



SHIRE OF EXMOUTH

Attachments

Ordinary Council Meeting – 24 March 2022



**Shire of Exmouth
Local Planning Scheme No. 4**

Amendment No. 9

Summary of Amendment Details

Modify Clause 4.17.1 for Holiday Accommodation/Holiday House and insert a new Figure 11.

Planning and Development Act 2005

**RESOLUTION TO PREPARE AMENDMENT
TO LOCAL PLANNING SCHEME**

***Shire of Exmouth Local Planning Scheme 4
Amendment No. 9***

Resolved that the Local Government pursuant to section 75 of the *Planning and Development Act 2005*, amend the above Local Planning Scheme by:

- i. Modifying clause 4.17.1 for Holiday Accommodation / Holiday House to the following:

Holiday Accommodation and Holiday House shall not be permitted in the Skipjack Circle area as defined in Figure 11: Skipjack Circle Area.
- ii. Inserting a new 'Figure 11: Skipjack Circle Subdivision Area' into the Table of Figures.
- iii. Amending the Table of Contents accordingly.

The amendment is standard under the provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* for the following reason(s):

- a. The amendment is consistent with the relevant objectives of the Scheme and Local addressed by the Shire of Exmouth Local Planning Strategy;
- b. The amendment does not result in any significant environmental, social, economic or governance impacts on land in the scheme area; and
- c. The amendment is not a basic or complex amendment.

Dated this _____ day of _____ 20__

(Chief Executive Officer)

Amendment Report

1.0 INTRODUCTION

Holiday accommodation and holiday houses are residential dwellings that are leased out for short term accommodation for a period not exceeding 3 months, and are an important aspect for the local tourism industry in Exmouth.

Over the last few years, there has been ongoing discussion in the community regarding the impact of holiday homes on neighbourhoods and the suitability of certain locations.

Clause 4.17.1 of LPS 4 reads as follows:

“Holiday Accommodation and Holiday House shall not be permitted in the Skipjack Circle Subdivision.”

The purpose of the amendment is to define the Skipjack Circle area by inserting a Figure (11) into LPS 4.

2.0 BACKGROUND

The permanent residential population within Exmouth is approximately 3,000 people. Anecdotal evidence suggests that during peak times, visitor numbers have swelled to approximately 15,000 in 2020-21, which has also been due to the travel restrictions and increased visitations during the COVID-19 pandemic.

There is high demand for holiday homes within the Shire of Exmouth, from both visitors and landowners alike. This needs to be balanced with the amenity of neighbouring properties. If not properly managed, holiday homes may result in excessive noise late in the evening, excessive vehicles and trailers being parked on the road verge and excess rubbish in bins from large numbers of guests.

Exmouth is currently experiencing a housing crisis. Land sales have significantly increased and property constraints have delayed new land releases.

The town relies heavily on temporary seasonal workers to support the tourism industry. These seasonal workers require access to housing, but the increasing popularity of the town as a tourist destination has proven problematic for the supply of suitable housing. The high number of dwellings now rented out on a short-term basis has led to a shortage for seasonal workers, and for local residents who rely on rental accommodation. This has given rise to large occupant numbers in shared accommodation, people living in cars or camping illegally, which in turn has given rise to environmental and other issues.

Currently the Skipjack Circle subdivision area is defined as all the coloured lots, (as shown in Figure 1 below), however, the boundary is not currently implemented through an appropriate planning document.



Figure 1. Current Skipjack Circle Subdivision Area.

This area was identified in the Shires previous Local Planning Policy 6.12 – Holiday Accommodation. The LPP 6.12 was rescinded by Council at the Shires 28 February 2019 Ordinary Council Meeting, as the provisions of the existing policy were included in LPS 4. The map however, was not included into LPS4.

There are currently 16 lots along the northern side of Skipjack Circle which are outside of the area to which previous Policy 6.12 applied. The proposed amendment seeks to amalgamate these lots into the defined Skipjack Circle area, thereby restricting un-hosted holiday houses and holiday accommodation from being approved.

Location

Skipjack Circle is Exmouth’s northern most residential area located 1km to the north-west of the Exmouth Town Centre.

The subject land is almost entirely built out. Land to the north and east is Department of Defence landholdings. Land on the opposite side of Skipjack Circle to the south west is residential and reserved public open space to the south east.

Infrastructure

The subdivision area is connected to reticulated scheme water and sewerage. Underground power is also provided.

3.0 STATE & REGIONAL PLANNING CONTEXT

State Planning Policy 6.3 - Ningaloo Coast

The amendment is broadly consistent with State Planning Policy 6.3 - Ningaloo Coast (SPP 6.3), which aims to facilitate sustainable development and consolidate development within the townsite.

Gascoyne Regional Planning and Infrastructure Framework

The amendment supports several of the strategic goals identified within the Gascoyne Regional Planning and Infrastructure Framework. The proposed amendment will enable economic and social opportunities for seasonal workers and longer-term renters, helping Exmouth with being a top destination where people want to live and work.

4.0 LOCAL PLANNING CONTEXT

Shire of Exmouth Local Planning Strategy

The Shire's Local Planning Strategy (Strategy) recognises the importance of tourism in Exmouth, however, notes that the type of accommodation, location and impacts need to be considered.

The Strategy also notes that holiday accommodation and holiday houses are an important component in the overall mix of accommodation but that due to their nature of use, conflicts relating to land use inevitably occur. Therefore, they require regulation and appropriate consideration.

Shire of Exmouth Local Planning Scheme No. 4 (LPS4)

The area is zoned Residential, with a predominant r-code density of R17.5, with the exception of an R30 pocket to the south of the existing park on Snapper Loop.

The following aims of the Scheme are relevant to this proposal:

- (c) facilitate planning for the appropriate balance between economic and social development, public health, conservation of the natural environment, and improvements in lifestyle and amenity; and
- (d) define the uses and types of development to be permitted on land within the Scheme Area; and
- (e) control and regulate the development of land, erection and demolition of buildings, and the carrying out of works.

Tourism Planning Guidelines

The Tourism Planning Guidelines are aimed towards assisting with the tourism components of local planning strategies. However, the guidelines note the conflicts that can arise between permanent residents and tourists.

Planning Bulletin 99: Holiday Homes Guidelines

The objectives of WAPC's Planning Bulletin 99 – Holiday Homes Guidelines (PD 99) is to establish clear guidelines for the short stay use of residential homes for tourism accommodation, to ensure that they occur in appropriate locations and that all new holiday home rental accommodation is in accordance with relevant legislation, local planning schemes, policies, and managements plans.

The guidelines furthermore set out recommendations for certain conditions in relation to development approvals, such as the provisions of a management plan, fire and emergency response plan and approval period. These and other conditions controlling short-term accommodation are already included under section 4.17 of the LPS 4.

The amendment has been prepared having due regard to this guideline.

Draft Position Statement: Planning for Tourism and guidelines

The draft document aims to provide clear and consistent guidance on the definition and treatment of short-term rental accommodation to:

- Complement existing local planning frameworks.
- Encourage a consistent approach to managing and regulating short-term rental accommodation amongst local governments.
- Provide greater clarity for short-term rental accommodation providers and the broader community.

The following policy objective is relevant to the amendment:

- Ensure land use impacts between tourism activities and other land uses (including residential areas) are appropriately managed.

Further expanding on the current Tourism Planning Guidelines and PB 99, the draft policy provides guidance on the location of short-term accommodation. Short-term rental accommodation should be located in tourism amenity areas, in close proximity to social, cultural and leisure attractions. This also includes the need to mitigate impacts on surrounding land uses, and minimise adverse interface issues between residential and short-term accommodation uses.

The proposed amendment will remove the current interface issue between the lots on south side of Snapper Loop that are outside of the existing Skipjack Circle subdivision area, and is considered a logical solution. The area is in the northern most part of town, and there are other areas available closer to the town centre, Town Beach and Marina with access to services that are more suitable for short-term accommodation.

5.0 PROPOSAL

The proposed amendment seeks to provide clarity and define the skipjack circle subdivision area by inserting a Figure (11) into LPS 4.

The land uses Holiday Accommodation and Holiday Houses would not be permitted on land identified in the proposed Figure 11 below.

Holiday houses and holiday accommodation approvals are approved on an annual basis.

6.0 JUSTIFICATION

A number of approvals have been granted for Holiday House and/or Holiday Accommodation for lots on the southern portion of Skipjack Circle (outside of the current boundary). There have been a number of complaints relating to the use of these properties as short term accommodation.

It is considered that in the current climate of the housing crisis it would be beneficial to reduce the number of dwellings available for short-stays/holiday rentals and to increase opportunities for longer term rentals.

Currently, residents on the southern portion of Snapper Loop are directly impacted to the rear of their properties by the use of dwellings on Skipjack Circle for holiday houses/accommodation.

Extending the area to include all lots to the north of Skipjack Circle will be orderly and proper planning and will alleviate some of the tensions surrounding holiday homes and holiday accommodation in the area.

Under the proposed amendment, the closest possible interaction will be separated by more than 20m, across the Skipjack Circle Road reserve.

Notwithstanding the proposed amendment, landowners would still be able to provide hosted bed and breakfast accommodation. This is defined as short term accommodation for up to four adults (or one family) in a maximum of two guest bedrooms. This is considered low-scale and incidental to the permanent residential uses, as the host resides on the property and can manage guests and deal with any issues.

Amendment type

The amendment is standard under the provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* for the following reason(s):

- a. The amendment is consistent with the relevant objectives of the Scheme and Local addressed by the Shire of Exmouth Local Planning Strategy;
- b. The amendment does not result in any significant environmental, social, economic or governance impacts on land in the scheme area; and
- c. The amendment is not a basic or complex amendment.

7.0 CONCLUSION

This amendment seeks to remove any doubt by clearly identifying the extent of the Skipjack Circle area in a cogent manner, for where holiday homes are not considered appropriate. This will assist with the housing crisis and ultimately reduce land use conflicts between short-term guests and permanent residents in the area.

Figure 11 - Skipjack Circle Area



COUNCIL ADOPTION

This Standard Amendment was adopted by resolution of the Council of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 2022.

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

COUNCIL RESOLUTION TO ADVERTISE

by resolution of the Council of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 2022, proceed to advertise this Amendment.

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

COUNCIL RECOMMENDATION

This Amendment is recommended for support by resolution of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 20__ and the Common Seal of the Shire of Exmouth was hereunto affixed by the authority of a resolution of the Council in the presence of:

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

WAPC ENDORSEMENT (r.63)

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**DELEGATED UNDER S.16 OF
THE P&D ACT 2005**

DATE.....

FORM 6A - CONTINUED

APPROVAL GRANTED

.....

MINISTER FOR PLANNING

DATE.....



Shire of Exmouth
Local Planning Scheme No. 4

Amendment No. 6

Summary of Amendment Details

Inserting 'Major Event' as a definition into Schedule 1, Inserting Local Reserve Additional Use (AR1) Into Section 2.3 (Additional Uses in Local Reserves), Inserting Additional Use (A9) into Schedule 2 and amending scheme maps accordingly.

Planning and Development Act 2005

RESOLUTION TO PREPARE AMENDMENT TO LOCAL PLANNING SCHEME

Shire of Exmouth Local Planning Scheme 4 Amendment No. 6

Resolved that the Local Government pursuant to section 75 of the *Planning and Development Act 2005*, amend the above Local Planning Scheme by:

- i. Insert the following definition into Schedule 1 - Terms referred to in Scheme:
"Major event – means an event and/or activities that attract more visitors than the settlement and/or its surrounds can normally cater for. The use includes the temporary approval of camping, caravan parks, bed and breakfast, car parks, civic use, community purpose, fast food outlet, lunch bar, holiday accommodation, holiday house and market. Other uses may be considered by the local government if they facilitate the major event."
- ii. Inserting 'Additional Use (A9)' into Schedule 2 – Additional Uses as follows:

Number	Description of Land	Additional Use	Conditions
A9	Lot 9510 on DP5557, Lot 1 on DP47770, Lot 848 on DP175175, Lot 715 on DP173019, Lot 112 on DP182633, Lot 220 on DP192031, Lot 101 on DP180602, Lot 1403 on DP192085, Part Lot 1419 on DP219750, Lot 1586 on DP72986, Lot 166 on DP238089, Lot 1 on DP 85354, Lot 389 on DP 210127, Lot 1 on DP 77755, Lot 392 on DP210127, Lot 393 on DP 210127, Lot 2 on SP 12562, Lot 388 on DP210127, Lot 2 on DP 92275, Lots 376, 377, 378, 379, 380, 382,383 on DP 210127 Lot 1381 on DP 408201, Lot 1375 on DP 408201, Lot 374 on DP 210127, Part Lot 5000 on DP 55568, Lot 1436 on DP 220338 and 510 on DP 408201, Lot 20 on DP 209501, Lot 1412 on DP 219468.	As a 'D' use: <ul style="list-style-type: none"> Major Event Use 	<ol style="list-style-type: none"> The purpose of the additional use is to facilitate a 'major event' within the Shire. In considering an application for development approval, the local government may, consider the following matters in addition to those which it may have regard to under the Scheme: <ul style="list-style-type: none"> Whether the use is connected to and will facilitate the major event within the Shire; The need, considering the capacity in local housing and current tourism accommodation; Vehicular access arrangements and internal vehicle and pedestrian movements; Occupancy limitations; Provision of suitable setbacks and siting of development in the manner that considers surrounding land uses; Measures to manage visual amenity impacts; Transitioning plans; Rubbish disposal; Servicing including wastewater disposal, water, drainage and power; and Toilet and other facilities.

			<ol style="list-style-type: none"> 3. The local government is to be satisfied that the proponent has identified appropriate strategies to manage issues by siting of land use in the context of surrounding existing and proposed land uses; and providing adequate screening measures such as fencing. 4. The additional use shall effectively start from 06 April 2023. 5. The additional use shall cease on the 04 May 2023. 6. Any development approval issued by the local government for the additional use shall be no later than 04 May 2023. 7. Non-conforming use rights do not apply to the additional use. 8. After 04 May 2023, any buildings and/or structures that had been used for the additional use shall be removed unless development approval is granted for uses consistent with the zoning
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iii. Modify section 2.3 Additional uses for local reserves to the following:

2.3 Additional Uses for local reserves

2.3.1 The below table sets out –

- (a) classes of use for specified land located in local reserves that are additional to classes of use determined in accordance with the objectives of the reserve; and
- (b) the conditions that apply to that additional use.

Specified additional uses for land in local reserves in Scheme area

Number	Description of Land	Additional Use	Conditions
AR1	Lot 1455 and 1456 on DP32358 (LR3128/451 & LR3128/452), Lot 300 on DP40872 (R52730), Part Lot 1419 on DP 219750 (R50807), Lot 303 on DP408720 (R 50807), Lot 1493 on DP39344 (R51970), Lot 1391 on DP217782 (Reserve 51970), Lot 1030 on DP 188475, Lot 500 on DP 76589, Lot 1400 on DP 191674, Lot 102 on DP 180508 Lot 77 on DP 174803 (R 50740)	As a 'D' use: <ul style="list-style-type: none"> • Major Event 	<ol style="list-style-type: none"> 1. The purpose of the additional use is to facilitate a 'major event within the Shire.' 2. In considering an application for development approval, the local government may, consider the following matters in addition to those which it may have regard to under the Scheme: <ul style="list-style-type: none"> • Whether the use is connected to and will facilitate the major event within the Shire; • The need, considering the capacity in local housing and current tourism accommodation; • Vehicular access arrangements and internal vehicle and pedestrian movements; • Occupancy limitations;

	<p>Lot 98 and 99 on DP 180507 Lot 66 on DP 173147 Lot 49 and 50 on DP 169590 Lot 60 on DP 172891 Lot 84, 85 & 86 on DP 212281 Lot 30 on DP 205429 Lot 115 on DP 183578 Lot 32 on DP 161583 Lot 37 & 38 on DP 166410 Lot 39 on DP 208441 Lot 31 on DP 161582 Lot 28 and 29 on DP 205429 Lot 500 on DP 69582 Lot 1412 on DP 219468</p>		<ul style="list-style-type: none"> • Provision of suitable setbacks and siting of development in the manner that considers surrounding land uses; • Measures to manage visual amenity impacts; • Transitioning plans; • Rubbish disposal; • Servicing including wastewater disposal, water, drainage and power; and • Toilet and other facilities. <p>3. The local government is to be satisfied that the proponent has identified appropriate strategies to manage issues by siting of land use in the context of surrounding existing and proposed land uses; and providing adequate screening measures such as fencing.</p> <p>4. The additional use shall effectively start from 06 April 2023.</p> <p>5. The additional use shall cease on the 04 May 2023.</p> <p>6. Any development approval issued by the local government for the additional use shall be no later than 04 May 2023.</p> <p>7. Non-conforming use rights do not apply to the additional use.</p> <p>8. After 04 May 2023, any buildings and/or structures that had been used for the additional use shall be removed unless development approval is granted for uses consistent with the zoning</p>
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2.3.2 Despite anything contained in clause 2.2, land that is specified in the Table to subclause 2.3.1 may be used for the additional class of use set out in respect of that land subject to the conditions that apply to that use.

2.3.3 Despite anything contained within clause 2.2, a reserve may be used by the local government for the purpose of developing or maintaining public infrastructure.

iv. Amend the Scheme Maps accordingly

The amendment is complex under the provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* for the following reason(s):

a. The amendment is not addressed by the Shire of Exmouth Local Planning Strategy.

Dated this _____ day of _____ 20__

(Chief Executive Officer)

Amendment Report

1.0 INTRODUCTION

This report has been prepared to support proposed amendment No. 6 to the Shire of Exmouth's Local Planning Scheme No. 4 (LPS 4). The purpose of the amendment is to provide temporary options in and around the Exmouth townsite to cater for and facilitate the Total Solar Eclipse (TSE) event in 2023.

The proposed amendment will insert a new definition into LPS 4, being 'Major Event', with this use being applied temporarily (2 weeks either side of the Solar Eclipse event) into both section 2.3 'Additional uses in local reserves' (AR1) and into Schedule 2 – 'Additional Uses' (A9).

2.0 BACKGROUND

In 2023 the Shire will be in the path of totality of a rare TSE which will take place on the 20th of April at approximately 11.30am.

Previous eclipses around the world have experienced substantial increases in visitation associated with the event. Many visitors have stayed for several days either side of the actual eclipse event.

The purpose of the amendment is to apply temporary additional use provisions allowing for the 'major event', over a variety of strategic and unconstrained land parcels, which would temporarily allow for multiple options for facilitating the TSE.

The Department of Jobs, Tourism, Science and Innovation (DJTSI) is the lead agency coordinating the TSE event, collaborating with a range of government departments to ensure the delivery of a safe and secure event. This amendment would facilitate options, if needed, to temporarily cater for the expected tourist numbers.

Additional Use (A9) sites include:

- Lot 9510 on DP5557, Lot 1 on DP47770, Lot 848 on DP175175, Lot 715 on DP173019, Lot 112 on DP182633, Lot 220 on DP192031, Lot 101 on DP180602, Lot 1403 on DP192085, Part Lot 1419 on DP219750, Lot 1586 on DP72986, Lot 166 on DP238089, Lot 1 on DP 85354, Lot 389 on DP 210127, Lot 1 on DP 77755, Lot 392 on DP210127, Lot 393 on DP 210127, Lot 2 on SP 12562, Lot 388 on DP210127, Lot 2 on DP 92275, Lots 376, 377, 378, 379, 380, 382,383 on DP 210127, Lot 1381 on DP 408201, Lot 1375 on DP 408201, Lot 374 on DP 210127, Part Lot 5000 on DP 55568, Lot 1436 on DP 220338, 510 on DP 408201, Lot 20 on DP 209501, Lot 1412 on DP 219468 (**see proposed scheme amendment map**).

Additional Use (AR1) sites include:

- Lot 1455 and 1456 on DP32358, Lot 300 on DP40872, Part Lot 1419 on DP 219750, Lot 303 on DP408720, Lot 1493 on DP39344, Part Lot 1586 on DP272986, Lot 1391 on DP217782, Lot 1030 on DP 188475, Lot 500 on DP 76589, Lot 1400 on DP 191674, Lot 102 on DP 180508, Lot 77 on DP 174803 (R 50740), Lot 98 and 99 on DP 180507, Lot 66 on DP 173147, Lot 49 and 50 on DP 169590, Lot 60 on DP 172891, Lot 84, 85 & 86 on DP 212281, Lot 30 on DP 205429, Lot 115 on DP 183578, Lot 32 on DP 161583, Lot 37 & 38 on DP 166410, Lot 39 on DP 208441, Lot

31 on DP 161582, Lot 28 and 29 on DP 205429, Lot 500 on DP 69582, Lot 1412 on DP 219468 (see proposed scheme amendment map)

3.0 State & Regional Planning Context

State Planning Strategy

The proposed amendment supports the State Planning Strategy's vision for sustained growth. The proposed amendment will provide access to and enhance an experience that will be unique in a global perspective. The TSE's potential to draw in significant tourism numbers is a unique opportunity which will have significant economic flow on effects. The proposed amendment will assist in building the State's identity, generating a sense of place, as well as building a resilient region through economic diversification.

State Planning Policy 6.3 - Ningaloo Coast

The amendment is broadly consistent with State Planning Policy 6.3 - Ningaloo Coast (SPP 6.3), as it aims to facilitate temporary options within and surrounding the townsite of Exmouth to facilitate the Total Eclipse event. Uncontrolled management of the event is likely to lead to significant impacts on the environment. The amendment provides multiple options to enable the controlled facilitation of the Total Eclipse Event, all areas that are currently proposed are outside of the 'significant environmental areas' identified within SPP 6.3.

Gascoyne Regional Planning and Infrastructure Framework

The proposed amendment supports several of the strategic goals identified within the Gascoyne Regional Planning and Infrastructure Framework. By allowing for temporary additional uses, the proposed amendment will enable economic and social opportunities during this one-off event and help to support economic diversity and resilience within the Shire of Exmouth. Importantly as the amendment will help to manage and control the overall event, it supports the goal of maintaining and conserving biodiversity, landscapes and environments.

3.0 LOCAL PLANNING CONTEXT

Shire of Exmouth Local Planning Strategy

Although the purpose of the proposed amendment is not specifically addressed through the Shire's Local Planning Strategy (Strategy), it does broadly align with one of the Strategy's main objectives.

The purpose of the proposed amendment is to identify temporary options across the Exmouth townsite and surrounds that will enable the Shire to facilitate and cater for the expected tourist numbers as a result of the TSE. As the proposed amendment helps to capture tourism opportunities associated with the TSE via temporary provisions, it is broadly consistent with the Shire's Local Planning Strategy objective to: "Encourage the sustainable growth of tourism and tourism related opportunities throughout the Shire and balance growth against the conservation values of the environment upon which the area's tourism industry is based".

