine Fauna:</b> <ul style="list-style-type: none"> <li>Loss of up to 226.2 ha of nearshore BCH, 4.28 ha of Mangrove BCH and 0.54 ha of Tidal Creeks BCH</li> <li>Indirect impacts associated with marine noise, vessel strike, water quality (from dredging and bitterns disposal) and unplanned pollution (i.e., spills)</li> </ul>	<b>Avoid:</b> Impacts to marine fauna habitat have been avoided by placing most of the Proposal disturbance (salt ponds) away from the coastline.  <b>Minimise:</b> <ul style="list-style-type: none"> <li>Minimise disturbance within subtidal BCH</li> <li>Dilute bitterns prior to discharge</li> <li>Mangrove disturbance limits</li> <li>Ensure low marine noise and light emissions</li> <li>Implement management plans.</li> <li>Compliance with Part IV EP Act approval, Part V EP Act Works Approval and Licence, and <i>Mining Act 1978</i> approvals.</li> </ul>	Jetty and seawater intake will be removed and the dredge pocket will be allowed to re-fill with sediment over time.	<u>Can the environmental values be rehabilitated / Evidence?</u> Yes, there is minimal infrastructure in the marine environment  <u>Operator experience in undertaking rehabilitation?</u> No specific experience required, rehabilitation will occur via natural processes.  <u>What is the type of vegetation being rehabilitated?</u> Subtidal BCH  <u>Time lag?</u> Up to two years to remove infrastructure, then several decades for natural seabed profile to establish.  <u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> Credible given simple nature proposed.	<u>Extent</u> Loss of up to 226.2 ha of nearshore BCH, 4.28 ha of Mangrove BCH and 0.54 ha of Tidal Creeks BCH, indirect impacts  <u>Quality</u> High quality  <u>Conservation Significance</u> Provides habitat for several Threatened and Migratory species  <u>Land Tenure</u> xx  <u>Time Scale</u> Direct impacts likely to remain in the long-term, and some indirect impacts (bitterns disposal) to continue over a long time period (up to 100 years)	Marine (offshore) management - \$1 million contribution to management of regional threats to the Eastern Exmouth Gulf area. Funding will be maintained through indexation to the Perth CPI.	Low – similar measures are predicted to be implemented for the Exmouth Gulf marine park when implemented	<u>Can the values be defined and measured?</u> Yes – value to ecosystem can be measured  <u>Operator experience/Evidence?</u> Marine park managers may manage the offset (DBCA), or experienced contractor will be engaged  <u>What is the type of vegetation being revegetated?</u> N/A  <u>Is there evidence the environmental values can be re-created (evidence of demonstrated success)?</u> Exmouth Gulf is susceptible to numerous environmental threats which can be reduced by the proposed offset.	Minimal – manages habitat type and affected species soon after payment and management strategies are developed.	Offset would protect / improve / maintain the quality of significant areas of these environmental values.	





## 5.3 OFFSET PRINCIPLES

Six principles support the assessment and decision-making process undertaken by the WA Government in relation to the use of environmental offsets. These principles are set out in the Environmental Offsets Policy (EPA, 2011). The Proposal and proposed offsets have been assessed against each of these principles, as provided in Table 7.

Table 7: Assessment of the proposed offsets against the six principles

Number	Principle	Consideration
1	Environmental offsets will only be considered after avoidance and mitigation options have been pursued.	K+S has applied the mitigation hierarchy by identifying measures to avoid, minimise and rehabilitate potential impacts. The primary action taken to meet this policy's requirements was site selection and design, which avoided and minimised impacts to key environmental features, and reduced the development envelope and required disturbance to the smallest size possible.
2	Environmental offsets are not appropriate for all projects.	It is acknowledged that offsets are not appropriate for all projects. As the Proposal is predicted to result in residual significant impacts, environmental offsets are considered to be appropriate as they are not at a scale that would lead to significant long-term impacts to local populations of listed flora or fauna (refer to the findings presented in the ERD).
3	Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.	K+S proposes to contribute funding into land management for residual impacts to terrestrial habitats. There is a clear requirement for land management in the area (due to weed infestation) and therefore the funding will be cost-effective and is relevant and proportionate to the Proposal's potential significant residual impacts.  K+S also intends to contribute funding for research and management of marine fauna and intertidal areas near the Exmouth Gulf. These offsets are cost-effective as they are designed to align with existing or planned programs (rather than be stand-alone). These offsets are relevant and proportionate to the Proposal's potential significant residual impacts based on a review of offsets for the Mardie Project, with additional consideration of the significance of the Exmouth Gulf area for marine fauna.
4	Environmental offsets will be based on sound environmental information and knowledge.	The proposed offsets are based on knowledge gained during studies for the Proposal, and regional knowledge collated by WAMSI and DBCA for the Exmouth Gulf.
5	Environmental offsets will be applied within a framework of adaptive management.	The management programs can be adaptively managed to adjust their delivery over time as more information and opportunities become available.  The proposed research program will be developed to include a review and revision component to ensure it utilises the most up-to-date information and research measures.
6	Environmental offsets will be focused on longer term strategic outcomes.	The management and research programs will be developed to focus on longer-term strategic outcomes.

## 5.4 WA OFFSETS CALCULATOR

The WA offsets calculator is only relevant to the offsets proposed for the disturbance of terrestrial impacts as the other proposed offsets are not land management offsets. A copy of the WA offsets calculator is provided for Good to Excellent quality vegetation and Northern Quoll and Pilbara Olive Python (combined) in Appendix 1 and 2 respectively.



The following values were used in the calculators:

- Disturbance to 67.53 ha of Northern Quoll and Pilbara Olive Python habitat (including 0.53 ha of denning / shelter habitat);
- Disturbance to 986 ha of Good to Excellent quality vegetation (total area disturbed minus the Northern Quoll and Pilbara Olive Python habitat already included in that calculator);
- Rehabilitation credit – zero. Given the long life of the Proposal a conservative position has been taken regarding rehabilitation;
- Quality of disturbed habitat = 7. Biota (2022) shows that the Ashburton River and surrounds varied from Poor to Very Good Quality, with no Excellent quality vegetation identified in that area, and limited extent in the surrounds. A score of 7 was deemed to be a reasonable average.
- Minimum area targeted for land management = 200 ha for Northern Quoll and Pilbara Olive Python habitat offsets, and 3,200 ha for Good to Excellent quality vegetation offsets;
- Quality of area proposed to be targeted for land management = 4, based on targeting areas mapped as being in ‘Poor’ condition;
- Future quality of offset management areas without the offset = 3, based on expected gradual decline in quality over time;
- Future quality of offset management areas with the offset = 6, reasonable improvements based on clear options available through weed and grazing control;
- Risk of loss with and without offset = 10% (for both scenarios). The site is not being acquired for conservation therefore there is no difference between the risk of loss; and
- Confidence in result = 80%. Relatively conservative values have been used above, leading to a high confidence in the result.

---

## 6 ASSESSMENT OF PROPOSED OFFSETS – EPBC ACT

---

The Commonwealth Minister for the Environment determined that the Proposal (EPBC 2016/7793) is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth; EPBC Act)* as it is likely to have a significant impact on one or more MNES.

The DCCEEW decided that the Proposal will be assessed by EPA as an EPBC Act accredited assessment under Part IV of the EP Act due to the following potentially significant factors:

- Listed threatened species and communities (sections 18 & 18A);
- Listed migratory species (sections 20 & 20A); and
- Commonwealth marine areas (sections 23 & 24A).

The Proposal will be assessed as an ‘accredited assessment’ under Part IV of the EP Act. Section 87 of the EPBC Act makes provisions for the EPA to undertake this accredited assessment of the potential impacts to MNES on behalf of DCCEEW.



## 6.1 COMMONWEALTH ENVIRONMENTAL OFFSETS GUIDELINES

Offsets are defined as measures that compensate for the residual adverse impacts of an action on the environment. Where appropriate, offsets are considered during the assessment phase of an environmental impact assessment under the EPBC Act.