Shire of Exmouth Local Planning Scheme No. 4 (LPS4)

The sites subject to the proposed amendment are covered by various zones and reserves under the Shire's LPS 4. Some of these areas are also subject to other provisions in LPS4, however as this amendment is proposed for temporary uses, it will not have any material impact on the other provisions. Details for each of the sites are as follows in Table 1 & 2:

Table 1: Additional Use A9 site context details

Site	Location	Site Area/ Ownership	LPS 4
Lot 9510 on DP 55557	The subject site is south of the Exmouth Marina, located on the corner of Murat Road and Mortiss Street.	The subject site is 17.9ha and is owned by the Western Australian Land Authority.	The site is zoned as a Special Use 'SU7'.
Lot 1 on DP47770	The subject site is approximately 30km south of the Exmouth townsite, located on the corner of Charles Knife Road and Minilya – Exmouth Road	The subject site is 12.6ha and is privately owned.	The subject site is zoned as 'General Industry'. The subject site also has an additional use 'A4', allowing for caravan park and caretakers dwellings if the Local Government has exercised discretion by granting development approval. 'Minilya-Exmouth Road Special Control Area 6' applies over the western portion of site.
Lot 112 on DP 182633 (LR3069/517)	The subject site is approximately 30km south of the Exmouth townsite. Located on Minilya -Exmouth Road	The subject site is 4ha and is owned by the State of Western Australia.	The subject site zoned as 'General Industry' The subject site also has an additional use 'A4', allowing for caravan park and caretakers dwellings if the Local Government has exercised discretion by granting development approval. 'Minilya-Exmouth Road Special Control Area 6' applies over the western portion of site.
Lot 220 on DPP 192031 (2077/862)	The subject site is approximately 30km south of the Exmouth townsite. Located on Minilya -Exmouth Road	The subject site is 11ha and is privately owned.	The subject site is zoned as 'General Industry' The subject site also has an additional use 'A4', allowing for caravan park and caretakers dwellings if the Local Government

			<p>has exercised discretion by granting development approval.</p> <p>'Minilya-Exmouth Road Special Control Area 6' applies over the western portion of site.</p>
Lot 101 on DP 180602 (2230/171)	The subject site is approximately 30km south of the Exmouth townsite. Located on Minilya -Exmouth Road	The subject site is 0.2ha and is privately owned.	<p>The subject site is zoned as 'General Industry'</p> <p>The subject site also has an additional use 'A4', allowing for caravan park and caretakers dwellings if the Local Government has exercised discretion by granting development approval.</p> <p>'Minilya-Exmouth Road Special Control Area 6' applies over the western portion of site.</p>
Lot 848 on DP 175175	The subject site is south of the Exmouth Townsite, located on the corner of Warne Street and Truscott Road.	The two lots on the subject site are 3.4ha and 3.5ha with a total area of 6.9ha and the subject sites are privately owned.	The subject site is zoned as 'Tourism' with a R – Code of 'R40'
Lot 715 on DP 173019	The subject site is south of the Exmouth Townsite, located on the corner of Warne Street and Truscott Road.	The two lots on the subject site are 3.4ha and 3.5ha with a total area of 6.9ha and the subject sites are privately owned.	The subject site is zoned as 'Tourism' with a R – Code of 'R40'
Lot 1403 on DP 192085 (CT LR3104/598)	The subject site is south east of the Exmouth Townsite, north of the Exmouth Marina	The subject site is 9.8ha and is owned by the State of Western Australia	<p>The Subject site is zoned 'Special Use 4' (SU4). SU4 is to cater for the current and future supply of affordable tourist accommodation in the form of caravan parks and camping grounds.</p> <p>Floodplain Special Control Area 5 applies over the western portion of the site.</p>

Part Lot 1419 on DP 219750 (portion of R50807)	The subject site is east of the Exmouth townsite and is on the corner of Murat Road and Willersdore Road.	The subject site is 5.5ha and is owned by the State of Western Australia.	The subject site is currently zoned 'Tourism' with an R Coding of 'R40'. Floodplain special control are 5 applies over the eastern portion of the site.
Part Lot 1586 on DP72986	Broadly applies to Lease LPL N050424	The subject site is 58,316ha and is owned by the State of Western Australia.	The subject site is currently zoned as 'Rural'. 'Floodplain Special Control Area 5' is located in the northern portion of the subject area
Lot 166 on DP238089 (LR3069/365)	Broadly applies to Lease LPL N050158	The subject site is 109,946ha and is owned by the State of Western Australia.	The subject site is currently zoned as 'Rural'.
Commercial area adjacent to Maidstone Cres	Broadly applies to the commercial area bounded by Maidstone Crescent, Thew Street, Kennedy St and Learmonth Street.	Approximately 3ha, mixed ownership both State and private.	Subject site is zoned 'commercial' C1, with one lot C3 (Lot 1030)
Lot 1412 on DP 219468	The subject site is east of the Exmouth Town Centre between Payne Street and Murat Road.	The subject site is 1.54ha and is owned by the State of Western Australia.	The subject site is reserved as 'Public Open Space' with a portion included within the 'Floodplain Special Control Area'.

Table 2: Additional Use AR1 site context

Site	Location	Site Area/ Ownership	LPS 4
Lot 1455 and Lot 1456 on DP 32358 (reserve 29066)	The subject site is in the Exmouth Townsite, north of Exmouth marina on the corner of Truscott Crescent and Murat Road.	The subject site is 44.3ha and the subject site privately owned.	The site is reserved as Public Open Space. Floodplain special control area 5 applies over the majority of the site. Exmouth Waste Water Treatment Plant Special Control Area 2 applies over the majority of the site.
Lot 300 on DP 408720 (R52730)	The subject site is south of the Exmouth townsite and is north of the Exmouth Marina. Located on the corner of Murat Road and Truscott Crescent.	The subject site is 6.7ha and is owned by the State of Western Australia	The subject site is reserved as 'Civic and Community'. Floodplain special control area 5 and Exmouth Waste Water Treatment Plant Special Control Area 2 applies over the site.

Part Lot 1419 on DP 219750	The subject site is east of the Exmouth townsite and is on the corner of	The subject site is 17.7ha and is owned by	The subject site is currently reserved as 'Public Open Space.'
(portion of R50807)	Murat Road and Willersdore Road.	the State of Western Australia.	Floodplain special control area 5 and Exmouth Waste Water Treatment Plant Special Control Area 2 applies over the site
Lot 303 on DP 408720 (Reserve 50807)	The subject site is east of the Exmouth townsite and north of the Exmouth marina.	The subject site is 57.8ha and is owned by the State of Western Australia.	The subject site is currently reserved as 'Public Open Space'. Floodplain special control area 5 and Exmouth Waste Water Treatment Plant Special Control Area 2 applies over the site
Lot 1391 on DP 217782, R 51970 and Lot 1493 on DP 39344, R51970	The subject land is located 1.6km south of Exmouth townsite and west of the marina.	The subject land is 95.1 ha and is owned by the Western Australian Land Authority.	The majority of the subject area is zoned 'Urban Development'. The north-west corner is zoned 'Service Commercial' and a portion (1136m ²) reserved 'Public Purpose' (centre east, next to Murat Road). The subject site under the scheme also has an additional use 'A6', additional use for agriculture extensive. Floodplain special control area 5 and Exmouth Power Station Special Control Area 3 apply to the subject site.
Part Lot 1586 on DP72986	Broadly applies to Lease LPL N050424 north of Charles Knife Road.	The subject site is 951ha and is owned by the State of Western Australia.	The subject site is currently reserved 'Environmental Conservation Reserve'. This site falls within Exmouth Water Reserve Special Control Area 1 and Exmouth Aerodrome Special Control Area 4
Lot 1400 on DP 191674	Reserve 27412, bounded by Carpenter Street, Marsh Street, Christie Street and Maidstone Cres	Approximately 3.6ha	Subject site is currently Reserved 'Public Purpose - Education'
Lot 1030 on DP 188475 & Lot 500 on DP 76589	Reserves 28827 and Reserve 27647 adjacent to Maidstone Cres	Approximately 1.77ha	Subject sites are Reserved 'Public Open Space'.
Numerous surrounding	Broadly described as public purpose reserve surrounding the	Approximately 2,600ha	Subject sites are Reserved as 'Public Purposes - Government Services'

Learmonth Airport	Learmonth airport, either side of Minilya-Exmouth Road.		
Lot 500 on DP 69582	Reserve 53199. The subject land is located approximately 12km north of Exmouth townsite.	The subject land is 19.1ha.	The subject site is reserved 'Public Purposes – Recreational'.
Lot 1412 on DP 219468	The subject site is east of the Exmouth Town Centre between Payne Street and Murat Road.	The subject site is 1.54ha and is owned by the State of Western Australia.	The subject site is reserved as 'Public Open Space' with a portion included within the 'Floodplain Special Control Area'.

4.0 PROPOSAL

The proposed amendment seeks to:

- Insert 'Major Event' as a term into Schedule 1 in LPS 4, being:
 - **Major event**– means an event and/or activities that attract more visitors than the settlement and/or its surrounds can normally cater for. The use includes the temporary approval of camping, caravan parks, bed and breakfast, car parks, civic use, community purpose, fast food outlet, lunch bar, holiday accommodation, holiday house and market. Other uses may be considered by the local government if they facilitate the major event."
- Insert an 'Additional Use' (A9) in Schedule 2 of LPS4 for the following lots
 - Lot 9510 on DP5557, Lot 1 on DP47770, Lot 848 on DP175175, Lot 715 on DP173019, Lot 112 on DP182633, Lot 220 on DP192031, Lot 101 on DP180602, Lot 1403 on DP192085, Part Lot 1419 on DP219750, Lot 1586 on DP72986, Lot 166 on DP238089, Lot 1 on DP 85354, Lot 389 on DP 210127, Lot 1 on DP 77755, Lot 392 on DP210127, Lot 393 on DP 210127, Lot 2 on SP 12562, Lot 388 on DP210127, Lot 2 on DP 92275, Lots 376, 377, 378, 379, 380, 382,383 on DP 210127, Lot 1381 on DP 408201, Lot 1375 on DP 408201, Lot 374 on DP 210127, Part Lot 5000 on DP 55568, Lot 1436 on DP 220338, 510 on DP 408201, Lot 20 on DP 209501, Lot 1412 on DP 219468. (see proposed scheme amendment map)
- Insert an 'Local Reserve Additional Use' (AR1) for the following lots:
 - Lot 1455 and 1456 on DP32358, Lot 300 on DP40872, Part Lot 1419 on DP 219750, Lot 303 on DP408720, Lot 1493 on DP39344, Part Lot 1586 on DP272986, Lot 1391 on DP217782, Lot 1030 on DP 188475, Lot 500 on DP 76589, Lot 1400 on DP 191674, Lot 102 on DP 180508, Lot 77 on DP 174803 (R 50740), Lot 98 and 99 on DP 180507, Lot 66 on DP 173147, Lot 49 and 50 on DP 169590, Lot 60 on DP 172891, Lot 84, 85 & 86 on DP 212281, Lot 30 on DP 205429, Lot 115 on DP 183578, Lot 32 on DP 161583, Lot 37 & 38 on DP 166410, Lot 39 on DP 208441, Lot 31 on DP 161582, Lot 28 and 29 on DP 205429, Lot 500 on DP 69582, Lot 1412 on DP 219468 (see proposed scheme amendment map)

Under Additional Use 9 (A9) and Additional Use for Local Reserves (AR1), 'Major Event Use' permissibility will be 'D' use. This means that the use is not permitted unless the Local Government has exercised its discretion by granting development approval.

A number of conditions are also proposed for both A9 and AR1 (**see proposed amendment text**). These conditions broadly cover requiring development to facilitate the TSE, as well as measures to address servicing, occupancy management, and strategies to managed the interaction between surrounding areas. Given that the TSE will take place on the 20th April at 11.30am and is only expected to last around 3 hours, the amendment proposes to limit approvals to the period of time between the 06th of April 2023 and the 04 of May 2023. Once this period has passed the Additional Uses and Local Reserve Additional Uses will cease.

Regulation 35A

As the amendment proposes temporary uses, when the amendment takes effect, no approval of any structure plan will be affected.

5.0 JUSTIFICATION

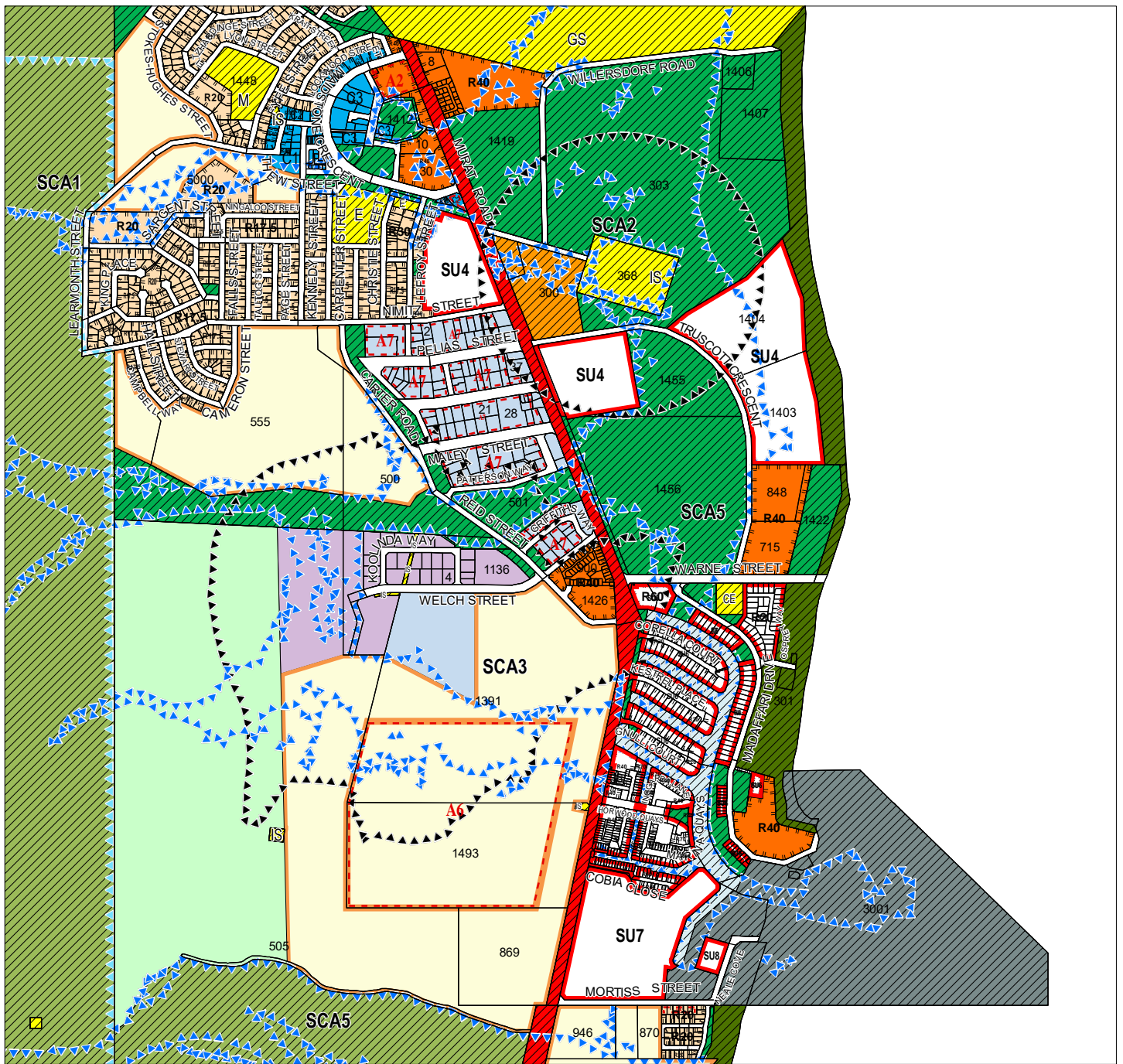
The TSE is an extraordinary and rare astronomical event and it is anticipated that the North West Cape and surrounding towns will experience extremely high visitation numbers.

Past eclipse events have indicated that the population of centres within the totality path can swell past usual peaks. This proposed amendment will provide options for accommodating the requirements for facilitating the TSE by:

- Providing a variety of site options across the townsite and surrounds;
- Providing certainty in regards to allowable uses on proposed sites; and
- Using temporary additional use provisions to provide development control and ensure that any development is of a temporary nature.

6.0 CONCLUSION

This amendment seeks to provide temporary options to address the expected demands from increased visitation due to the 2023 TSE. The proposed amendment enables the consideration of multiple site options and temporary permissibility for uses that will facilitate the event across the townsite and surrounds.



EXISTING SCHEME MAP 1

Legend

Cadastre with Lot number	Special use	Local road	Public purposes : Medical services
R Codes	Tourism	Primary distributor road	Strategic infrastructure
LPS Zones	Urban development	Public open space	LPS Other Categories
Commercial (C1,C2,C3)	LPS Reserves	Public purposes	Exmouth Water Reserve Special Control Area 1
Light industry	Civic and community	Public purposes : Cemetery	Exmouth Waste Water Treatment Plant Special Control Area 2
Residential	Drainage/waterway	Public purposes : Education	Exmouth Power Station Special Control Area 3
Rural	Environmental conservation reserve	Public purposes : Government services	Floodplain Special Control Area 5
Service commercial	Foreshore	Public purposes : Infrastructure services	Additional uses



EXISTING SCHEME MAP 2

Legend

- | | |
|--------------------------|--|
| Cadastre with Lot number | LPS Other Categories |
| General industry | Muniya-Exmouth Road Special Control Area 6 |
| Rural | Additional uses |
| LPS Reserves | |
| Foreshore | |
| Local road | |
| Primary distributor road | |



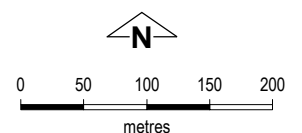
Department of Planning,
Lands and Heritage

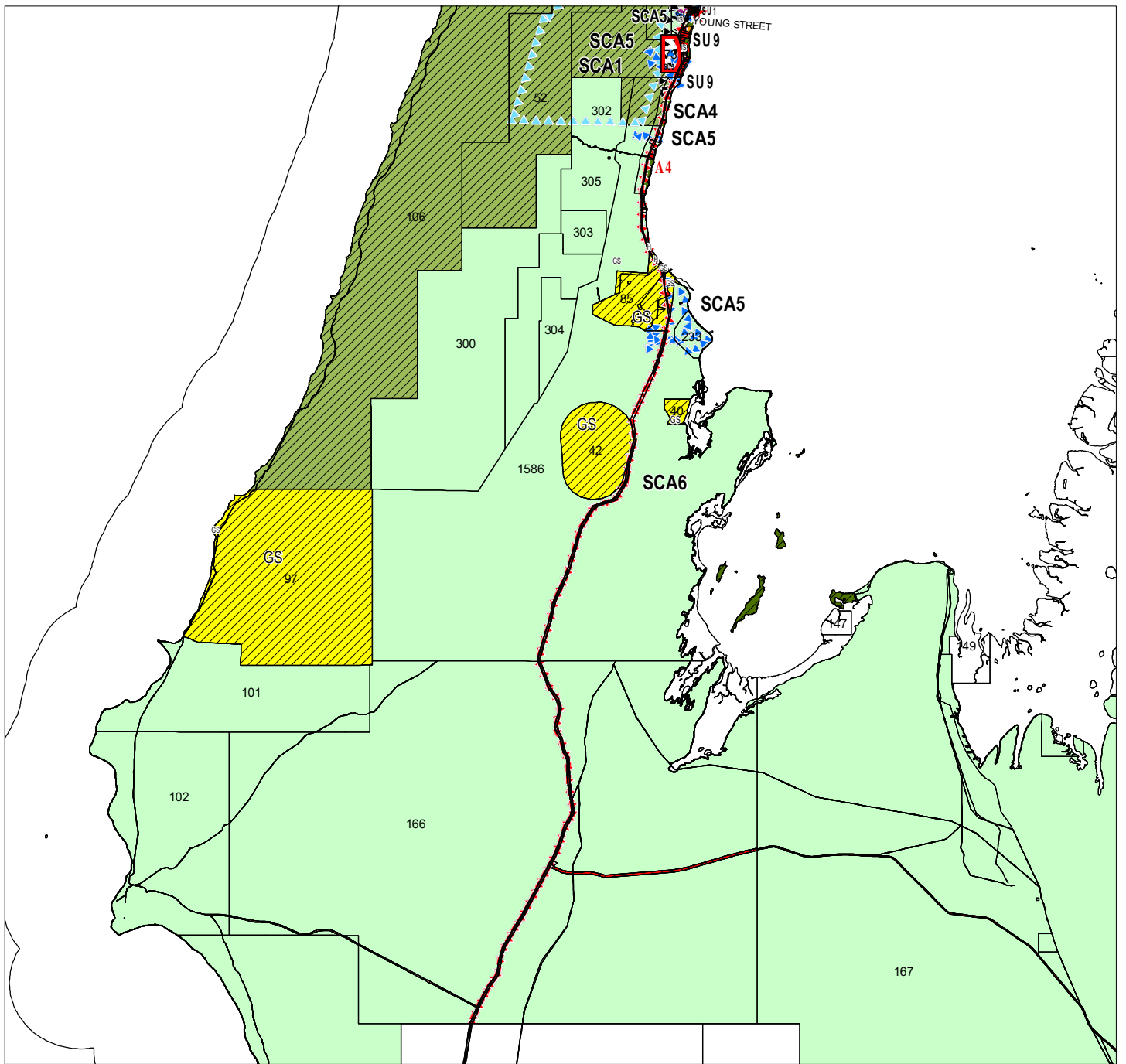
Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 6

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Land Information Authority SLIP 1180-2020-1





EXISTING SCHEME MAP 3

Legend

Cadastre with Lot number	Environmental conservation reserve	Public purposes - Heritage
LPS Zones	Foreshore	Public purposes - Infrastructure services
General industry	Local distributor road	LPS Other Categories
Industrial development	Local road	Floodplain Special Control Area 5
Rural	Primary distributor road	Minilya-Exmouth Road Special Control Area 6
Special use	Public open space	Exmouth Aerodrome Special Control Area 4
LPS Reserves	Public purposes: Government services	Exmouth Water Reserve Special Control Area 1
Civic and community		

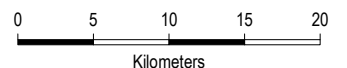


Department of Planning,
Lands and Heritage

Shire of Exmouth

Local Planning Scheme No. 4








Amendment No. 6





EXISTING SCHEME MAP 4

Legend

-  Cadastre with Lot number
- LPS Reserves**
-  Environmental Conservation Reserve
-  Local Road
-  Primary Distributor Road
-  Public Purposes
-  Public Purposes : Government Services
-  Public Purposes : Recreational



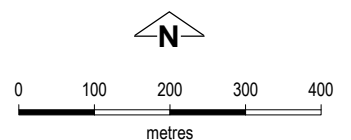
**Department of Planning,
Lands and Heritage**