The EPBC Act Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC (now DCCEEW); 2012a) states:

*“The term ‘environmental offsets’ refers to measures that compensate for the residual adverse impacts of an action on the environment. Offsets provide environmental benefits to counterbalance the impacts that remain after avoidance and mitigation measures. These remaining, unavoidable impacts are termed ‘residual impacts’. For assessments under the EPBC Act, offsets are only required if residual impacts are significant.*

*Offsets can help to achieve long-term environmental outcomes for matters protected under the EPBC Act, while providing flexibility for proponents seeking to undertake an action that will have residual impacts on those protected matters.”*

## 6.2 OFFSET PRINCIPLES

Table 8 provides the overarching principles that are applied in determining the suitability of offsets. In assessing the suitability of an offset, government decision-making will be informed by scientifically robust information and incorporate the precautionary principle in the absence of scientific certainty and conducted in a consistent and transparent manner.

**Table 8: EPBC Act overarching principles applied in determining the suitability of offsets**

No.	Principle	Offset suitability
1	Offsets must deliver an overall conservation outcome that improves or maintains the viability of the environmental aspect that is protected by national environment law and affected by the proposed action	K+S proposes to contribute to land management for residual impacts to terrestrial habitats. There is a clear requirement for land management in the area (due to weed infestation) and therefore the funding will deliver an overall conservation outcome that improves or maintains the viability of the environmental aspect that is protected by national environment law and affected by the proposed action.  K+S also intends to contribute funding for research and management of marine fauna and intertidal areas near the Exmouth Gulf. These offsets are cost-effective as they are designed to align with existing or planned programs (rather than be stand-alone). These offsets are delivering an overall conservation outcome that improves or maintains the viability of the environmental aspect that is protected by national environment law and affected by the proposed action.
2	Offsets must be built around direct offsets but may include other compensatory measures	K+S has proposed direct offsets as well as research (indirect offset). The WA DBCA identified a lack of scientific knowledge about the intertidal BCH on the eastern Exmouth Gulf coastline. Research offsets were therefore deemed appropriate to offset intertidal residual impacts as the research will result in positive conservation outcomes, address priority knowledge gaps and provide critical information to improve environmental assessment of future projects.
3	Offsets must be in proportion to the level of statutory protection that applies to the protected matter	K+S acknowledged the various levels of statutory protection that apply to the protected matters. This was considered when assessing the significance of the residual impacts. The scale of the proposed offsets takes into account these considerations.



No.	Principle	Offset suitability
4	Offsets must be of a size and scale proportionate to the residual impacts on the protected matter	The proposed offsets are significant in size and scale, proportionate to the predicted residual impacts. The information gathered during the research offsets will inform management on a regional scale, providing valuable scientific knowledge to inform regional and strategic protection of these values.
5	Offsets must effectively account for and manage the risks of the offset not succeeding	This Offset Strategy will continue to be revised to include detailed information about each research program, including its management, governance and outcomes. These will be developed in consultation with relevant stakeholders to ensure that there is minimal risk of the offset not succeeding.
6	Offsets must be additional to what is already required, determined by law or planning regulations, or agreed to under other schemes or programs	The proposed offsets are in addition to that which is already required, determined by law or planning regulations, or agreed to under other schemes or programs.
7	Offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable	A final version of this Offset Strategy will include detailed information about timeframes and transparency of information. The research program will be implemented in consultation with relevant stakeholders to ensure that it is effective, scientifically robust and reasonable.
8	Offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced	Section 10 of this Offset Strategy provides information about the transparent governance proposed to be implemented during the development and implementation of the research programs. This information will be revised as further details become available during the detailed planning phase.  The research programs will be able to be readily measured, monitored, audited and enforced.

## 6.3 OFFSET CALCULATOR

The EPBC offsets calculator is only relevant to the offsets proposed for the disturbance of potential Northern Quoll and Pilbara Olive Python as the other EPBC offsets are not land acquisition / management offsets. A copy of the EPBC calculator is provided for Northern Quoll and Pilbara Olive Python in Appendix 3.

The following values were used in the calculator:

- Disturbance to 67.53 ha of Northern Quoll and Pilbara Olive Python habitat (including 0.53 ha of denning / shelter habitat);
- Quality of disturbed habitat = 7. Biota (2022) shows that the Ashburton River and surrounds varied from Poor to Very Good Quality, with no Excellent quality vegetation identified in that area.
- Minimum area targeted for land management = 200 ha;
- Quality of area proposed to be targeted for land management = 4, based on targeting areas mapped as being in 'Poor' condition;
- Future quality of offset management areas without the offset = 3, based on expected gradual decline in quality over time;
- Future quality of offset management areas with the offset = 6, based on clear improvements available through weed control;
- Risk of loss with and without offset = 10% (for both scenarios). The site is not being acquired for conservation therefore there is no difference between the risk of loss; and



- Confidence in result = 80%. Relatively conservative values have been used above, leading to a high confidence in the result.