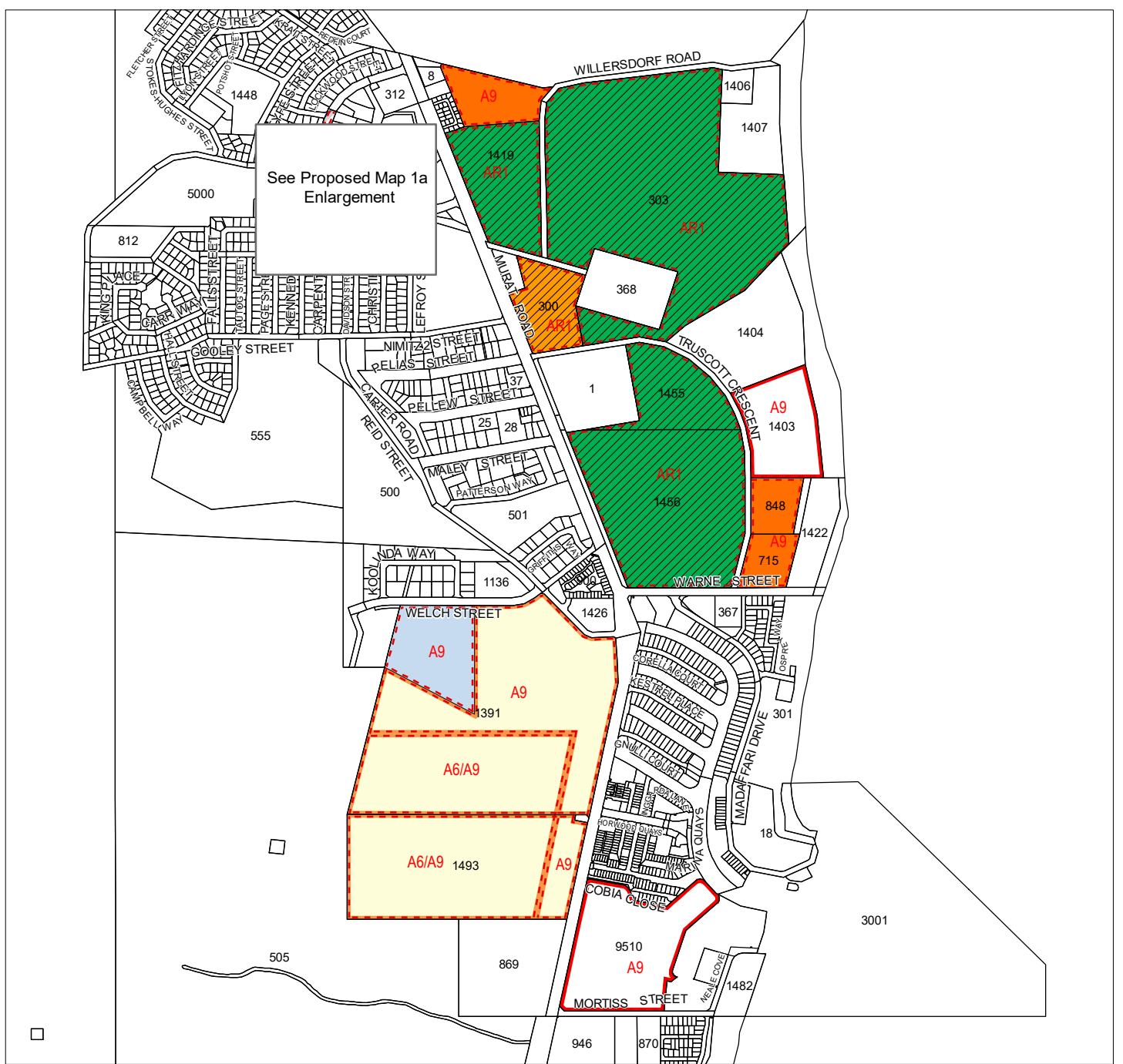
Shire of Exmouth

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Amendment No. 6

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PROPOSED SCHEME AMENDMENT MAP 1

Legend

- | | | | |
|--|--------------------------|--|-------------------|
| | Cadastre with Lot number | | Special use |
| | Civic and community | | Tourism |
| | Commercial | | Urban development |
| | Local road | | Additional use |
| | Public open space | | |
| | Public purposes | | |
| | Service commercial | | |



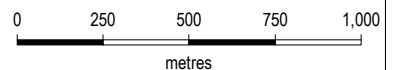
Department of Planning,
Lands and Heritage

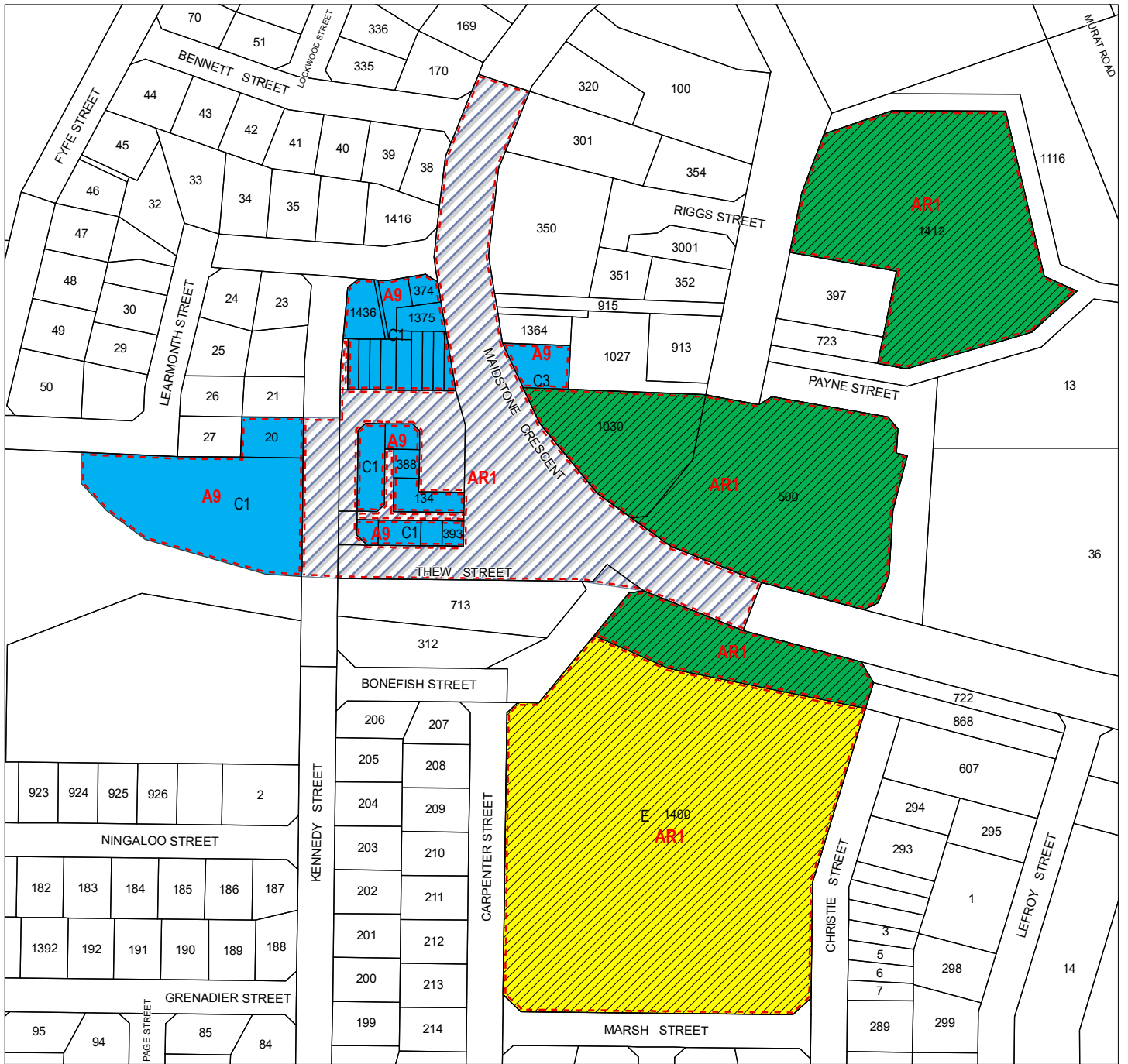
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PROPOSED SCHEME AMENDMENT MAP 1a

Legend

Cadastre with Lot number

A9 Additional use

LPS Zones and Reserves Amendments

- Commercial
- Local road
- Public open space
- Public purposes - Education

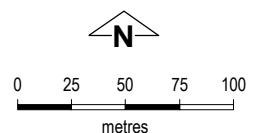


Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 6


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PROPOSED SCHEME AMENDMENT MAP 2

Legend

 Cadastre with Lot number

LPS Zones and Reserves Amendments

 General industry

 A4/A9 Additional uses



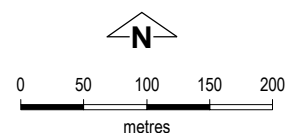
**Department of Planning,
Lands and Heritage**

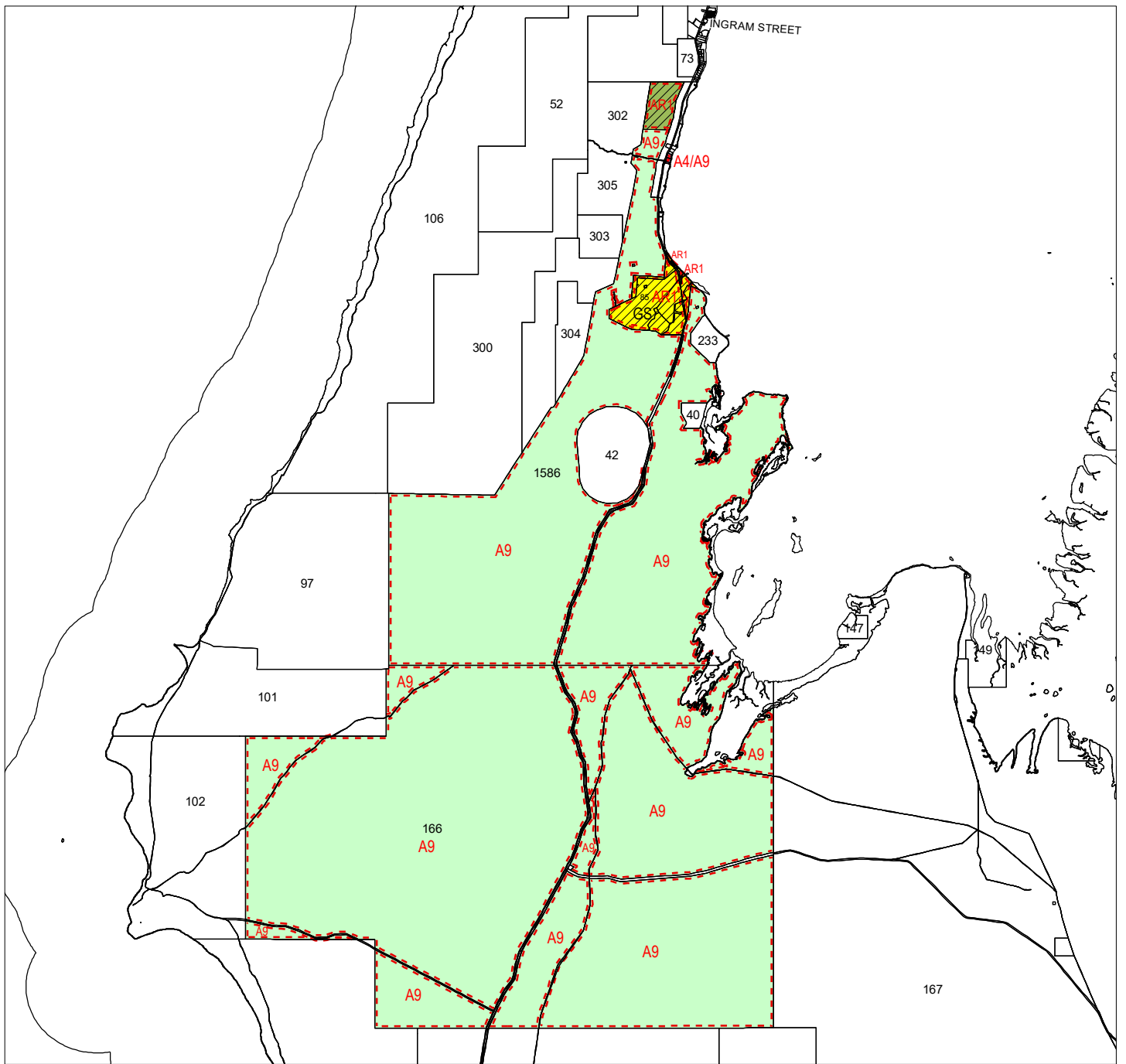
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Land Information Authority SLIP 1180-2020-1

Shire of Exmouth

Local Planning Scheme No. 4







Amendment No. 6





PROPOSED SCHEME AMENDMENT MAP 3

Legend

-  Cadastre with Lot number
- LPS Zones and Reserves Amendments**
-  Environmental conservation reserve
-  General industry
-  Public purposes - Government Services
-  Rural
-  Additional use



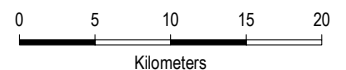
Department of Planning,
Lands and Heritage

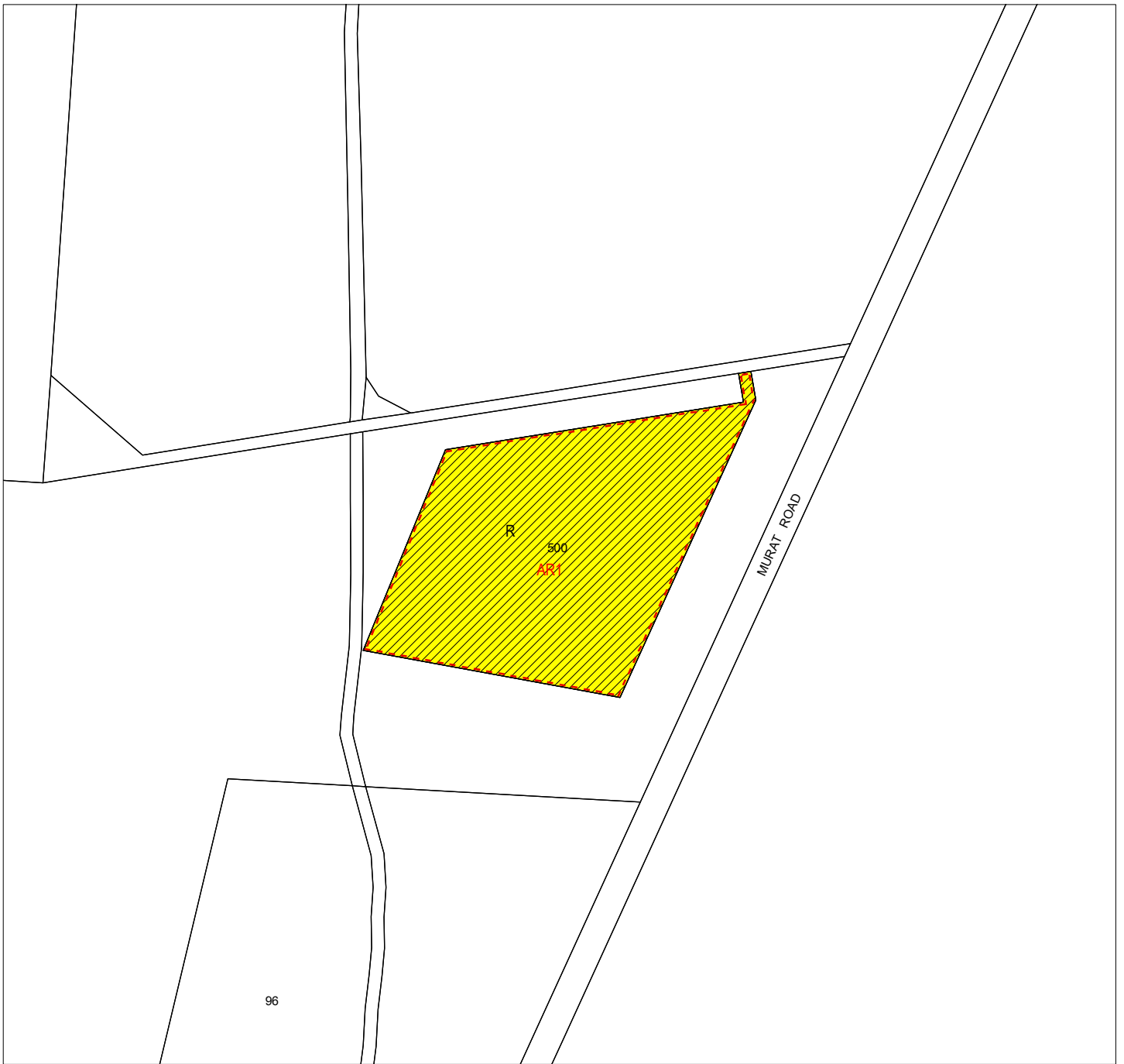
Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 6


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PROPOSED SCHEME AMENDMENT MAP 4

Legend

 Cadastre with Lot number

LPS Zones and Reserves Amendments

 Public Purposes - Recreational

 Additional use



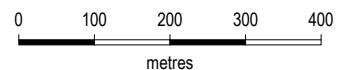
Department of Planning,
Lands and Heritage

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Base Information supplied by Western Australian
Land Information Authority SLIP 1180-2020-1

Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 6



COUNCIL ADOPTION

This Complex Amendment was adopted by resolution of the Council of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 2021.

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

COUNCIL RESOLUTION TO ADVERTISE

by resolution of the Council of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 2021, proceed to advertise this Amendment.

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

COUNCIL RECOMMENDATION

This Amendment is recommended for support by resolution of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 2021 and the Common Seal of the Shire of Exmouth was hereunto affixed by the authority of a resolution of the Council in the presence of:

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

WAPC ENDORSEMENT (r.63)

.....
**DELEGATED UNDER S.16 OF
THE P&D ACT 2005**

DATE.....

FORM 6A - CONTINUED

APPROVAL GRANTED

.....
MINISTER FOR PLANNING

DATE.....

Development
Services

629 Newcastle Street
Leederville WA 6007

PO Box 100
Leederville WA 6902

T (08) 9420 2099
F (08) 9420 3193



Our Ref: TPS382412
Enquiries: Matt Calabro
Direct Tel: 9420 2099

21 January 2022

Chief Executive Officer
Shire of Exmouth
2 Truscott Crescent
EXMOUTH WA 6707

Re: Proposed Local Planning Scheme Amendments 6 & 7, Exmouth WA

Thank you for your letter dated 10 January 2022. We offer the following comments regarding this proposal.

Water Corporation has no objection to the proposed Local Planning Scheme Amendments.

Water Corporation will be working closely with other agencies to manage the increased demand that this event will generate. The Mid-West Region Water Corporation office will liaise with the shire to develop a plan for this going forward.

Should you have any queries or require further clarification on any of the above issues, please do not hesitate to contact me at matt.calabro@watercorporation.com.au

Regards,

A handwritten signature in black ink, appearing to read "Matt Calabro", written over a light blue horizontal line.

Matt Calabro
Advisor – Land Planning
Development Services

Our Ref: TPS382412
Enquiries: Matt Calabro
Direct Tel: 9420 2099
Email: land.planning@watercorporation.com.au

01 February 2022

Chief Executive Officer
Shire of Exmouth
2 Truscott Crescent
EXMOUTH WA 6707

Re: Proposed Local Planning Scheme Amendments 6 & 7, Exmouth WA

The following advice is provided as a follow up and to replace the comments contained in the Water Corporation's correspondence dated 19 January 2022.

Notwithstanding the minor nature of the text and map amendments, the Water Corporation is concerned about some aspects of the amendments (notably camping on ovals, the golf course and in residential settings) as this would significantly increase the number of overnight visitors beyond the capacity of the water and sewerage systems to cope with the additional demands.

The amendment reports do not provide an estimate of the potential increase in visitors, or if it is expected that accommodation areas are to be serviced by water or wastewater. In the absence of this information the Water Corporation is not able to support the amendments.

It is recommended that the Shire liaises with the Water Corporation's assigned stakeholder manager, Mr John D'Arcy on Tel. 6330-6666 or John.D'arcy@watercorporation.com.au regarding the event and the increase in demands on the town's water and sewerage systems.

Regards,



Matt Calabro
Advisor – Land Planning
DEVELOPMENT SERVICES



Department of Biodiversity,
Conservation and Attractions



We're working for
Western Australia.

Your ref: LPS 4 Amendment 6 and 7
Our ref: PRS 48454
Enquiries: Brooke Halkyard
Phone: 9840 0457
Email: brooke.halkyard@dbca.wa.gov.au

Miss Valentina Shales
Administrator, Development Services
Shire of Exmouth
PO Box 21
EXMOUTH WA 6707 STATE

Dear Valentina

PROPOSED SCHEME AMENDMENT NO. 6 AND NO. 7 TO LOCAL PLANNING SCHEME NO. 4

Thank you for providing the Department of Biodiversity, Conservation and Attractions (DBCA) with the opportunity to comment on the proposed scheme amendment No. 6 and No. 7 to Local Planning Scheme No. 4. DBCA understands that the purpose of the proposed scheme amendments is to provide temporary options in and around the Exmouth townsite to cater for and facilitate the Total Solar Eclipse event in 2023. DBCA notes that temporary approvals associated with the proposed additional uses will be in effect from 6 April 2023 to 4 May 2023.

DBCA provides the following advice pursuant to its roles and responsibilities under the *Conservation and Land Management Act 1984* (CALM Act) and the *Biodiversity Conservation Act 2016* (BC Act).

Recommendation 1

That the conditions for the proposed additional use categories, for both amendment No. 6 and No. 7, include provisions to avoid or minimise potential impacts to DBCA-managed lands and waters, and biodiversity values from increased visitor numbers.

Discussion

The proposed scheme amendment includes areas for additional use (A9) that are adjacent to the eastern expansion of Cape Range National Park and Giralalia ex-pastoral lease, which is proposed National Park (Cabinet endorsed) and is currently unallocated Crown land (UCL) on which DBCA has management responsibilities for fire, feral animals and weeds. Additional use (A9) areas are also proposed adjacent to the Exmouth Gulf which provides potential access to nearby island nature reserves. It is noted that Additional use (AR1) area (Lot 500 on DP 69582) is separated from Bundegi Coastal Park by Murat Road.

The scheme amendment document advises that the additional areas have been selected to ensure that they are outside of the 'significant environmental areas' identified in the State Planning Policy 6.3 – Ningaloo Coast, however, noting the time that has elapsed since this policy was prepared in 2004, DBCA advises that there are additional CALM Act values that should be considered as part of the current scheme amendment process, based on contemporary information.

Neither Qualing Pool nor the Camerons Cave Threatened Ecological Community and its associated land use buffer (as depicted in the Shire of Exmouth's *Local Planning Strategy 2015-2025*) appear to be shown in the proposed scheme amendment maps. Noting the recent McGowan Government announcement to create class A CALM Act reserves at both sites as part of its broader Plan for Our

Parks initiative, it would be useful for the scheme amendment maps to delineate their location relative to the proposed additional use areas. It appears that Qualing Pool is approximately five kilometres from proposed additional use (AR1), whilst Camerons Cave Land Use Buffer abuts proposed additional use (A10) and is approximately 300m from proposed Additional Use (A6/A9). It is recommended that these areas are delineated in the proposed scheme amendment maps.

Noting that many visitors are expected to stay in the Exmouth area either side of the Total Solar Eclipse (Amendment Report, page 5), the increased tourist numbers facilitated by the proposed scheme amendment will likely result in increased visitor pressures at other nearby DBCA-managed lands and waters, such as Jurabi Coastal Park, Ningaloo Marine Park and Cape Range National Park.

Numerous conservation significant flora and fauna species (i.e. species protected under the BC Act and DBCA-listed priority species) also occur within and near areas proposed for additional use, including *Corchorus congener* (P3), *Acacia alexandri* (P3), Camerons Cave millipede (*Stygiochiropus peculiaris*) (CR), black-flanked rock wallabies (*Petrogale lateralis lateralis*) (EN) and numerous shorebird and seabird species. Given the pre-emptive nature of the scheme amendment and the lack of specific details on the scale and nature of the proposed additional uses, DBCA notes that there is limited capacity to determine if this scheme amendment may detrimentally impact conservation significant flora and fauna species.

The timing of the 'Major Event' (6 April to 4 May 2023) overlaps the hatchling season for threatened marine turtle species, including loggerhead (*Caretta caretta*) (EN) green (*Chelonia mydas*) (VU), and hawksbill (*Eretmochelys imbricata*) (VU). Whilst there are no turtle rookeries adjacent to the proposed additional use areas, increased visitation to turtle nesting beaches by tourists accommodated in Additional Use areas is likely to occur.

Whilst environmental management is mentioned in general terms, it appears there are no specific planning provisions within the documentation to minimise potential impacts to DBCA-managed lands and waters, and biodiversity values from increased visitation during the Total Solar Eclipse.

Unmanaged visitor access and inappropriate visitor interactions may adversely impact DBCA-managed lands and waters, and biodiversity values through the introduction of non-indigenous species (flora and fauna), physical disturbance (including disturbance from domestic pets), habitat degradation, noise and artificial light impacts, creation of new vehicle tracks, trampling and/or removal of vegetation (including priority flora species), escaped campfires resulting in bushfires, damage to heritage sites, littering (including subsequent entanglement, entrapment and ingestion by wildlife), and pollution (including groundwater contamination and subsequent impacts to subterranean fauna).

DBCA recommends that the conditions for the proposed additional use categories, for both amendment No. 6 and No. 7, include provisions for:

- Visitor education and awareness program, which includes but is not limited to the following:
 - appropriate wildlife interactions (e.g. no feeding and keeping a distance, especially in relation dingoes, noting that habituated animals may become aggressive towards people);
 - appropriate waste management (including toilet waste) to minimise artificial food sources, and to avoid littering and contamination of the environment;
 - use of existing vehicle tracks and walk trails;
 - use of bare ground for camping (i.e. no clearing of vegetation);
 - avoiding vehicle access to dune systems and shorebird habitat;
 - protection of Aboriginal heritage sites and artefacts;
 - appropriate campfire practices to reduce the risk of bushfires;
 - control of domestic pets, as well as information on the areas that comprise the department's 1080 baiting program (noting that 1080 poison baits will kill domestic dogs and cats if consumed);

- weed hygiene, including checks that clothing, footwear and camping gear are free of seeds and soil prior to visiting Cape Range National Park, Jurabi and Bundegei coastal parks and island nature reserves; and
 - promotion of DBCA visitor guides (e.g. *Turtle Watching Code of Conduct, Ningaloo Coast World Heritage area – Visitor guide and Islands in the Pilbara*).
- Site rehabilitation and closure of any newly established tracks from additional use areas into gazetted and proposed DBCA-managed lands at the conclusion of the additional use period.

DBCA understands that a communications plan will be developed by the interagency committee established by the Department of Jobs, Tourism, Science and Innovation for the purposes of the Total Solar Eclipse. Consideration could be given to developing the visitor education and awareness program as part of this communications plan.

Advice Notes

DBCA Operations

DBCA undertakes research and pest control work outside of DBCA-managed lands and waters, including work on behalf of other government agencies. There is potential that the proposed additional use areas may be near DBCA operations. To ensure that DBCA operations are not adversely impacted by the proposed scheme amendment and additional use areas, DBCA requests ongoing consultation with the Shire of Exmouth as further details regarding the additional use areas become available. Potential mitigation measures may include instigating access management to control interactions with DBCA operations and/or amending the timing of DBCA operations.

Commercial Operations

DBCA notes that anyone offering tourism, recreation or educational services for private benefit (profit) in lands and waters managed by DBCA during the 'Major Event' should be aware of departmental licence requirements (as per: <https://www.dbca.wa.gov.au/parks-and-wildlife-service/for-business/commercial-operations-licensing#:~:text=Commercial%20operations%20licences%20allow%20DBCA,use%20and%20enjoyment%20of%20visitors>).

Other legislation

DBCA notes that activities associated with the proposed scheme amendment and additional use areas may require compliance with legislative provisions administered by relevant government agencies including, but not limited to, the *Environmental Protection Act 1986* (e.g. vegetation clearing) and the *Aboriginal Heritage Act 1972*.

Please contact Brooke Halkyard (Ph 9840 0457 or Brooke.Halkyard@dbca.wa.gov.au) if you have any queries regarding this advice.

Yours sincerely



Alicia Whittington
A/Regional Manager

14 March 2022



Your Ref:

Our Ref: F-AA-41435 D-AA-21/11024

Contact: Franziska Marian 9222 2000

Ben Lewis
Chief Executive Officer
Shire of Exmouth
2 Truscott Crescent
Exmouth WA 6707

Attention: Development Services

Via email: info@exmouth.wa.gov.au

Dear Mr Lewis

RE: PROPOSED SCHEME AMENDMENT NO.6 TO LOCAL PLANNING SCHEME NO.4 AND PROPOSED SCHEME AMENDMENT NO.7 TO LOCAL PLANNING SCHEME NO.4

Thank you for your letter of 10 January 2021 requesting comments from the Department of Health (DOH) on the above proposal.

The DOH provides the following comment:

1. *Water Supply and Wastewater Disposal*

The DOH has no objection to the proposal in relation to the management of wastewater subject to the following:

- Ensure temporary onsite wastewater facilities and amenities are available for all proposed guests;
- Ensure there are adequate amenities for the proposed number of patrons/guests. This should be based on the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Wastes) Regulations, 1974*;
- Ensure there is sufficient distances from sources that create nuisance. It is recommended the proposed site locations near the sewage ponds are not considered as part of this proposal;
- There is a management plan in place to ensure all portable amenities, toilets, holding tanks or wastewater systems are sized and approved by Local Government or reviewed by Local Government prior to DOH approval;
- If wastewater disposal is off site, approval is required for each proposal by the Shire of Exmouth and disposed of according to the Department of Water and

Environmental Regulation's (DWER) requirements by licensed cartage service providers;

- All cartage of sewage is disposed of to a licensed facility approved by DWER and most importantly, the facility must be able to accommodate the additional sewage loadings. The DOH has been advised the towns sewage treatment plant has struggled with increase loadings recently and may require upgrading.

2. Health (Miscellaneous Provisions) Act Requirements

All public access areas (dining areas, games rooms etc.) are to comply with the provisions of the *Health (Miscellaneous Provisions) Act 1911*, related regulations and guidelines and Part VI – Public Buildings.

All proposed camping sites are to comply with the provisions of the *Caravan Parks and Camping Grounds Act 1995*.

3. Medical Entomology

The subject land is in an area that occasionally experiences problems with nuisance and disease carrying mosquitoes. There is evidence from mosquito collections on surrounding land that vector mosquito species *Cx. annulirostris* and *Ae. vigilax* breed nearby, especially following heavy rainfall. These mosquitoes can disperse several kilometres from breeding sites and are known carriers of Ross River (RRV) and Barmah Forest (BFV) viruses. Several RRV cases occurred in May, June and July 2021 following substantial rain in the preceding months.

To protect the health and lifestyle of visitors and residents the mosquito risk and mosquito management should be considered and funded in the planning process. It is recommended the Environmental Health section of the Shire of Exmouth determines the likelihood and the extent of this risk and develops appropriate mosquito management plans.

Additionally, there is the potential for mosquitoes to breed in on-site infrastructure and constructed water bodies if they are poorly designed and maintained.

Recommendations:

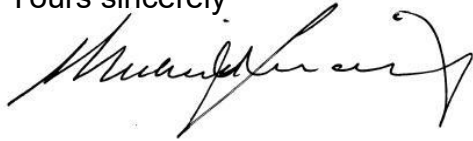
It is the recommendation of the DOH that:

- The Shire of Exmouth determines the risk from mosquitoes and mosquito-borne disease and ensures funding of effective mosquito management for the proposal period.
- On-site infrastructure and constructed water bodies need to be designed and maintained to ensure they do not breed mosquitoes.

For further information on developing a mosquito management plan please visit:
https://ww2.health.wa.gov.au/Articles/J_M/Mosquito-management

Should you have any queries or require further information please contact Franziska Marian on 9222 2000 or eh.eSubmissions@health.wa.gov.au

Yours sincerely

A handwritten signature in black ink, appearing to read 'Michael Lindsay', with a stylized flourish at the end.

Dr Michael Lindsay
EXECUTIVE DIRECTOR
ENVIRONMENTAL HEALTH DIRECTORATE

15 March 2022

Vikky Brown

From: DFES Land Use Planning <advice@dfes.wa.gov.au>
Sent: Friday, 11 February 2022 3:24 PM
To: Valentina Shales
Subject: IPA44615 - Proposed Local Planning Scheme 4 Amendments 6 & 7 - Multiple Areas - DFES Response

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Our Ref: D23118
Your Ref: LP.PL.4.7 & LP.PL.4.6

Attention: Taylor Gunn

I refer to your letter dated 10 January 2022 in relation to the referral of Local Planning Scheme 4, Amendments 6 & 7, for various Lot's within the Shire of Exmouth. DFES notes the amendments relate to the facilitation of Major Events, and holiday house/accommodation, camping, caravan park and car park uses within defined Areas 1, 2, and 3. These amendments are associated with a Total Solar Eclipse event, scheduled to occur in Exmouth in April 2023, that is expected to attract a large number of visitors to the area.

DFES notes from the referral to DFES checklist, that the Shire of Exmouth have not applied *State Planning Policy 3.7 – Planning in Bushfire Prone Areas* (SPP 3.7) to this proposal, and that detailed BMP and other reports will be provided at later planning and design stages. DFES recommends the Shire consider the updated version of the Guidelines, specifically Element 5: Vulnerable Tourism Land Uses.

Should you apply SPP 3.7 then, we request the relevant information pursuant to this policy be forwarded to DFES to allow us to review and provide comment prior to the Shire endorsement of the proposed amendments.

Land Use Planning staff are available to discuss planning proposals and provide general bushfire advice at any stage of the planning process. Please do not hesitate to contact me on the number below, should you require clarification of any of the matters raised.

Kind regards

Craig Scott
Senior Land Use Planning Officer | Land Use Planning

Emergency Services Complex | 20 Stockton Bend Cockburn Central WA 6164
T: 08 9395 9713 | E: advice@dfes.wa.gov.au | W: dfes.wa.gov.au



FOR A SAFER STATE

SCHEME AMENDMENT NO.6

PUBLIC & GOVERNMENT AGENCY SUBMISSIONS

Multiple Sites – refer to amendment documents.

Inserting 'Major Event' as a definition into Schedule 1, Inserting Local Reserve Additional Use (AR1) into Section 2.3 (Additional Uses in Local reserves), Inserting Additional Use (A9) into Schedule 2 and amending scheme maps accordingly.

No.	Government Agency/Public Summary of Submission(s)	Officer Comment and Recommendation
1.	<p>Water Corporation <u>19th January 2022</u> Thank you for your letter dated 10 January 2022. We offer the following comments regarding this proposal.</p> <p>Water Corporation has no objection to the proposed Local Planning Scheme Amendments.</p> <p>Water Corporation will be working closely with other agencies to manage the increased demand that this event will generate. The Mid-West Region Water Corporation office will liaise with the shire to develop a plan for this going forward.</p> <p><u>1st February 2022</u> The following advice is provided as a follow up and to replace the comments contained in the Water Corporation's correspondence dated 19 January 2022.</p> <p>Notwithstanding the minor nature of the text and map amendments, the Water Corporation is concerned about some aspects of the amendments (notably camping on ovals, the golf course and in residential settings) as this would significantly increase the number of overnight visitors beyond the capacity of the water and sewerage systems to cope with the additional demands.</p>	<p>The Shire forwarded this response on to TWA for their consideration as the lead agency coordinating the event. There are ongoing discussions between Water Corporation and TWA and other agencies on this topic.</p> <p>It is noted that as part of planning for the Solar Eclipse event, it has now been identified that camping will not be undertaken on the town ovals – these will be used as day-time, event spaces only. In addition, the golf course has been eliminated as a possible location for camping.</p>

	<p>The amendment reports do not provide an estimate of the potential increase in visitors, or if it is expected that accommodation areas are to be serviced by water or wastewater. In the absence of this information the Water Corporation is not able to support the amendments.</p> <p>It is recommended that the Shire liaises with the Water Corporation's assigned stakeholder manager, Mr John D'Arcy on Tel. 6330-6666 or John.D'arcy@watercorporation.com.au regarding the event and the increase in demands on the town's water and sewerage systems.</p>	<p>A Carrying Capacity Report was prepared by RFFP, on behalf of TWA, which outlines the expected visitor numbers. The estimates are based on three scenarios; low, medium and high visitation rates, with the total visitors (including residents, day trips, overnight stays and camping) ranging from 11,856 to 40,935 people.</p> <p>It is envisaged that some areas are to be used by fully self-contained vehicles/caravans which will not need to be connected to water and wastewater systems.</p> <p>It is envisaged that Lot 1391 on DP 217782 (Welch Street site) may be provided with a water tank and some ablutions facilities which will be manually emptied, and wastewater taken to the treatment facility on a regular basis. This will depend on the final scope of the proposal.</p>
2.	<p>Department of Fire and Emergency Services (DFES)</p> <p>I refer to your letter dated 10 January 2022 in relation to the referral of Local Planning Scheme 4, Amendments 6 & 7, for various Lot's within the Shire of Exmouth. DFES notes the amendments relate to the facilitation of Major Events, and holiday house/accommodation, camping, caravan park and car park uses within defined Areas 1, 2, and 3. These amendments are associated with a Total Solar Eclipse event, scheduled to occur in Exmouth in April 2023, that is expected to attract a large number of visitors to the area.</p> <p>DFES notes from the referral to DFES checklist, that the Shire of Exmouth have not applied State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7) to this proposal, and that detailed BMP and other reports will be provided at later planning and design stages. DFES recommends the Shire consider the updated version of the Guidelines, specifically Element 5: Vulnerable Tourism Land Uses.</p>	<p>Noted.</p> <p>The Shire is unable to provide analysis of the Bushfire Risk to sites at this stage and the details of proposals are not known.</p> <p>The requirements of SPP3.7 (including Element 5), will be considered at the Development Application Stage, on a</p>

	<p>Should you apply SPP 3.7 then, we request the relevant information pursuant to this policy be forwarded to DFES to allow us to review and provide comment prior to the Shire endorsement of the proposed amendments.</p> <p>Land Use Planning staff are available to discuss planning proposals and provide general bushfire advice at any stage of the planning process. Please do not hesitate to contact me on the number below, should you require clarification of any of the matters raised.</p>	<p>case-by-case basis when the extent, scale and footprint of development is further refined.</p>
<p>3.</p>	<p>Cape Conservation Group (CCG)</p> <p><i>A 15-page submission was received – please refer to the attached full submission for more detail.</i></p> <p>Thank you for the opportunity to comment on the Local Planning Scheme No. 4 Scheme Amendment 6 and 7, which are temporary and operate between 6th April to 4th May, 2023. For the purposes of this submission the two Scheme Amendments will be referred to as ‘the Amendments’.</p> <p>The environment is an economic asset and one that needs to be cared for if the brand of Ningaloo and Exmouth Gulf is to continue.</p> <p>CCG know that this is an important event for the community and are aware that to accommodate a large influx of visitors Scheme Amendments are required. However, the expansive number of lots allocated to the Amendments has raised concerns. There are areas that have environmental conservation values that should be considered for removal from the Amendments.</p> <p>This includes areas that may impact the subterranean waterways which extend from the Cape Range to the waters of Ningaloo Reef and across the coastal plain into Exmouth Gulf – including Cameron’s Cave; Environmentally Sensitive Areas, important creeks, bays and mangroves south of Wapet Creek; fragile dune landforms; swales, flora and vegetation composition along the coast of Exmouth Gulf; and areas designated for conservation.</p> <p>In particular we bring to your attention the following areas:</p>	<p>This Shire notes that the intent of Scheme Amendment 6 is to enable a controlled and managed approach to the TSE Event. The lots have been identified to provide locations for a range of purposes, such that people do not arrive in town without prior planning and camp illegally etc which would result in a much greater negative impact on the environment.</p> <p>Any site to be used for camping will require development approval and careful consideration will be given to each proposal and the impact this would have on each site and the surrounding environment.</p> <p>The precautionary principle is used in all planning decisions.</p>

<ul style="list-style-type: none"> • Cameron’s Cave is now a proposed A-Class Reserve adjacent to the Preston Street residential area an at the northern end of Heron Way. It is required to have a 500m boundary (DBCA 2012) due to environmental and Aboriginal heritage value (Ningaloo Coast Regional Strategy, pp 147). • Lot 500 (DP69582) is 12km north of town and on the western side of Murat Rd. This is adjacent to the Bundegi Coastal Reserve. It is zoned Public Purposes-Recreation and is also surrounded by Conservation Reserve. • Part Lot 1586 (DP72986) north of Charles Knife Road is zoned Environmental Conservation Reserve. <p>The regional strategies point to urban tourism and commercial developments being confined to the east coast of the North West Cape and more specifically to within the townsite boundary to prevent development damaging the fragile landscape.</p> <p>For Ningaloo, sustained growth is dependent upon a healthy environment and some of the key growth areas are located within sensitive environments. Because of this the strategies clearly focus on carefully planned activities or developments so that the natural environment can be conserved and impacts to sensitive areas are minimised. Land clearing, especially of native vegetation, is of particular concern and must be limited in its extent. Regional planning provides strong direction for decision-makers about the prevention of any long-term environmental damage that may result from activities or developments, and CCG support the EPA’s decision regarding land clearing in order to avoid long-term damage to any native vegetation or regrowth.</p> <p>CCG recommend modification of the wording of the Amendments to prevent activities and developments from potentially causing long-term environmental harm, and so that the Amendments are more aligned with the regional strategies and policies for Ningaloo. These include:</p>	<p>This relates to Amendment 7.</p> <p>Noted.</p> <p>Noted.</p> <p>The lots included within ‘the Amendments’ are on the eastern side of the cape.</p> <p>The Shire agrees, this is why the Amendment has been proposed. The Shire is of the opinion that a controlled event with land management in place will result in a better outcome for the sensitive environment surrounding Exmouth. It will also mean that pre- and post- event processes can be undertaken more easily. Including these lots in the Scheme Amendment means the use of the land can be controlled, rather than unmonitored activities that could occur without their inclusion.</p>
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	<ul style="list-style-type: none"> • Add the word 'temporary' to the definition of 'Major event' as follows: <i>Other temporary uses may be considered by the local government if they facilitate the major event.</i> • To include a new condition on the Additional Uses, being: <i>The additional use should not include the clearing of native vegetation (including regrowth in good condition).</i> To be aligned with regional planning strategies for the Ningaloo coast (Attachment 2). Taking into consideration the EPA's recommendation: "avoidance of clearing for temporary developments". • Condition 1 be amended to: <i>The purpose of the additional use is to temporarily facilitate the 'major event' within the Shire, without causing harm to the sensitive environment.</i> • Condition 2 to include a further matter for the local government to consider in assessing development approval applications, being: <i>Ensuring the proposed additional uses do not cause long-term environmental harm.</i> • Condition 4 to have the word 'effectively' removed and be amended to: <i>The additional use shall [effectively] start from 06 April 2023.</i> • Condition 8 to include the word 'separate' as follows: <i>shall be removed unless a separate development approval is granted for uses consistent with zoning.</i> • Specified additional uses for land in local reserves in Scheme area. Key areas put forward for removal from the Scheme Amendments have been considered in conjunction with the regional planning scheme, and are considered areas of environmental significance (Attachment 3). The regional planning strategies indicate that areas with high conservation values should not be developed for temporary or permanent use. LPS No. 4 also has Special Control Areas and land 	<p>Upheld. Proposed scheme provisions have been amended.</p> <p>Dismissed. These conditions do not supersede the any other Federal, State Local Law. Further, this is already captured in the planning process through development approval processes.</p> <p>See proposed new scheme condition below.</p> <p>Partially upheld. Proposed scheme provision 2 now includes:</p> <ul style="list-style-type: none"> • <i>"The impacts on the natural environment."</i> <p>Upheld. Proposed scheme provisions have been amended.</p> <p>Upheld. Proposed scheme provisions have been amended.</p>
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earmarked for conservation and Local Reserves. Of particular concern in the proposed Amendments are areas of land with conservation values, wetlands, waterways, foreshore and fragile dune systems, swales, uncleared native vegetation and flora, areas important to Aboriginal heritage, areas adjacent to coastal reserves or A-Class reserves, or in close proximity to Environmentally Sensitive Areas.

CCG would like to raise the extensive number of lots selected and listed in these Amendments. It can only be assumed that 60+ lots were put forward to give the Shire and State Government some flexibility during the planning process. If this is the case and the planning process has advanced since then, we suggest that the removal of lots with environmental values be undertaken at this time.

Please see below insert for suggested lots to be removed.

Correct. This number of lots was included to provide flexibility in the planning process for the event. There are many complex factors influencing the coordination of the event, of which, environmental impact is a significant consideration.

It is noted that not all of the lots included in the Amendment may be used during the TSE, however, they remain within the Amendment such that a full range of options can be considered to enable the best outcome for the whole town. Removing lots from the Amendment removes any contingency in planning for the event.