## 7 OBJECTIVES, TARGETS, AND COMPLETION CRITERIA

Table 9 sets out the objectives, targets, and completion criteria for the proposed offsets.

Table 9: Objectives, targets, and completion criteria

Objective	Target	Completion Criteria
To counterbalance the Proposal's significant residual impact to direct and indirect impacts to Pilbara Olive Python habitat and Northern Quoll supporting habitat.	Land management program improves the quality of similar habitat in the local area over the long-term.	<ul style="list-style-type: none"> <li>• Land management program agreed with DBCA, DWER and DCCEE within 12 months of commencement</li> <li>• Monitoring demonstrates that habitat quality improved as a result of the management program</li> <li>• Approval of Offset Strategy</li> </ul>
To counterbalance the Proposal's significant residual impact to 1,053 ha of vegetation in 'Good' to 'Excellent' condition.	Land management program improves the quality of similar vegetation in the local area over the long-term.	<ul style="list-style-type: none"> <li>• Land management program agreed with DBCA, DWER and DCCEE within 12 months of commencement</li> <li>• Monitoring demonstrates that vegetation quality improved as a result of the management program</li> <li>• Approval of Offset Strategy</li> </ul>
To counterbalance the significant residual impact to intertidal BCH, including potential habitat for Migratory Shorebirds, the Exmouth Gulf East Wetland and Area 2 – Exmouth East Shore' MMA as a result of implementation of the Proposal.	Research programs established and completed that provide outcomes that clearly assist in the conservation of the eastern Exmouth Gulf coastline.	<ul style="list-style-type: none"> <li>• Funding and management structure established and agreed by DWER and DCCEE within 12 months of commencement.</li> <li>• Required funding provided by due dates.</li> <li>• Research program outcomes include clear recommendations for the protection of Intertidal BCH on the eastern Exmouth Gulf coastline.</li> <li>• Approval of Offset Strategy.</li> </ul>
To counterbalance the significant residual impact to marine fauna as a result of implementation of the Proposal.	Management programs provide further protection of marine fauna that exist within the future marine park.	<ul style="list-style-type: none"> <li>• Funding and management structure established and agreed by DBCA, DWER and DCCEE within 12 months of commencement</li> <li>• Required funding provided by due date</li> <li>• Approval of Offset Strategy</li> </ul>

## 8 MONITORING

Routine monitoring is necessary to ensure the proposed offsets are effective in counterbalancing the significant residual impacts on the environmental values. Table 10 provides a framework for the monitoring required, however, final monitoring requirements and timings will be determined during agreements with DBCA, DWER, DCCEE and / or other relevant parties.



Table 10: Offset monitoring schedule

Offset	Monitoring	Timing
Contribution for terrestrial land management to support native vegetation in 'Good' to 'Excellent' condition, Pilbara Olive Python habitat and Northern Quoll habitat within the local area.	Contributions to the land management program monitored against the actual disturbance of native vegetation in 'Good' to 'Excellent' condition and each habitat recorded.	Calculated every two years
Provision of funding (adjusted yearly for CPI) for research program	As per the requirements of each research program (once established)	Initial payment prior to the commencement of construction. Remaining payments as per the requirements of each research program (once established)
Contribution of \$1 million to funding marine (offshore) management of regional threats to the Eastern Exmouth Gulf area and / or support management of the DBCA proposed marine park within the local area.	As per the requirements of the management programs (once established)	Initial payment prior to the commencement of construction. Remaining payments per the requirements of the management programs (once established)

## 9 FUNDING ARRANGEMENTS

Funding arrangements for the research and management programs are to be established in accordance with the Ministerial Statement (if approved) and EPBC 2016/7793 conditions. The funding will be paid to the appropriate third-party management authority for each program. All funding arrangements will be authorised by DWER and DCCEEW prior to establishment.