Scheme Amendment 6

LOT	SCA	ADD USE	AREA (Ha)	DESCRIPTION
303 DP408720 Reserve 50807	part SCA2 SCA5		76.9	Murdoch Park Golf Course. This land abuts dunes and foreshore. Local Scheme Reserves Map #4. zoned Public Open Space.
500 on DP69582	SCA3 SCA5	A9 AR1	19.1	12km north of town. Western side of Murat Rd. Adjacent to the Bundegi Coastal Park. Lot is Zoned Public Purposes-Recreation but is surrounded by Conservation Reserve. Scheme Amendment 6, Map 4.
Numerous surrounding Learmonth Airport				Total hectares for these lots is 2600. Either side of Minilya-Exmouth Road. Only suggested lots for removal from Scheme Amendment 6 are listed below.
77 DP174803	SCA6	AR1	4.2	Coastal vegetation and dunes, abuts the foreshore. Eastern side of Minilya-Exmouth Road. Learmonth. Shire of Exmouth. Zoned Public Purposes – Government Services
98 & 99 DP180507	SCA6	AR1	1.34 0.65	Coastal vegetation and dunes. Near Learmonth. Eastern side of Minilya-Exmouth Road. Shire of Exmouth. Zoned Public Purposes- Government Services
66 DP173147	SCA6	AR1	0.81	Coastal vegetation and dunes. Near Learmonth. Eastern side of Minilya-Exmouth Road Shire of Exmouth. Zoned Public Purposes- Government Services
49 & 50 DP169590	SCA6	AR1	1.93 2.02	Coastal vegetation and dunes, abuts foreshore. Shire of Exmouth. Zoned Public Purposes- Government Services Shire of Exmouth. Abuts Lot 66. Both are on the eastern side of Minilya-Exmouth Rd
60 DP172891		AR1	1.2	Coastal vegetation and dunes. 1.2ha. Vacant Crown Land. Abuts Lot 49. Eastern side of Minilya-Exmouth Rd (SCA6) and abut the foreshore.
84 85 86	SCA5 SCA6	AR1	340.6 1320.7 97.1	Largely vegetated land, uncleared. Near Lot 85 is near Heron Point. This area is Shire of Exmouth. Zoned Public Purposes- Government Services.

The majority of the lots proposed for removal by CCG are related to the functioning of Learmonth Airport. The inclusion of land relating to the airport is to support the additional/amended day-to-day running of the airport for the eclipse. It is not intended for camping or other activities. These lots need to be included in the Amendment to support air travel and other functions. Lot 303 is not intended as a location for camping and it is highly likely this site will not be used as part of the event. Lot 500 is also unlikely to be used for camping due to its location and servicing costs. Overall the majority of lots in question are unlikely to be used for caravanning and camping, however could be needed for uses associated with the TSE. Removing lots from the Amendment removes any contingency in planning for the event.

DP212281				Surrounding the airport, includes waterways and coastal dune systems.
30 DP205429	SCA5 SCA6	AR1 /	1.26	Land around Learmonth airport and continues down to the foreshore. Vacant Crown Land. Zoned Public Purposes-Government Services.
115 DP183578		AR1	10.57	Coastal vegetation and dunes adjacent to foreshore. Near Learmonth. Eastern side of Minilya Exmouth Road. Shire of Exmouth. Zoned Public Purposes-Government Services.
32 DP161583		AR1	340.7	Shire of Exmouth. Learmonth Airport. Zoned Public Purposes-Government Services.
37 & 38 DP166410		AR1	3.5	Shire of Exmouth. Learmonth Airport. Zoned Public Purposes-Government Services.
39 DP208441		AR1	193.8	Wapet Creek has conservation values. South-west section behind Learmonth Airport. Shire of Exmouth. Zoned Public Purposes-Government Services.
31 DP161582		AR1	11.2	West side of Learmonth Airport. Shire of Exmouth. Zoned Public Purposes-Government Services.
28 & 29 DP205429		AR1	0.43 3.7	Rear of Learmonth Airport. Lot 28 is adjacent to Lot 102. Zoned Public Purposes-Government Services.
Part Lot 1586 DP72986	SCA6	AR1	971	Exmouth Station. Part lot north of Charles Knife Road. LPS Map #9: Zoned Environmental Conservation Reserve.

Scheme Amendment 7

LOT	SCA	ADD USE	AREA (Ha)	DESCRIPTION
Area 4 Rural Residential Connecting to Preston St	SCA1 SCA5	A10		Area 4: 'Rural Residential' zoned area connecting to Preston Street. Cameron's Cave, an A-class Reserve, at the northern end of Heron Way, is required to have a 500m buffer (DBCA, 2012) due to environmental and Aboriginal heritage value (Ningaloo Coast Regional Strategy, pp 147).

<p>4.</p>	<p>Protect Ningaloo</p> <p><i>A three-page submission was received. Please see the attached document for full details.</i></p> <p>Protect Ningaloo represents the local, state-wide and national interests of the Australian conservation sector for this area and carries the aspirations of tens of thousands of people from right across the community - locally and beyond - for the Ningaloo-Exmouth Gulf region to be conserved and effectively managed. We also have strong connections to leading scientists and experts across many fields relevant to the needs and qualities of the region.</p> <p>We are writing this submission in support of the submission of the Cape Conservation Group, the local conservation group for the area, including the proposed text amendments.</p> <p>We recognise this is an important event for the region and that, given the high demand for people to visit to experience the eclipse, scheme amendments are likely needed to manage the expected visitation. However, the scope of the proposed Amendments is very broad and a large number of sites are proposed for Additional Uses. While the Government may not intend for all these sites to be used, the proposed Amendments allow for this to occur.</p> <p>Our concern is that, while the proposed Additional Uses are temporary, they still have the potential to cause permanent or very long-term damage to the sensitive local environment, including through the clearing of native vegetation, off-road 4WD activities (particularly impacts on the fragile dunes and foreshore), camping and so on.</p> <p>It is important that no environmental harm is caused by this short, one-off event; and that it does not open up sensitive areas and lead to future inappropriate development. We are sure you also will not want to increase the Shire's exposure to even more management expenditure than the past few challenging years have brought. We stand with you in seeking to address this problem.</p>	<p>Noted.</p> <p>Noted.</p> <p>Use of sites will be assessed on a case-by-case basis through the development approval process. As part of this process, the Shire will consider all of those aspects of the proposal included in Condition 2. This will include aspects such as fencing and restricting access to surrounding land etc.</p> <p>As for all development, clearing of any native vegetation will require approval from the Department of Water and Environmental Regulation. It is important to note that these conditions do not supersede the requirement to comply with any other Federal, State Local Law. Further, this is already captured in the planning process through development approval processes.</p>
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	<p>In particular, our view is that there should be no clearing of native vegetation (including regrowth in good condition), and we note that the EPA stated in its referral decision that it 'supports avoidance of clearing for temporary development'.</p> <p>The Cape Range peninsula is an arid zone environment with many of its habitats at their physiological extremes and biogeographical limits. These sensitive ecological communities are therefore susceptible to stress and disturbance from human impacts, including long-term impacts from clearing. Sites that contain native vegetation or are in high conservation areas, wetlands, waterways, foreshore, dune or environmentally sensitive or fragile areas, areas with important cultural heritage, and those in environmental conservation reserves, should be excluded from these Amendments.</p> <p>The Amendments should also have an overarching objective that the Additional Uses cause no environmental harm, and this should be a key consideration in selecting sites and approving development approvals.</p>	<p>See comments above.</p> <p>The Shire agrees, this is why the Amendment has been proposed. The Shire is of the opinion that a controlled event with land management in place will result in a better outcome for the sensitive environment surrounding Exmouth. It will also mean that pre- and post- event processes can be undertaken more easily. Including these lots in the Scheme Amendment means the use of the land can be controlled, rather than unmonitored activities that could occur without their inclusion.</p> <p>Noted. Proposed scheme provision 2 now includes:</p> <ul style="list-style-type: none"> • <i>"The impacts on the natural environment."</i>
5.	<p>Land Owner – Wilderness Estate</p> <p>I am writing to you to comment on LPS4 (amendment 6&7) for the Solar Eclipse 2023.</p> <p>As a resident of the Wilderness estate, I am concerned that there are so many lots allocated for amendment for the Total Solar Eclipse. Some of which may not be needed and others that may have negative impacts on the environment and residents.</p> <p>As you are aware, Exmouth has a lot of bushland, surrounding the town and ranges. Large volumes of people, not managed properly in these areas will have negative short- and long-term effects on the environment and community.</p>	<p>Noted. The number of lots was included to provide flexibility in the planning process for the event. There are many complex factors influencing the coordination of the event, of which, environmental impact is a significant consideration.</p> <p>It is noted that not all of the lots included in the Amendment may be used during the TSE, however, they remain within the Amendment such that a full range of options can be considered to enable the best outcome for the whole town. Removing lots from the Amendment removes any contingency in planning for the event.</p>

	<p>Please consider the following points:</p> <ul style="list-style-type: none"> • Stop or Limit access to vulnerable areas (sand dunes, Qualing Pool etc) • Protect public open spaces and reserves • Make sure there is no clearing of bushland areas for roads, access and parking or camping. • Ensure any temporary works and uses have no long-term effects on the environment. • Use precautionary principles in all decision making. • Remove any lots from the amendment that are not now applicable to the TSE. <p>I understand some towns folk are getting excited about how much they can rent their houses out for a week, but we must remember what a beautiful and fragile area we live in, and the TSE must be managed properly, or Exmouth, Exmouth Gulf and the Ningaloo coast could be paying the price for years to come.</p>	<p>These matters are being considered as part of the larger planning for the event by a number of stakeholders and agencies included DFES, WA Police, Department of Water and Environmental Regulation Department of Biodiversity, Conservation and Attractions. These points will also be taken into consideration during the Development Application stage for each site.</p>
6.	<p>Land Owners in Exmouth.</p> <p>Thank you for the opportunity to comment on the advertised Local Planning Scheme No. 4 Scheme Amendments 6 and 7; as property owners within the Shire of Exmouth we appreciate the chance to submit these comments and enable the Council and administration to make informed decisions on behalf of its residents and ratepayers.</p> <p>The Total Solar Eclipse 2023 will undoubtedly be a major drawcard for the future alignment of Exmouth as a tourism destination and its infrastructural development. However, with nature's timing of the Solar Eclipse, Exmouth will see heavily increased visitation and overextend its current carrying capacity as it falls directly into the April school holidays (Fri 7 April – Sun 23 April 2023), a constantly booked out period.</p> <p>Australia's Coral Coast region, where Exmouth is located, reported a 16.5 per cent increase in total overnight visitors for the year ending June 2021, and it can be expected that a variety of additional niche travellers (Astro Tourism and specific Solar eclipse travellers) will make their way to Exmouth - especially as previous Eclipse events have seen decreased visitation or cancellations due to the global COVID-19 pandemic and travel restrictions worldwide¹².</p>	<p>Noted.</p> <p>Noted.</p> <p>The purpose of Scheme Amendment 6 is to control and manage the number of visitors coming to town and the impact they will have. It is likely, that if the Shire did not initiate a Scheme Amendment and/or removed the requested lots, that the same number of people will arrive in town, with the difference being, the town being less</p>

<p>As you are aware, a recent assessment of World Heritage properties confirmed previously identified several significant threats for the Ningaloo Coast - one of them increasing visitation. And while we are hopeful that the Shire of Exmouth will put all its efforts into the sustainable development and management of this demand, it is worth noting that Exmouths' existing infrastructure has struggled with the increased visitation of the last years (2019/2020: 328,827 2020/2021: 517,3183). Controlling and regulating those additional visitors without further support has not been possible, and while you could assume that these record numbers won't be repeated every year, with the unique Total Solar Eclipse event, the region expects a minimum of 20,000 additional visitors for a 1 minute, 16 second event on April 20, 2023.</p> <p>We understand the need for additional suitable accommodation solutions, but it remains unclear how exactly the Additional Uses (A10) for Holiday House/Accommodation, Camping Ground, Caravan Park, Car Park would be managed and controlled. The EPA has assessed Scheme Amendment 6 and 7 and supports the avoidance of clearing for all temporary developments, which should become a condition within the scheme amendment.</p> <p>Further, there is an abundance of lots included in the proposed Scheme Amendment (60+), and some are along the coastal foreshore, which have been earmarked as Class A reserve and Marine Park by the McGowan Government in December 2021.</p> <p>We ask you to review the total number of lots and to remove areas containing foreshore, native vegetation, dune or environmentally fragile areas from the proposed Scheme Amendment as Camping Ground, Caravan Park or Car Park for additional use, specifically Area 4 (proposed as Class A Reserve, including Cameron's Cave), Area 5 (proposed as Class A Reserve and Foreshore) and areas zoned or surrounded by conversation/environmental conservation reserves (e.g. North of Charles Knife Road).</p> <p>If deemed necessary by Shire officers, some of these lots could still offer temporary holiday house/accommodation solutions in existing dwellings. This would also allow the Shire of Exmouth to plan with more substantial numbers of available accommodation, contrary to "hopefully" self-sufficient travellers making use of these areas.</p>	<p>prepared for their arrival. It is the Shires view that this would result in greater negative impact on the environment.</p> <p>The Amendment also looks into and considers the loading this will place on the existing infrastructure in town. Each site will be subject to a development approval process which will consider the amenities/facilities provided and how this will cumulatively impact the town.</p> <p>The Shire is aware of the capacity of its infrastructure systems and is eager not to exceed them. The Amendment aims to ensure this is managed, rather than witnessing an uncontrolled major event.</p> <p>Noted. This relates to Amendment 7.</p>
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	<p>The questions that come to mind are:</p> <ul style="list-style-type: none"> • What if these visitors are NOT self-sufficient? • What happens to sewage and waste? • Who is monitoring/regulating the type of travellers hosted on those temporary campgrounds and will ensure that health regulations are met? <p>On another note, one of our major concerns sits with the Minilya-Exmouth Road and its narrow seal and increased risk of accidents occurring due to the interactions of higher-speed passenger vehicles, slower road trains and tourist traffic. Entry points and unsealed crossovers to properties adjacent to the road are hard to see and pose a high risk for accidents, and Council is aware of reported "near misses" at the LEA and Aerodrome. This is another reason that these areas are unsuitable for the proposed temporary additional use.</p>	<p>These issues will be addressed through the development application and other approval processes for each site. The event will be monitored by appropriate staff and respondents, including the Shire, WA Police, Emergency Services and Hospital staff.</p> <p>These matters are being considered as part of the larger planning for the event by a number of stakeholders and agencies included Main Roads WA, WA Police and the Shires. Further, this will be addressed through the preparation of the Traffic Management Plan for the event.</p>
7.	<p>Department of Biodiversity, Conservation and Attractions</p> <p>Thank you for providing the Department of Biodiversity, Conservation and Attractions (DBCA) with the opportunity to comment on the proposed scheme amendment No. 6 and No. 7 to Local Planning Scheme No. 4.</p> <p>DBCA understands that the purpose of the proposed scheme amendments is to provide temporary options in and around the Exmouth townsite to cater for and facilitate the Total Solar Eclipse event in 2023. DBCA notes that temporary approvals associated with the proposed additional uses will be in effect from 6 April 2023 to 4 May 2023.</p> <p>DBCA provides the following advice pursuant to its roles and responsibilities under the Conservation and Land Management Act 1984 (CALM Act) and the Biodiversity Conservation Act 2016 (BC Act).</p> <p><u>Recommendation 1</u></p> <p>That the conditions for the proposed additional use categories, for both amendment No. 6 and No. 7, include provisions to avoid or minimise potential impacts to DBCA-managed lands and waters, and biodiversity values from increased visitor numbers.</p>	<p>Noted.</p> <p>Noted.</p> <p>Noted.</p> <p>These issues will be addressed through the development application and other approval processes for each site and can be included as conditions or advice notes when applicable.</p>

	<p><u>Discussion</u></p> <p>The proposed scheme amendment includes areas for additional use (A9) that are adjacent to the eastern expansion of Cape Range National Park and Giralia ex-pastoral lease, which is proposed National Park (Cabinet endorsed) and is currently unallocated Crown land (UCL) on which DBCA has management responsibilities for fire, feral animals and weeds. Additional use (A9) areas are also proposed adjacent to the Exmouth Gulf which provides potential access to nearby island nature reserves. It is noted that Additional use (AR 1) area (Lot 500 on DP 69582) is separated from Bundegi Coastal Park by Murat Road.</p> <p>The scheme amendment document advises that the additional areas have been selected to ensure that they are outside of the 'significant environmental areas' identified in the State Planning Policy 6.3 - Ningaloo Coast, however, noting the time that has elapsed since this policy was prepared in 2004, DBCA advises that there are additional CALM Act values that should be considered as part of the current scheme amendment process, based on contemporary information.</p> <p>Neither Qualing Pool nor the Camerons Cave Threatened Ecological Community and its associated land use buffer (as depicted in the Shire of Exmouth's Local Planning Strategy 2011-2025) appear to be shown in the proposed scheme amendment maps. Noting the recent McGowan Government announcement to create class A CALM Act reserves at both sites as part of its broader Plan for Our Parks initiative, it would be useful for the scheme amendment maps to delineate their location relative to the proposed additional use areas. It appears that Qualing Pool is approximately five kilometres from proposed additional use (AR1), whilst Camerons Cave Land Use Buffer abuts proposed additional use (A 10) and is approximately 300m from proposed Additional Use (A6/A9). It is recommended that these areas are delineated in the proposed scheme amendment maps.</p> <p>Noting that many visitors are expected to stay in the Exmouth area either side of the Total Solar Eclipse (Amendment Report, page 5), the increased tourist numbers facilitated by the proposed scheme amendment will likely result in increased visitor pressures at other nearby DBCA-managed lands and waters, such as Jurabi Coastal Park, Ningaloo Marine Park and Cape Range National Park.</p>	<p>Noted.</p> <p>Noted.</p> <p>This is outside of the scope and intent of Local Planning Scheme maps.</p> <p>Noted.</p>
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<p>Numerous conservation significant flora and fauna species (i.e. species protected under the BC Act and DBCA-listed priority species) also occur within and near areas proposed for additional use, including <i>Corchorus congener</i> (P3), <i>Acacia a/exandri</i> (P3), Camerons Cave millipede (<i>Stygiochiropus peculiaris</i>) (CR), black-flanked rock wallabies (<i>Petrogale a/ateralis lateralis</i>) (EN) and numerous shorebird and seabird species. Given the pre-emptive nature of the scheme amendment and the lack of specific details on the scale and nature of the proposed additional uses, DBCA notes that there is limited capacity to determine if this scheme amendment may detrimentally impact conservation significant flora and fauna species.</p> <p>The timing of the 'Major Event' (6 April to 4 May 2023) overlaps the hatchling season for threatened marine turtle species, including loggerhead (<i>Carella caretta</i>) (EN) green (<i>Chelonia mydas</i>) (VU), and hawksbill (<i>Eretmochelys imbricata</i>) (VU). Whilst there are no turtle rookeries adjacent to the proposed additional use areas, increased visitation to turtle nesting beaches by tourists accommodated in Additional Use areas is likely to occur.</p> <p>Whilst environmental management is mentioned in general terms, it appears there are no specific planning provisions within the documentation to minimise potential impacts to DBCA-managed lands and waters, and biodiversity values from increased visitation during the Total Solar Eclipse.</p> <p>Unmanaged visitor access and inappropriate visitor interactions may adversely impact DBCA-managed lands and waters, and biodiversity values through the introduction of non-indigenous species (flora and fauna), physical disturbance (including disturbance from domestic pets), habitat degradation, noise and artificial light impacts, creation of new vehicle tracks, trampling and/or removal of vegetation (including priority flora species), escaped campfires resulting in bushfires, damage to heritage sites, littering (including subsequent entanglement, entrapment and ingestion by wildlife), and pollution (including groundwater contamination and subsequent impacts to subterranean fauna).</p> <p>DBCA recommends that that the conditions for the proposed additional use categories, for both amendment No. 6 and No. 7, include provisions for:</p>	<p>The intent of the scheme amendment is to enable the Shire to consider development applications for use of land in association with the TSE. As such, the more detailed impact of proposals will be considered at this stage.</p> <p>Noted.</p> <p>The intent of the scheme amendment is to enable the Shire to consider development applications for use of land in association with the TSE. As such, the more detailed impact of proposals will be considered at this stage.</p> <p>The intent of the scheme amendment is to enable the Shire to consider development applications for use of land in association with the TSE. As such, the more detailed impact of proposals will be considered at this stage.</p>
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<ul style="list-style-type: none"> • Visitor education and awareness program, which includes but is not limited to the following: <ul style="list-style-type: none"> ○ appropriate wildlife interactions (e.g. no feeding and keeping a distance, especially in relation dingoes, noting that habituated animals may become aggressive towards people); ○ appropriate waste management (including toilet waste) to minimise artificial food sources, and to avoid littering and contamination of the environment; ○ use of existing vehicle tracks and walk trails; ○ use of bare ground for camping (i.e. no clearing of vegetation); ○ avoiding vehicle access to dune systems and shorebird habitat; ○ protection of Aboriginal heritage sites and artefacts; ○ appropriate campfire practices to reduce the risk of bushfires; ○ control of domestic pets, as well as information on the areas that comprise the department's 1080 baiting program (noting that 1080 poison baits will kill domestic dogs and cats if consumed); ○ weed hygiene, including checks that clothing, footwear and camping gear are free of seeds and soil prior to visiting Cape Range National Park, Jurabi and Bundegi coastal parks and island nature reserves; and ○ promotion of DBCA visitor guides (e.g. Turtle Watching Code of Conduct, Ningaloo Coast World Heritage area - Visitor guide and Islands in the Pilbara). • Site rehabilitation and closure of any newly established tracks from additional use areas into gazetted and proposed DBCA-managed lands at the conclusion of the additional use period. <p>DBCA understands that a communications plan will be developed by the interagency committee established by the Department of Jobs, Tourism, Science and Innovation for the purposes of the Total Solar Eclipse. Consideration could be given to developing the visitor education and awareness program as part of this communications plan.</p> <p><u>Advice Notes</u></p>	<p>These issues will be considered and addressed through the development application and other approval processes for each site and can be included as conditions or advice notes where applicable. It is anticipated that this will also be encapsulated in a Community Engagement Program to be prepared for the event.</p> <p>Upheld. Proposed scheme provision 2 now includes:</p> <ul style="list-style-type: none"> • <i>"Site rehabilitation plans."</i> <p>See comments above regarding Community Engagement Program.</p>
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	<p><u>DBCA Operations</u></p> <p>DBCA undertakes research and pest control work outside of DBCA-managed lands and waters, including work on behalf of other government agencies. There is potential that the proposed additional use areas may be near DBCA operations. To ensure that DBCA operations are not adversely impacted by the proposed scheme amendment and additional use areas, DBCA requests ongoing consultation with the Shire of Exmouth as further details regarding the additional use areas become available. Potential mitigation measures may include instigating access management to control interactions with DBCA operations and/or amending the timing of DBCA operations.</p> <p><u>Commercial Operations</u></p> <p>DBCA notes that anyone offering tourism, recreation or educational services for private benefit (profit) in lands and waters managed by DBCA during the 'Major Event' should be aware of departmental licence requirements (as per: https://www.dbca.wa.gov.au/parks-and-wildlife-service/for-business/commercial-operations-licensing#:text=Commercial%20operations%20licences%20allow%20DBCA,use%20and%20enjoyment%20of%20visitors).</p> <p><u>Other legislation</u></p> <p>DBCA notes that activities associated with the proposed scheme amendment and additional use areas may require compliance with legislative provisions administered by relevant government agencies including, but not limited to, the Environmental Protection Act 1986 (e.g. vegetation clearing) and the Aboriginal Heritage Act 1972.</p> <p>Please contact Brooke Halkyard (Ph 9840 0457 or Brooke.Halkyard@dbca.wa.gov.au) if you have any queries regarding this advice.</p>	<p>The Shire will continue to work with and provide updates to DBCA as part of the development application and processes. It is noted that regular working groups with TWA and other stakeholders and agencies are occurring as part of this event.</p> <p>This can be included as conditions and advice on any development approval. Further, any development approval issued would not supersede the requirement to comply with any other Federal, State Local Law.</p> <p>See comments above.</p>
8.	<p>Department of Health</p> <p>Thank you for your letter of 10 January 2021 requesting comments from the Department of Health (DOH) on the above proposal. The DOH provides the following comment:</p>	<p>Noted.</p>

<p>1. Water Supply and Wastewater Disposal</p> <p>The DOH has no objection to the proposal in relation to the management of wastewater subject to the following:</p> <ul style="list-style-type: none"> • Ensure temporary onsite wastewater facilities and amenities are available for all proposed guests; • Ensure there are adequate amenities for the proposed number of patrons/guests. This should be based on the <i>Health (Treatment of Sewage and Disposal of Effluent and Liquid Wastes) Regulations, 1974</i>; • Ensure there is sufficient distances from sources that create nuisance. It is recommended the proposed site locations near the sewage ponds are not considered as part of this proposal; • There is a management plan in place to ensure all portable amenities, toilets, holding tanks or wastewater systems are sized and approved by Local Government or reviewed by Local Government prior to DOH approval; • If wastewater disposal is off site, approval is required for each proposal by the Shire of Exmouth and disposed of according to the Department of Water and Environmental Regulation's (DWER) requirements by licensed cartage service providers; • All cartage of sewage is disposed of to a licensed facility approved by DWER and most importantly, the facility must be able to accommodate the additional sewage loadings. The DOH has been advised the towns sewage treatment plant has struggled with increase loadings recently and may require upgrading. <p>2. Health (Miscellaneous Provisions) Act Requirements</p> <p>All public access areas (dining areas, games rooms etc.) are to comply with the provisions of the <i>Health (Miscellaneous Provisions) Act 1911</i>, related regulations and guidelines and Part VI – Public Buildings. All proposed camping sites are to comply with the provisions of the <i>Caravan Parks and Camping Grounds Act 1995</i>.</p> <p>3. Medical Entomology</p> <p>The subject land is in an area that occasionally experiences problems with nuisance and disease carrying mosquitoes. There is evidence from mosquito collections on</p>	<p>The Shire notes that these aspects will be dealt with through the relevant Development Approval and Environmental Health and other approval processes.</p> <p>Noted.</p>
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<p>surrounding land that vector mosquito species <i>Cx. annulirostris</i> and <i>Ae. vigilax</i> breed nearby, especially following heavy rainfall. These mosquitoes can disperse several kilometres from breeding sites and are known carriers of Ross River (RRV) and Barmah Forest (BFV) viruses. Several RRV cases occurred in May, June and July 2021 following substantial rain in the preceding months.</p> <p>To protect the health and lifestyle of visitors and residents the mosquito risk and mosquito management should be considered and funded in the planning process. It is recommended the Environmental Health section of the Shire of Exmouth determines the likelihood and the extent of this risk and develops appropriate mosquito management plans.</p> <p>Additionally, there is the potential for mosquitoes to breed in on-site infrastructure and constructed water bodies if they are poorly designed and maintained.</p> <p>Recommendations:</p> <p>It is the recommendation of the DOH that:</p> <ul style="list-style-type: none"> • The Shire of Exmouth determines the risk from mosquitoes and mosquito-borne disease and ensures funding of effective mosquito management for the proposal period. • On-site infrastructure and constructed water bodies need to be designed and maintained to ensure they do not breed mosquitoes. <p>For further information on developing a mosquito management plan please visit: https://ww2.health.wa.gov.au/Articles/J_M/Mosquito-management</p> <p>Should you have any queries or require further information please contact Franziska Marian on 9222 2000 or eh.eSubmissions@health.wa.gov.au</p>	<p>Noted, see comments above.</p> <p>Noted, see comments above.</p>
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Proposed final amendment scheme provisions – Amendment No.6

- (i) Inserting the following definition for ‘Major Event’ into Schedule 1 – Terms referred to in Scheme:

Major event – means an event and/or activities that attract more visitors than the settlement and/or its surrounds can normally cater for. The use includes the temporary approval of camping, caravan parks, bed and breakfast, car parks, civic use, community purpose, fast food outlet, lunch bar, holiday accommodation, holiday house and market. Other **temporary** uses may be considered by the local government if they facilitate the major event.”

- (ii) Inserting ‘Additional Use (A9)’ into Schedule 2 – Additional Uses.

No	Description of Land	Additional Use	Conditions
A9	Lot 9510 on DP5557, Lot 1 on DP47770, Lot 848 on DP175175, Lot 715 on DP173019, Lot 112 on DP182633, Lot 220 on DP192031, Lot 101 on DP180602, Lot 1403 on DP192085, Part Lot 1419 on DP219750, Lot 1586 on DP72986, Lot 166 on DP238089, Lot 1 on DP 85354, Lot 389 on DP 210127, Lot 1 on DP 77755, Lot 392 on DP210127, Lot 393 on DP 210127, Lot 2 on SP 12562, Lot 388 on DP210127, Lot 2 on DP 92275, Lots 376, 377, 378, 379, 380, 382,383 on DP 210127 Lot 1381 on DP 408201, Lot 1375 on DP 408201, Lot 374 on DP 210127, Part Lot 5000 on DP 55568, Lot 1436 on DP 220338 and 510 on DP 408201, Lot 20 on DP 209501	As a 'D' use: <ul style="list-style-type: none"> • Major Event Use 	<ol style="list-style-type: none"> 1. The purpose of the additional use is to facilitate a ‘major event’ within the Shire. 2. In considering an application for development approval, the local government may, consider the following matters in addition to those which it may have regard to under the Scheme: <ul style="list-style-type: none"> • Whether the use is connected to and will facilitate the major event within the Shire; • The need, considering the capacity in local housing and current tourism accommodation; • Vehicular access arrangements and internal vehicle and pedestrian movements; • Occupancy limitations; • Provision of suitable setbacks and siting of development in the manner that considers surrounding land uses; • Measures to manage visual amenity impacts; • The impacts on the natural environment. • Site rehabilitation plans. • Transitioning plans; • Rubbish disposal;

			<ul style="list-style-type: none"> • Servicing including wastewater disposal, water, drainage and power; and • Toilet and other facilities. <ol style="list-style-type: none"> 3. The local government is to be satisfied that the proponent has identified appropriate strategies to manage issues by siting of land use in the context of surrounding existing and proposed land uses; and providing adequate screening measures such as fencing. 4. The additional use shall [effectively] start from 06 April 2023. 5. The additional use shall cease on after the 04 May 2023. 6. Any development approval issued by the local government for the additional use shall be no later than 04 May 2023. 7. Non-conforming use rights do not apply to the additional use. 8. After 04 May 2023, any buildings and/or structures that had been used for the additional use shall be removed unless separate development approval is granted for uses consistent with the zoning.
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(iii) Modifying Section '2.3 Additional Uses for Local Reserves' to the following:

2.3 Additional Uses for local reserves

2.3.1 The below table sets out –

- (a) classes of use for specified land located in local reserves that are additional to classes of use determined in accordance with the objectives of the reserve; and
- (b) the conditions that apply to that additional use.

Specified additional uses for land in local reserves in Scheme area:

No	Description of Land	Additional Use	Conditions
AR1	Lot 1455 and 1456 on DP32358 (LR3128/451 & LR3128/452), Lot 300 on DP40872 (R52730), Part Lot 1419 on DP 219750 (R50807), Lot 303 on DP408720 (R 50807), Lot 1493 on DP39344 (R51970), Lot 1391 on DP217782 (Reserve 51970), Lot 1030 on DP 188475, Lot 500 on DP 76589, Lot 1400 on DP 191674, Lot 102 on DP 180508 Lot 77 on DP 174803 (R 50740) Lot 98 and 99 on DP 180507 Lot 66 on DP 173147 Lot 49 and 50 on DP 169590 Lot 60 on DP 172891 Lot 84, 85 & 86 on DP 212281 Lot 30 on DP 205429 Lot 115 on DP 183578 Lot 32 on DP 161583 Lot 37 & 38 on DP 166410 Lot 39 on DP 208441 Lot 31 on DP 161582 Lot 28 and 29 on DP 205429	As a 'D' use: <ul style="list-style-type: none"> • Major Event 	<ol style="list-style-type: none"> 1. The purpose of the additional use is to facilitate a 'major event within the Shire.' 2. In considering an application for development approval, the local government may, consider the following matters in addition to those which it may have regard to under the Scheme: <ul style="list-style-type: none"> • Whether the use is connected to and will facilitate the major event within the Shire; • The need, considering the capacity in local housing and current tourism accommodation; • Vehicular access arrangements and internal vehicle and pedestrian movements; • Occupancy limitations; • Provision of suitable setbacks and siting of development in the manner that considers surrounding land uses; • Measures to manage visual amenity impacts; • The impacts on the natural environment; • Site rehabilitation plans; • Transitioning plans; • Rubbish disposal; • Servicing including wastewater disposal, water, drainage and power; and • Toilet and other facilities. 3. The local government is to be satisfied that the proponent has identified appropriate strategies to manage issues by siting of land use in the context of surrounding existing and proposed land uses; and providing adequate screening measures such as fencing. 4. The additional use shall [effectively] start from 06 April 2023.

			<p>5. The additional use shall cease on after the 04 May 2023.</p> <p>6. Any development approval issued by the local government for the additional use shall be no later than 04 May 2023.</p> <p>7. Non-conforming use rights do not apply to the additional use.</p> <p>8. After 04 May 2023, any buildings and/or structures that had been used for the additional use shall be remove unless separate development approval is granted for uses consistent with the zoning.</p>
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2.3.2 Despite anything contained in clause 2.2, land that is specified in the Table to subclause 2.3.1 may be used for the additional class of use set out in respect of that land subject to the conditions that apply to that use.

2.3.3 Despite anything contained within clause 2.2, a reserve may be used by the local government for the purpose of developing or maintaining public infrastructure.

(iv) Amend the Scheme Maps accordingly.



Shire of Exmouth
Local Planning Scheme No. 4

Amendment No. 7

Summary of Amendment Details

Inserting Additional Use (A10) into Schedule 2 and Amending Scheme Maps accordingly.

Planning and Development Act 2005

RESOLUTION TO PREPARE AMENDMENT TO LOCAL PLANNING SCHEME

Shire of Exmouth Local Planning Scheme 4 Amendment No. 7

Resolved that the Local Government pursuant to section 75 of the *Planning and Development Act 2005*, amend the above Local Planning Scheme by:

i. Inserting 'Additional Use (A10) into Schedule 2 - Additional Uses as follows

Number	Description of Land	Additional Use	Conditions
A10	Areas as per scheme maps	As a 'D' use: <ul style="list-style-type: none"> • Holiday house • Holiday Accommodation • Camping ground • Caravan park • Car Park 	<ol style="list-style-type: none"> 1. The purpose of the additional use is to facilitate a 'major event' within the Shire. 2. In considering an application for development approval, the local government may, consider the following matters in addition to those which it may have regard to under the Scheme: <ul style="list-style-type: none"> • Whether the use is connected to and will facilitate the major event within the Shire; • The need, considering the capacity in local housing and current tourism accommodation; • Occupancy limitations; • Provision of suitable setbacks and siting of development in the manner that considers surrounding land uses; • Measures to manage visual amenity impacts; • Transitioning plans; • Rubbish disposal; • Servicing including wastewater disposal, water, drainage and power; and • Toilet and other facilities. 3. The local government is to be satisfied that the proponent has identified appropriate strategies to manage issues by siting of land use in the context of surrounding existing and proposed land uses; and providing adequate screening measures such as fencing.

			<p>4. The additional use shall effectively start from 06 April 2023.</p> <p>5. The additional use shall cease on after the 04 May 2023</p> <p>6. Any development approval issued by the local government for the additional use shall be no later than 04 May 2023.</p> <p>7. Non-conforming use rights do not apply to the additional use.</p> <p>8. After 04 May 2023, any buildings and/or structures that had been used for the additional use shall be removed unless development approval is granted for uses consistent with the zoning.</p>
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ii. Amending the Scheme Map accordingly

The amendment is complex under the provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* for the following reason(s):

- a. The amendment is not addressed by the Shire of Exmouth Local Planning Strategy; and
- b. The amendment is not a basic or standard amendment.

Dated this _____ day of _____ 20____

(Chief Executive Officer)

Amendment Report

1.0 INTRODUCTION

This report has been prepared to support proposed amendment No.7 to the Shire of Exmouth's Local Planning Scheme No.4 (LPS4). The purpose of the amendment is to provide temporary options in and around the Exmouth Townsite to cater for and facilitate the Total Solar Eclipse (TSE) in April 2023.

The proposed amendment will insert an 'Additional Use' (A10) into Schedule 2 of LPS4 over a number of residential areas (**see amendment maps**).

The land uses included within Amendment No.7, being; 'Holiday House', 'Holiday Accommodation', 'Caravan Park' and 'Car Park', will be applied temporarily (between 6 April 2023 and 4 May 2023, being either side of the TSE event) to the above residential areas.

2.0 BACKGROUND

In 2023 the Shire will be in the path of totality of a rare TSE event which will take place on the 20th of April at approximately 11.30am.

Previous eclipses around the world have experienced substantial increases in visitation associated with the event. Many visitors have stayed for several days either side of the actual eclipse event.

The purpose of the amendment is to apply temporary Additional Use provisions over residential areas of the Exmouth townsite. This would temporarily allow for various short stay accommodation uses, for a four-week period, being two weeks either side of the TSE event.

The Department of Jobs, Tourism, Science and Innovation (DJTSI) is the lead agency coordinating the TSE event, collaborating with a range of government departments to ensure the delivery of a safe and secure event. This amendment would facilitate options, if needed, to temporarily cater for the expected tourist numbers.

Location and site area

The proposed amendment will apply to a number of residential areas within and surrounding the Exmouth townsite (see Figure 1 below). The area covered by the proposed amendment is approximately 214ha.

The main areas that this amendment applies to can be broadly described as:

- Area 1, 'Residential' zoned land north-west and south-west of Maidstone Cres.
- Area 2, 'Residential' area abutting Crevalle Way.
- Area 3, 'Special Use 6' zoned area adjacent Murat Rd and Madaffari Drive.
- Area 4, 'Rural Residential' zoned area connecting to Preston Street.
- Area 5, 'Special Use 9' zoned area adjacent to Minilya-Exmouth Road.

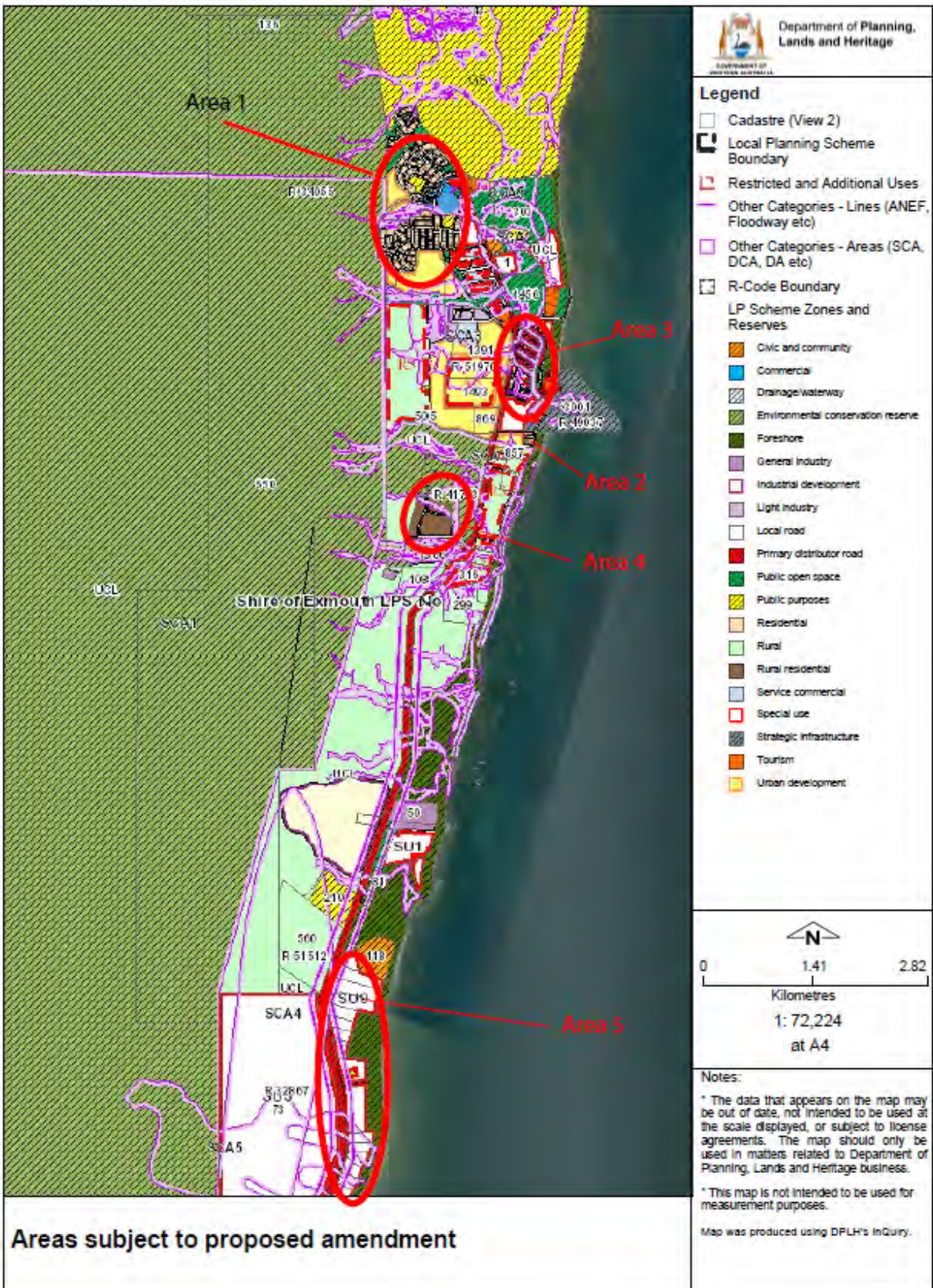


Figure 1: Areas subject to proposed amendment.

3.0 STATE & REGIONAL PLANNING CONTEXT

State Planning Strategy

The proposed amendment supports the State Planning Strategy's vision for sustained growth. The proposed amendment will provide access to and enhance an experience that will be unique in a global perspective. The TSE's potential to draw in significant tourism numbers is a unique opportunity which will have significant economic flow on effects. The proposed amendment will assist in building the State's identity, generating a sense of place, as well as building a resilient region through economic diversification.

State Planning Policy 6.3 - Ningaloo Coast

The amendment is broadly consistent with State Planning Policy 6.3 - Ningaloo Coast (SPP 6.3), as it aims to facilitate temporary options within and surrounding the townsite of Exmouth to facilitate the Total Eclipse event. Uncontrolled management of the event is likely to lead to significant impacts on the environment. The amendment provides multiple options to enable the controlled facilitation of the Total Eclipse Event, all areas currently proposed are outside of the 'significant environmental areas' identified within SPP 6.3.

Gascoyne Regional Planning and Infrastructure Framework

The proposed amendment supports several of the strategic goals identified within the Gascoyne Regional Planning and Infrastructure Framework. By allowing for temporary additional uses, the proposed amendment will enable economic and social opportunities during this one-off event and help to support economic diversity and resilience within the Shire of Exmouth. Importantly as the amendment will help to manage and control the overall event, it supports the goal of maintaining and conserving biodiversity, landscapes and environments.

4.0 LOCAL PLANNING CONTEXT

Shire of Exmouth Local Planning Strategy

Although the purpose of the proposed amendment is not specifically addressed through the Shire's Local Planning Strategy (Strategy), it does broadly align with one of the Strategy's main objectives.

The purpose of the proposed amendment is to identify temporary options across the Exmouth townsite and surrounds that will enable the Shire to cater for the expect tourist numbers as a result of the TSE. As the proposed amendment helps to capture tourism opportunities associated with the TSE via temporary provisions, it is broadly consistent with the Shire's Local Planning Strategy objective to: "Encourage the sustainable growth of tourism and tourism related opportunities throughout the Shire and balance growth against the conservation values of the environment upon which the area's tourism industry is based".

Shire of Exmouth Local Planning Scheme No. 4 (LPS4)

The areas subject of this proposed amendment are zoned 'Residential', 'Rural Residential', 'Special Use 6' and 'Special Use 9' under the LPS 4. Some of these areas are also subject to

other provisions in LPS4, however as this amendment is proposed for temporary uses, it is considered to have minimal impact on the other provisions. The other provisions include:

- Additional Use A5 - The Additional use allows for an Office to be a 'D' use;
- SCA4 – Exmouth Aerodrome Special Control Area 4;
- SCA5 – Floodplain Special Control Area 5; and
- SCA6 – Minilya – Exmouth Road Special Control Area 6.

5.0 PROPOSAL

The proposed amendment seeks to insert an 'Additional Use' (A10) into Schedule 2 – Additional Uses of LPS 4. The amendment is to apply to areas noted above, as per the scheme maps, and to be temporary for the period between 06 April 2023 and 04 May 2023.

The following are the proposed land uses under Additional Use (A10):

- Holiday house;
- Holiday Accommodation;
- Camping ground;
- Caravan park; and
- Car Park.

The permissibility of the above land uses under A10 will be 'D' use. This means the use is not permitted, unless the local government has exercised its discretion and granted development approval.

The conditions, for the temporary Additional Use (A10), set out the matters that the local government may have regard to in determining development approval. These conditions include the period for which the additional use is applicable for, being from 6 April 2023 and ending on 4 May 2023. The conditions also include provisions that specify that non-conforming use rights do not apply to the Additional Use (A10) uses; and removal of structures after 4 May 2023 is required unless a separate development approval has been granted for the use, consistent with the zoning.

Regulation 35A

As the amendment proposes temporary uses, when the amendment takes effect, no approval of any structure plan will be affected.

6.0 JUSTIFICATION

The TSE is an extraordinary and rare astronomical event and it is anticipated that the North West Cape and surrounding towns will experience extremely high visitation numbers.