## 10 MANAGEMENT, ROLES, AND RESPONSIBILITIES

This section is to be revised once the final decisions are made on the management and research program(s), and how they are integrated with DBCA programs. Decision will be made in agreement with EPA, DCCEEW and DBCA.

## 11 REVIEW AND REVISION

This Offset Strategy is to be reviewed once details of the proposed research and management programs have been finalised. It will then be reviewed at least every five years, or more frequently under the following circumstances:

- Following a significant environmental incident that threatens the success of the proposed offsets;
- When there is a need to improve performance in an area of environmental conservation;
- When there are changes to activities that are being managed under this Offset Strategy; or
- When there are new activities that should be managed under this Offset Strategy.



The review is to assess whether the Offset Strategy is achieving its objectives and the requirements of approval conditions. The review is also to consider environmental monitoring records, response actions taken and the results of any internal and external audits. During the review process, the reasons for varying the Offset Strategy are to be documented. The review may be initiated by any party that has a management responsibility for the implementation of the offsets or at the request of a Government agency that has an interest in the Offset Strategy (including DCCEEW, DBCA, DWER and DMIRS).

---

## 12 CONCLUSION

---

K+S has assessed the impacts of the Proposal against the Residual Impact Significance Model (EPA, 2014a) and has determined that the Proposal is likely to result in a significant residual impact to several environmental values, including MNES.

If approved, K+S predicts that offset conditions will be included in the Ministerial Statement and EPBC Act approval to counterbalance the significant residual impacts of the Proposal. This Offset Strategy provides additional detail regarding the offsets proposed for the Proposal.

The Offset Strategy will be updated upon further discussions with DCCEEW, DWER, DBCA, DMIRS and other relevant stakeholders.

The suitability of the proposed offsets has been assessed against the six offset principles set out in the Environmental Offsets Policy (EPA, 2011), the Commonwealth offset principles (DSEWPaC, 2012a) and the WA Environmental Offsets Template (EPA, 2014b). The WA and Commonwealth offsets calculators were used where relevant to provide context to the scale of some of the offsets. Based on this assessment the proposed offsets are considered to be relevant and proportionate to the significance of the environmental value and MNES being impacted.



## 13 REFERENCES

Biota (2022). *Ashburton Salt Project Detailed Vegetation and Flora Survey*. Perth: Unpublished Data Prepared for K+S Salt Australia.

Department of Sustainability, Environment, Water, Population and Communities (2012a). *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*. Canberra: DSEWPaC, Commonwealth of Australia. October 2012.

Environmental Protection Authority (2011). *WA Environmental Offsets Policy*. Perth, Western Australia.

Environmental Protection Authority (2014a). *WA Environmental Offsets Guidelines*. Government of Western Australia. August 2014.

Environmental Protection Authority (2014b). *WA Environmental Offsets Template*. Government of Western Australia.

EnviroWorks Consulting (2016). *Ashburton Salt Project, EPA Referral Supporting Document*. K plus S Salt Australia Pty Ltd. October 2016.

Ministerial Council on Mineral and Petroleum Resources (2005). *Principles for Engagement with Communities and Stakeholders*. Environmental Defender's Office New South Wales. March 2005.

## 14 GLOSSARY

Term	Meaning
BCH	Benthic Communities and Habitats
BTAC	Buurabalayji Thalanyji Aboriginal Corporation
CCG	Cape Conservation Group
CPI	Consumer Price Index
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DMIRS	Department of Mines, Industry Regulation and Safety
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DWER	Department of Water and Environmental Regulation
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EPA	Environmental Protection Authority (WA)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
ERD	Environmental Review Document
ESD	Environmental Scoping Document
ha	hectares
K+S	K plus S Australia Pty Ltd





Term	Meaning
km	kilometres
MCMPR	Ministerial Council on Mineral and Petroleum Resources
MNES	Matters of National Environmental Significance
Proposal	The Ashburton Salt Project
TEC	Threatened Ecological Community
WA	Western Australia

---

## 15 APPENDICES

---

Appendix 1: WA offsets calculator for Good to Excellent quality vegetation

Appendix 2: WA offsets calculator for Northern Quoll and Pilbara Olive Python (combined)

Appendix 3: EPBC calculator for Northern Quoll and Pilbara Olive Python