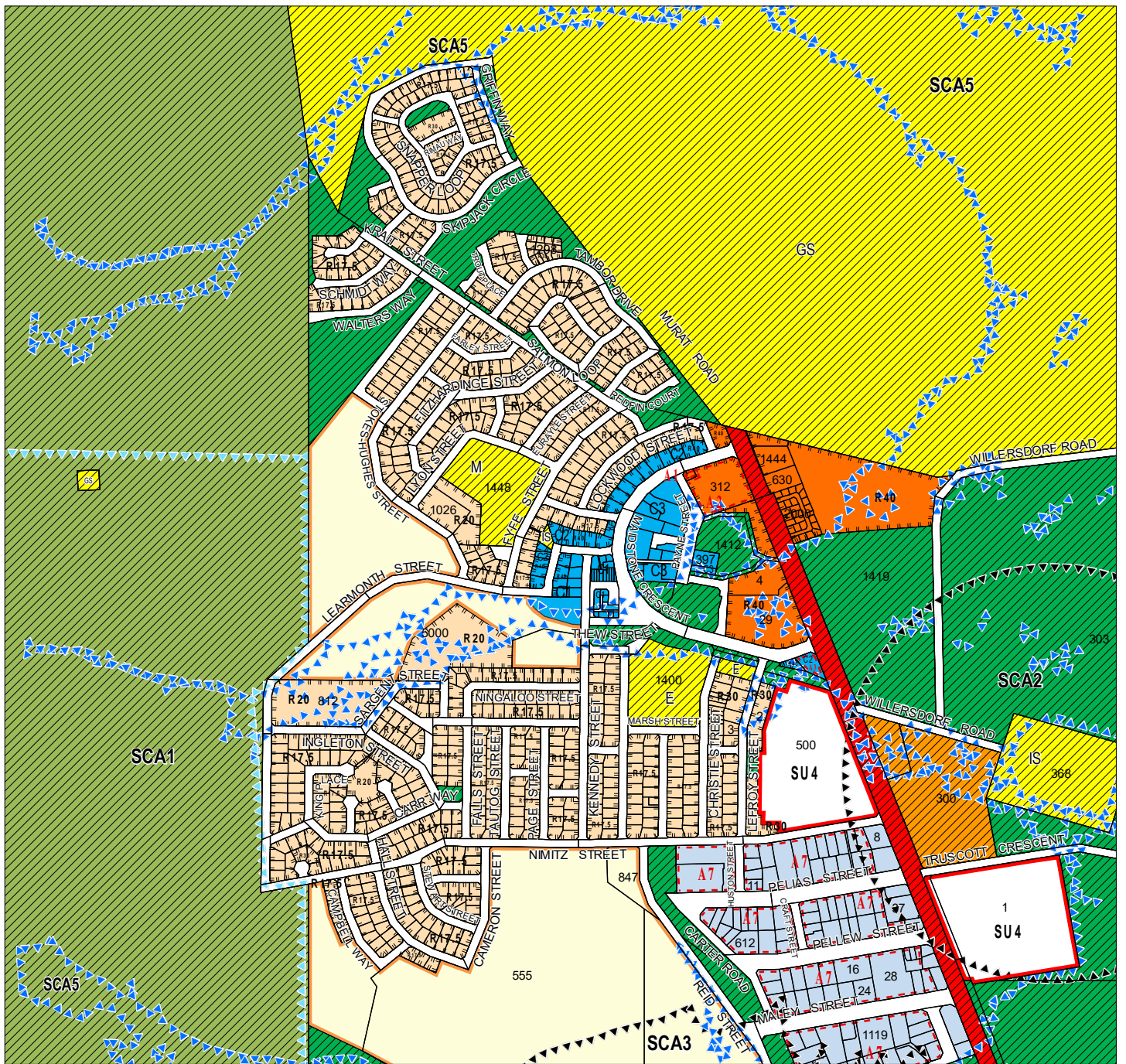
Past eclipse events have indicated that the population of centres within the totality path can swell past usual peaks. This proposed amendment will provide options for accommodating the requirements for facilitating the TSE by:

- Providing a variety of site options across the townsite and surrounds;
- Providing certainty in regards to allowable uses on proposed sites; and

- Using temporary additional use provisions to provide development control and ensure that any development is of a temporary nature.

7.0 CONCLUSION

This amendment seeks to provide temporary options to address the expected demands from increased visitation due to the 2023 TSE. The proposed amendment enables the consideration of multiple site options and temporary permissibility for uses that will facilitate additional short stay accommodation for the event across the townsite and surrounds.



EXISTING SCHEME MAP 1

Legend

Cadastre with Lot number	Urban development	GS Public purposes : Government services	A1 Additional uses
R Codes	LPS Reserves	IS Public purposes : Infrastructure services	
LPS Zones	Civic and community	M Public purposes : Medical services	
Commercial (C1,C2,C3)	Environmental conservation reserve	LPS Other Categories	
Residential	Local road	SCA5 Floodplain	
ServiceCommercial	Primary distributor road	SCA3 Exmouth Power Station	
SpecialUse	Public open space	SCA2 Exmouth Waste Water Treatment Plant	
Tourism	E Public purposes : Education	SCA1 Exmouth Water Reserve	



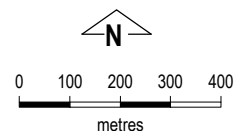
Department of Planning,
Lands and Heritage

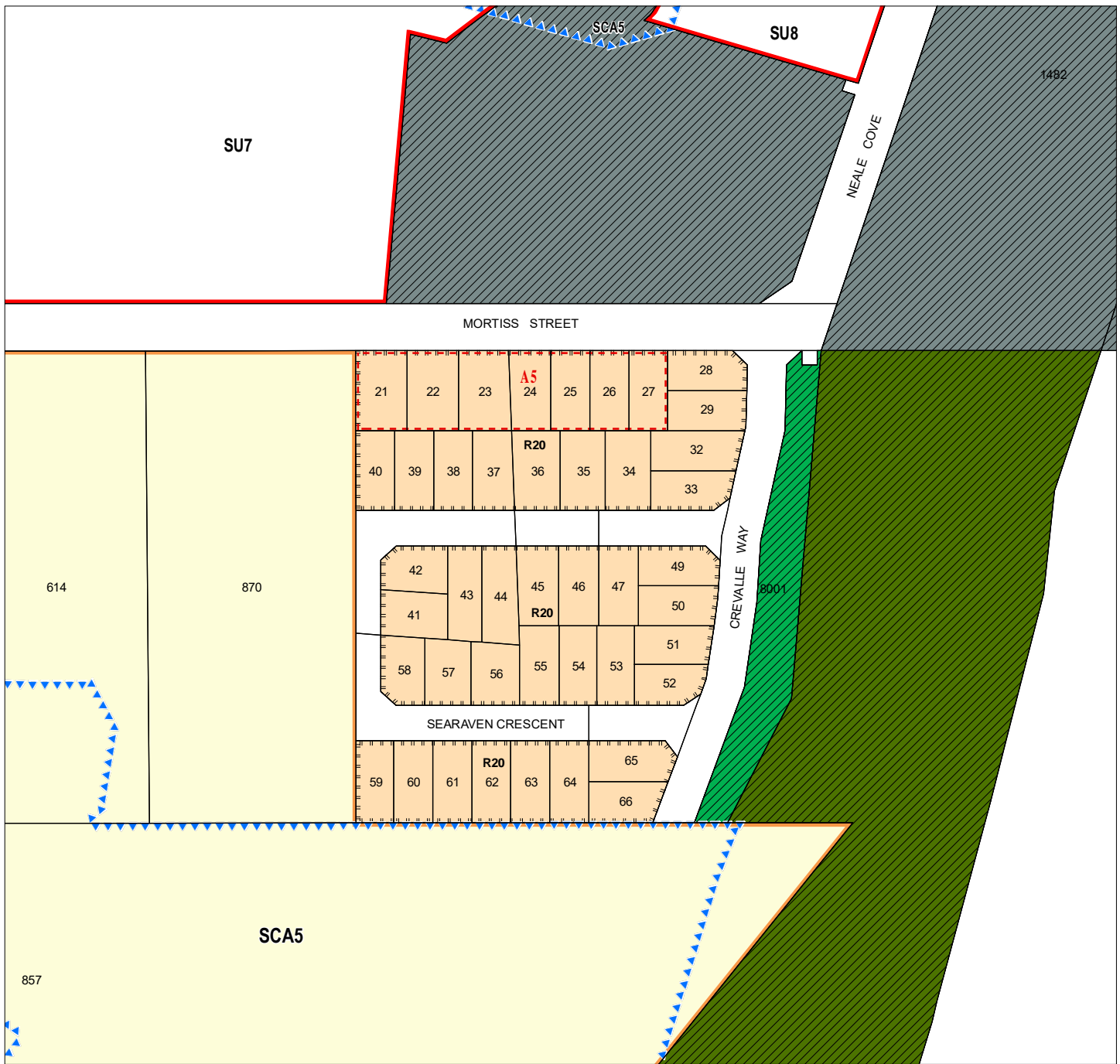
Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7












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EXISTING SCHEME MAP 2

Legend

-  Cadastre with Lot number
-  Local road
-  R Codes
-  Public open space
- LPS Zones**
-  Residential
-  Strategic infrastructure
-  Special use
- LPS Other Categories**
-  Floodplain SCA 5
-  Additional uses
-  Urban development
- LPS Reserves**
-  Foreshore



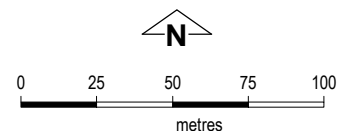
Department of Planning,
Lands and Heritage

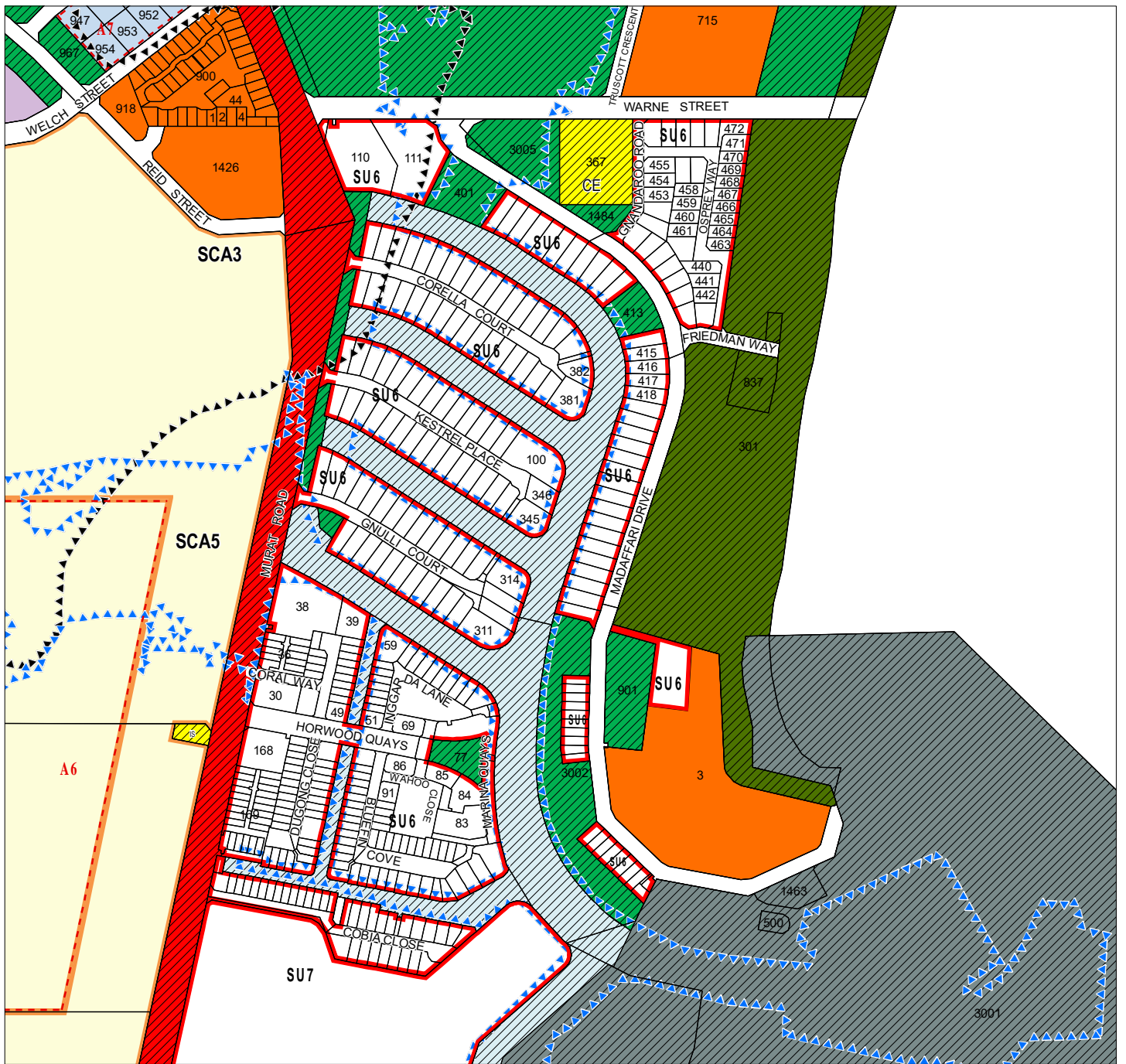
Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7

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EXISTING SCHEME MAP 3

Legend

Cadastre with Lot number	LPS Reserves	Strategic infrastructure
LPS Zones	Drainage/waterway	LPS Other Categories
Light industry	Foreshore	Floodplain Special Control Area 5
Service commercial	Local road	Exmouth Power Station Special Control Area 3
Special use	Primary distributor road	Additional uses
Tourism	Public open space	
Urban development	Public purposes : Cemetery	
	Public purposes : Infrastructure services	



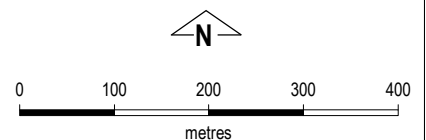
Department of Planning,
Lands and Heritage

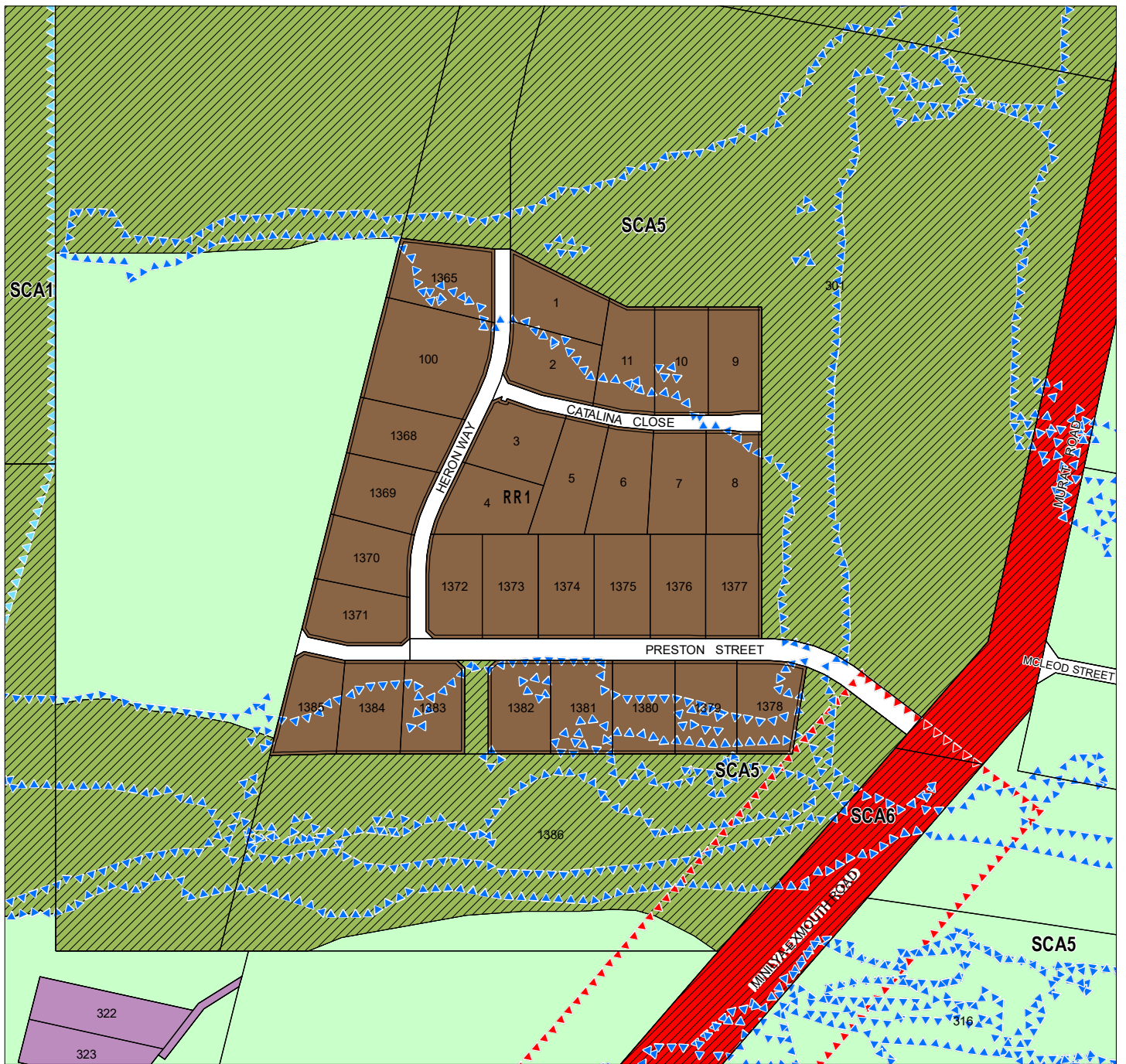
Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7











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EXISTING SCHEME MAP 4

Legend

- | | |
|---|--|
|  Cadastre with Lot number |  Primary distributor road |
| LPS Zones | LPS Other Categories |
|  General industry |  Floodplain Special Control Area 5 |
|  Rural |  Minilya-Exmouth Road Special Control Area 6 |
|  Rural residential |  Exmouth Water Reserve Special Control Area 1 |
| LPS Reserves | |
|  Environmental conservation reserve | |
|  Local road | |



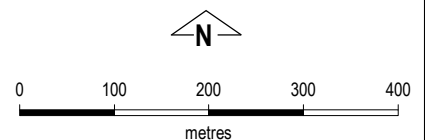
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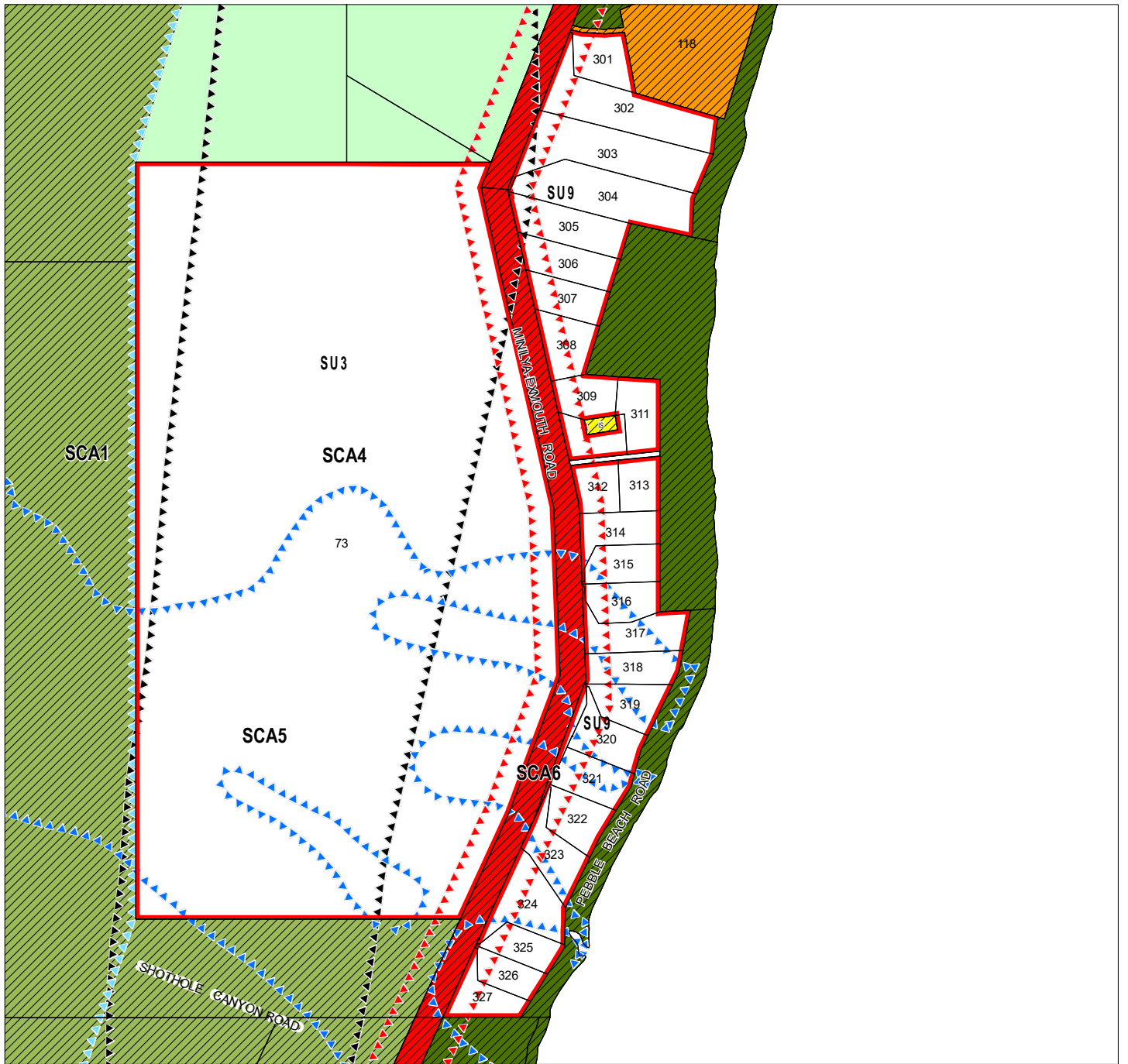
Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7

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EXISTING SCHEME MAP 5

Legend

- | | |
|------------------------------------|--|
| Cadastre with Lot number | Local road |
| LPS Zones | Primary distributor road |
| Rural | Public purposes : Infrastructure services |
| Special use | LPS Other Categories |
| LPS Reserves | Floodplain Special Control Area 5 |
| Civic and community | Minilya-Exmouth Road Special Control Area 6 |
| Environmental conservation reserve | Exmouth Aerodrome Special Control Area 4 |
| Foreshore | Exmouth Water Reserve Special Control Area 1 |



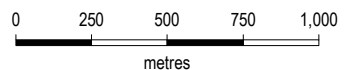
Department of Planning,
Lands and Heritage

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Shire of Exmouth

Local Planning Scheme No. 4


Amendment No. 7





PROPOSED SCHEME AMENDMENT MAP 1


Legend

 Cadastre with Lot number

LPS Zones and Reserves Amendments

 Residential

LPS Other Categories

 A10 Additional uses



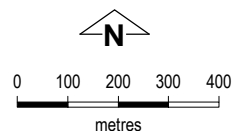
Department of Planning,
Lands and Heritage

Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7

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PROPOSED SCHEME AMENDMENT MAP 2

Legend

Cadastre with Lot number

LPS Zones and Reserves Amendments

Residential

LPS Other Categories

Additional uses



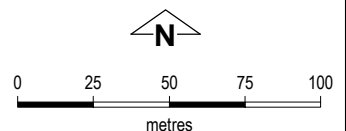
Department of Planning,
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Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7


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PROPOSED SCHEME AMENDMENT MAP 3

Legend

 Cadastre with Lot number

LPS Zones and Reserves Amendments

 Special use

 Additional use



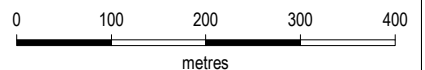
Department of Planning,
Lands and Heritage

Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7

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PROPOSED SCHEME AMENDMENT MAP 4

Legend

Cadastre with Lot number

LPS Zones and Reserves Amendments

Rural residential

Additional use



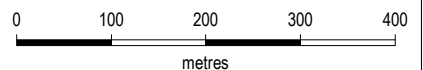
Department of Planning,
Lands and Heritage

Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7

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PROPOSED SCHEME AMENDMENT MAP 5

Legend

Cadastre with Lot number

LPS Zones and Reserves Amendments

Special use

Additional use



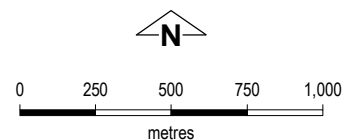
Department of Planning,
Lands and Heritage

Shire of Exmouth

Local Planning Scheme No. 4

Amendment No. 7

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Base Information supplied by Western Australian
Land Information Authority SLIP 1180-2020-1



COUNCIL ADOPTION

This Complex Amendment was adopted by resolution of the Council of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 2021.

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

COUNCIL RESOLUTION TO ADVERTISE

by resolution of the Council of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 2021, proceed to advertise this Amendment.

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

COUNCIL RECOMMENDATION

This Amendment is recommended for support by resolution of the Shire of Exmouth at the Ordinary Meeting of the Council held on the ____ day of _____, 2021 and the Common Seal of the Shire of Exmouth was hereunto affixed by the authority of a resolution of the Council in the presence of:

.....
SHIRE PRESIDENT

.....
CHIEF EXECUTIVE OFFICER

WAPC ENDORSEMENT (r.63)

.....
**DELEGATED UNDER S.16 OF
THE P&D ACT 2005**

DATE.....

FORM 6A - CONTINUED

APPROVAL GRANTED

.....
MINISTER FOR PLANNING

DATE.....

Development
Services

629 Newcastle Street
Leederville WA 6007

PO Box 100
Leederville WA 6902

T (08) 9420 2099
F (08) 9420 3193



Our Ref: TPS382412
Enquiries: Matt Calabro
Direct Tel: 9420 2099

21 January 2022

Chief Executive Officer
Shire of Exmouth
2 Truscott Crescent
EXMOUTH WA 6707

Re: Proposed Local Planning Scheme Amendments 6 & 7, Exmouth WA

Thank you for your letter dated 10 January 2022. We offer the following comments regarding this proposal.

Water Corporation has no objection to the proposed Local Planning Scheme Amendments.

Water Corporation will be working closely with other agencies to manage the increased demand that this event will generate. The Mid-West Region Water Corporation office will liaise with the shire to develop a plan for this going forward.

Should you have any queries or require further clarification on any of the above issues, please do not hesitate to contact me at matt.calabro@watercorporation.com.au

Regards,

A handwritten signature in black ink, appearing to read "Matt Calabro", written over a light blue horizontal line.

Matt Calabro
Advisor – Land Planning
Development Services



Our Ref: TPS382412
Enquiries: Matt Calabro
Direct Tel: 9420 2099
Email: land.planning@watercorporation.com.au

01 February 2022

Chief Executive Officer
Shire of Exmouth
2 Truscott Crescent
EXMOUTH WA 6707

Re: Proposed Local Planning Scheme Amendments 6 & 7, Exmouth WA

The following advice is provided as a follow up and to replace the comments contained in the Water Corporation's correspondence dated 19 January 2022.

Notwithstanding the minor nature of the text and map amendments, the Water Corporation is concerned about some aspects of the amendments (notably camping on ovals, the golf course and in residential settings) as this would significantly increase the number of overnight visitors beyond the capacity of the water and sewerage systems to cope with the additional demands.

The amendment reports do not provide an estimate of the potential increase in visitors, or if it is expected that accommodation areas are to be serviced by water or wastewater. In the absence of this information the Water Corporation is not able to support the amendments.

It is recommended that the Shire liaises with the Water Corporation's assigned stakeholder manager, Mr John D'Arcy on Tel. 6330-6666 or John.D'arcy@watercorporation.com.au regarding the event and the increase in demands on the town's water and sewerage systems.

Regards,

A handwritten signature in black ink, appearing to read "Matt Calabro", written over a light blue horizontal line.

Matt Calabro
Advisor – Land Planning
DEVELOPMENT SERVICES



Department of Biodiversity,
Conservation and Attractions



We're working for
Western Australia.

Your ref: LPS 4 Amendment 6 and 7
Our ref: PRS 48454
Enquiries: Brooke Halkyard
Phone: 9840 0457
Email: brooke.halkyard@dbca.wa.gov.au

Miss Valentina Shales
Administrator, Development Services
Shire of Exmouth
PO Box 21
EXMOUTH WA 6707 STATE

Dear Valentina

PROPOSED SCHEME AMENDMENT NO. 6 AND NO. 7 TO LOCAL PLANNING SCHEME NO. 4

Thank you for providing the Department of Biodiversity, Conservation and Attractions (DBCA) with the opportunity to comment on the proposed scheme amendment No. 6 and No. 7 to Local Planning Scheme No. 4. DBCA understands that the purpose of the proposed scheme amendments is to provide temporary options in and around the Exmouth townsite to cater for and facilitate the Total Solar Eclipse event in 2023. DBCA notes that temporary approvals associated with the proposed additional uses will be in effect from 6 April 2023 to 4 May 2023.

DBCA provides the following advice pursuant to its roles and responsibilities under the *Conservation and Land Management Act 1984* (CALM Act) and the *Biodiversity Conservation Act 2016* (BC Act).

Recommendation 1

That the conditions for the proposed additional use categories, for both amendment No. 6 and No. 7, include provisions to avoid or minimise potential impacts to DBCA-managed lands and waters, and biodiversity values from increased visitor numbers.

Discussion

The proposed scheme amendment includes areas for additional use (A9) that are adjacent to the eastern expansion of Cape Range National Park and Giralalia ex-pastoral lease, which is proposed National Park (Cabinet endorsed) and is currently unallocated Crown land (UCL) on which DBCA has management responsibilities for fire, feral animals and weeds. Additional use (A9) areas are also proposed adjacent to the Exmouth Gulf which provides potential access to nearby island nature reserves. It is noted that Additional use (AR1) area (Lot 500 on DP 69582) is separated from Bundegi Coastal Park by Murat Road.

The scheme amendment document advises that the additional areas have been selected to ensure that they are outside of the 'significant environmental areas' identified in the State Planning Policy 6.3 – Ningaloo Coast, however, noting the time that has elapsed since this policy was prepared in 2004, DBCA advises that there are additional CALM Act values that should be considered as part of the current scheme amendment process, based on contemporary information.

Neither Qualing Pool nor the Camerons Cave Threatened Ecological Community and its associated land use buffer (as depicted in the Shire of Exmouth's *Local Planning Strategy 2015-2025*) appear to be shown in the proposed scheme amendment maps. Noting the recent McGowan Government announcement to create class A CALM Act reserves at both sites as part of its broader Plan for Our

Parks initiative, it would be useful for the scheme amendment maps to delineate their location relative to the proposed additional use areas. It appears that Qualing Pool is approximately five kilometres from proposed additional use (AR1), whilst Camerons Cave Land Use Buffer abuts proposed additional use (A10) and is approximately 300m from proposed Additional Use (A6/A9). It is recommended that these areas are delineated in the proposed scheme amendment maps.

Noting that many visitors are expected to stay in the Exmouth area either side of the Total Solar Eclipse (Amendment Report, page 5), the increased tourist numbers facilitated by the proposed scheme amendment will likely result in increased visitor pressures at other nearby DBCA-managed lands and waters, such as Jurabi Coastal Park, Ningaloo Marine Park and Cape Range National Park.

Numerous conservation significant flora and fauna species (i.e. species protected under the BC Act and DBCA-listed priority species) also occur within and near areas proposed for additional use, including *Corchorus congener* (P3), *Acacia alexandri* (P3), Camerons Cave millipede (*Stygiochiropus peculiaris*) (CR), black-flanked rock wallabies (*Petrogale lateralis lateralis*) (EN) and numerous shorebird and seabird species. Given the pre-emptive nature of the scheme amendment and the lack of specific details on the scale and nature of the proposed additional uses, DBCA notes that there is limited capacity to determine if this scheme amendment may detrimentally impact conservation significant flora and fauna species.

The timing of the 'Major Event' (6 April to 4 May 2023) overlaps the hatchling season for threatened marine turtle species, including loggerhead (*Caretta caretta*) (EN) green (*Chelonia mydas*) (VU), and hawksbill (*Eretmochelys imbricata*) (VU). Whilst there are no turtle rookeries adjacent to the proposed additional use areas, increased visitation to turtle nesting beaches by tourists accommodated in Additional Use areas is likely to occur.

Whilst environmental management is mentioned in general terms, it appears there are no specific planning provisions within the documentation to minimise potential impacts to DBCA-managed lands and waters, and biodiversity values from increased visitation during the Total Solar Eclipse.

Unmanaged visitor access and inappropriate visitor interactions may adversely impact DBCA-managed lands and waters, and biodiversity values through the introduction of non-indigenous species (flora and fauna), physical disturbance (including disturbance from domestic pets), habitat degradation, noise and artificial light impacts, creation of new vehicle tracks, trampling and/or removal of vegetation (including priority flora species), escaped campfires resulting in bushfires, damage to heritage sites, littering (including subsequent entanglement, entrapment and ingestion by wildlife), and pollution (including groundwater contamination and subsequent impacts to subterranean fauna).

DBCA recommends that the conditions for the proposed additional use categories, for both amendment No. 6 and No. 7, include provisions for:

- Visitor education and awareness program, which includes but is not limited to the following:
 - appropriate wildlife interactions (e.g. no feeding and keeping a distance, especially in relation dingoes, noting that habituated animals may become aggressive towards people);
 - appropriate waste management (including toilet waste) to minimise artificial food sources, and to avoid littering and contamination of the environment;
 - use of existing vehicle tracks and walk trails;
 - use of bare ground for camping (i.e. no clearing of vegetation);
 - avoiding vehicle access to dune systems and shorebird habitat;
 - protection of Aboriginal heritage sites and artefacts;
 - appropriate campfire practices to reduce the risk of bushfires;
 - control of domestic pets, as well as information on the areas that comprise the department's 1080 baiting program (noting that 1080 poison baits will kill domestic dogs and cats if consumed);

- weed hygiene, including checks that clothing, footwear and camping gear are free of seeds and soil prior to visiting Cape Range National Park, Jurabi and Bundegi coastal parks and island nature reserves; and
 - promotion of DBCA visitor guides (e.g. *Turtle Watching Code of Conduct, Ningaloo Coast World Heritage area – Visitor guide and Islands in the Pilbara*).
- Site rehabilitation and closure of any newly established tracks from additional use areas into gazetted and proposed DBCA-managed lands at the conclusion of the additional use period.

DBCA understands that a communications plan will be developed by the interagency committee established by the Department of Jobs, Tourism, Science and Innovation for the purposes of the Total Solar Eclipse. Consideration could be given to developing the visitor education and awareness program as part of this communications plan.

Advice Notes

DBCA Operations

DBCA undertakes research and pest control work outside of DBCA-managed lands and waters, including work on behalf of other government agencies. There is potential that the proposed additional use areas may be near DBCA operations. To ensure that DBCA operations are not adversely impacted by the proposed scheme amendment and additional use areas, DBCA requests ongoing consultation with the Shire of Exmouth as further details regarding the additional use areas become available. Potential mitigation measures may include instigating access management to control interactions with DBCA operations and/or amending the timing of DBCA operations.

Commercial Operations

DBCA notes that anyone offering tourism, recreation or educational services for private benefit (profit) in lands and waters managed by DBCA during the 'Major Event' should be aware of departmental licence requirements (as per: <https://www.dbca.wa.gov.au/parks-and-wildlife-service/for-business/commercial-operations-licensing#:~:text=Commercial%20operations%20licences%20allow%20DBCA,use%20and%20enjoyment%20of%20visitors>).

Other legislation

DBCA notes that activities associated with the proposed scheme amendment and additional use areas may require compliance with legislative provisions administered by relevant government agencies including, but not limited to, the *Environmental Protection Act 1986* (e.g. vegetation clearing) and the *Aboriginal Heritage Act 1972*.

Please contact Brooke Halkyard (Ph 9840 0457 or Brooke.Halkyard@dbca.wa.gov.au) if you have any queries regarding this advice.

Yours sincerely



Alicia Whittington
A/Regional Manager

14 March 2022



Your Ref:

Our Ref: F-AA-41435 D-AA-21/11024

Contact: Franziska Marian 9222 2000

Ben Lewis
Chief Executive Officer
Shire of Exmouth
2 Truscott Crescent
Exmouth WA 6707

Attention: Development Services

Via email: info@exmouth.wa.gov.au

Dear Mr Lewis

RE: PROPOSED SCHEME AMENDMENT NO.6 TO LOCAL PLANNING SCHEME NO.4 AND PROPOSED SCHEME AMENDMENT NO.7 TO LOCAL PLANNING SCHEME NO.4

Thank you for your letter of 10 January 2021 requesting comments from the Department of Health (DOH) on the above proposal.

The DOH provides the following comment:

1. *Water Supply and Wastewater Disposal*

The DOH has no objection to the proposal in relation to the management of wastewater subject to the following:

- Ensure temporary onsite wastewater facilities and amenities are available for all proposed guests;
- Ensure there are adequate amenities for the proposed number of patrons/guests. This should be based on the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Wastes) Regulations, 1974*;
- Ensure there is sufficient distances from sources that create nuisance. It is recommended the proposed site locations near the sewage ponds are not considered as part of this proposal;
- There is a management plan in place to ensure all portable amenities, toilets, holding tanks or wastewater systems are sized and approved by Local Government or reviewed by Local Government prior to DOH approval;
- If wastewater disposal is off site, approval is required for each proposal by the Shire of Exmouth and disposed of according to the Department of Water and

Environmental Regulation's (DWER) requirements by licensed cartage service providers;

- All cartage of sewage is disposed of to a licensed facility approved by DWER and most importantly, the facility must be able to accommodate the additional sewage loadings. The DOH has been advised the towns sewage treatment plant has struggled with increase loadings recently and may require upgrading.

2. Health (Miscellaneous Provisions) Act Requirements

All public access areas (dining areas, games rooms etc.) are to comply with the provisions of the *Health (Miscellaneous Provisions) Act 1911*, related regulations and guidelines and Part VI – Public Buildings.

All proposed camping sites are to comply with the provisions of the *Caravan Parks and Camping Grounds Act 1995*.

3. Medical Entomology

The subject land is in an area that occasionally experiences problems with nuisance and disease carrying mosquitoes. There is evidence from mosquito collections on surrounding land that vector mosquito species *Cx. annulirostris* and *Ae. vigilax* breed nearby, especially following heavy rainfall. These mosquitoes can disperse several kilometres from breeding sites and are known carriers of Ross River (RRV) and Barmah Forest (BFV) viruses. Several RRV cases occurred in May, June and July 2021 following substantial rain in the preceding months.

To protect the health and lifestyle of visitors and residents the mosquito risk and mosquito management should be considered and funded in the planning process. It is recommended the Environmental Health section of the Shire of Exmouth determines the likelihood and the extent of this risk and develops appropriate mosquito management plans.

Additionally, there is the potential for mosquitoes to breed in on-site infrastructure and constructed water bodies if they are poorly designed and maintained.

Recommendations:

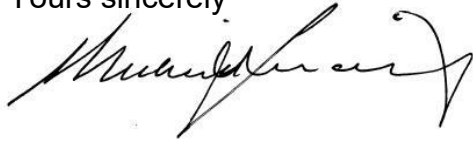
It is the recommendation of the DOH that:

- The Shire of Exmouth determines the risk from mosquitoes and mosquito-borne disease and ensures funding of effective mosquito management for the proposal period.
- On-site infrastructure and constructed water bodies need to be designed and maintained to ensure they do not breed mosquitoes.

For further information on developing a mosquito management plan please visit:
https://ww2.health.wa.gov.au/Articles/J_M/Mosquito-management

Should you have any queries or require further information please contact Franziska Marian on 9222 2000 or eh.eSubmissions@health.wa.gov.au

Yours sincerely

A handwritten signature in black ink, appearing to read 'Michael Lindsay', written in a cursive style.

Dr Michael Lindsay
EXECUTIVE DIRECTOR
ENVIRONMENTAL HEALTH DIRECTORATE

15 March 2022

Vikky Brown

From: DFES Land Use Planning <advice@dfes.wa.gov.au>
Sent: Friday, 11 February 2022 3:24 PM
To: Valentina Shales
Subject: IPA44615 - Proposed Local Planning Scheme 4 Amendments 6 & 7 - Multiple Areas - DFES Response

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Our Ref: D23118
Your Ref: LP.PL.4.7 & LP.PL.4.6

Attention: Taylor Gunn

I refer to your letter dated 10 January 2022 in relation to the referral of Local Planning Scheme 4, Amendments 6 & 7, for various Lot's within the Shire of Exmouth. DFES notes the amendments relate to the facilitation of Major Events, and holiday house/accommodation, camping, caravan park and car park uses within defined Areas 1, 2, and 3. These amendments are associated with a Total Solar Eclipse event, scheduled to occur in Exmouth in April 2023, that is expected to attract a large number of visitors to the area.

DFES notes from the referral to DFES checklist, that the Shire of Exmouth have not applied *State Planning Policy 3.7 – Planning in Bushfire Prone Areas* (SPP 3.7) to this proposal, and that detailed BMP and other reports will be provided at later planning and design stages. DFES recommends the Shire consider the updated version of the Guidelines, specifically Element 5: Vulnerable Tourism Land Uses.

Should you apply SPP 3.7 then, we request the relevant information pursuant to this policy be forwarded to DFES to allow us to review and provide comment prior to the Shire endorsement of the proposed amendments.

Land Use Planning staff are available to discuss planning proposals and provide general bushfire advice at any stage of the planning process. Please do not hesitate to contact me on the number below, should you require clarification of any of the matters raised.

Kind regards

Craig Scott
Senior Land Use Planning Officer | Land Use Planning

Emergency Services Complex | 20 Stockton Bend Cockburn Central WA 6164
T: 08 9395 9713 | E: advice@dfes.wa.gov.au | W: dfes.wa.gov.au



FOR A SAFER STATE

SCHEME AMENDMENT NO.7

PUBLIC & GOVERNMENT AGENCY SUBMISSIONS

Multiple Sites – refer to amendment documents.

Insert Additional Use (A10) into Schedule 2 and Amending Scheme Maps accordingly.

No.	Government Agency/Public Summary of Submission(s)	Officer Comment and Recommendation
1.	<p>Water Corporation <u>19th January 2022</u> Thank you for your letter dated 10 January 2022. We offer the following comments regarding this proposal.</p> <p>Water Corporation has no objection to the proposed Local Planning Scheme Amendments.</p> <p>Water Corporation will be working closely with other agencies to manage the increased demand that this event will generate. The Mid-West Region Water Corporation office will liaise with the shire to develop a plan for this going forward.</p> <p><u>1st February 2022</u> The following advice is provided as a follow up and to replace the comments contained in the Water Corporation’s correspondence dated 19 January 2022.</p> <p>Notwithstanding the minor nature of the text and map amendments, the Water Corporation is concerned about some aspects of the amendments (notably camping on ovals, the golf course and in residential settings) as this would significantly increase the number of overnight visitors beyond the capacity of the water and sewerage systems to cope with the additional demands.</p>	<p>The Shire forwarded this response on to TWA for their consideration as the lead agency coordinating the event. There ongoing discussions between Water Corporation and TWA and other agencies on this topic.</p> <p>It is noted that as part of planning for the Solar Eclipse event, it has now been identified that camping will not be undertaken on the town ovals – these will be used as day-time, event spaces only. In addition, the golf course has been eliminated as a possible location for camping.</p>

	<p>The amendment reports do not provide an estimate of the potential increase in visitors, or if it is expected that accommodation areas are to be serviced by water or wastewater. In the absence of this information the Water Corporation is not able to support the amendments.</p> <p>It is recommended that the Shire liaises with the Water Corporation's assigned stakeholder manager, Mr John D'Arcy on Tel. 6330-6666 or John.D'arcy@watercorporation.com.au regarding the event and the increase in demands on the town's water and sewerage systems.</p>	<p>A Carrying Capacity Report was prepared by RFFP, on behalf of TWA, which outlines the expected visitor numbers. The estimates are based on three scenarios; low, medium and high visitation rates, with the total visitors (including residents, day trips, overnight stays and camping) ranging from 11,856 to 40,935 people.</p> <p>It is envisaged that some areas are to be used by fully self-contained vehicles/caravans which will not need to be connected to water and wastewater systems.</p> <p>It is envisaged that Lot 1391 on DP 217782 (Welch Street site) may be provided with a water tank and some ablutions facilities which will be manually emptied, and wastewater taken to the treatment facility on a regular basis. This will depend on the final scope of the proposal.</p>
2.	<p>Department of Fire and Emergency Services (DFES)</p> <p>I refer to your letter dated 10 January 2022 in relation to the referral of Local Planning Scheme 4, Amendments 6 & 7, for various Lot's within the Shire of Exmouth. DFES notes the amendments relate to the facilitation of Major Events, and holiday house/accommodation, camping, caravan park and car park uses within defined Areas 1, 2, and 3. These amendments are associated with a Total Solar Eclipse event, scheduled to occur in Exmouth in April 2023, that is expected to attract a large number of visitors to the area.</p> <p>DFES notes from the referral to DFES checklist, that the Shire of Exmouth have not applied State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP 3.7) to this proposal, and that detailed BMP and other reports will be provided at later planning and design stages. DFES recommends the Shire consider the updated version of the Guidelines, specifically Element 5: Vulnerable Tourism Land Uses.</p>	<p>Noted.</p> <p>The Shire is unable to provide analysis of the Bushfire Risk to sites at this stage and the details of proposals are not known.</p> <p>The requirements of SPP3.7 (including Element 5), will be considered at the Development Application Stage, on a case-by-case basis when the extent, scale and footprint of development is further refined.</p>

	<p>Should you apply SPP 3.7 then, we request the relevant information pursuant to this policy be forwarded to DFES to allow us to review and provide comment prior to the Shire endorsement of the proposed amendments.</p> <p>Land Use Planning staff are available to discuss planning proposals and provide general bushfire advice at any stage of the planning process. Please do not hesitate to contact me on the number below, should you require clarification of any of the matters raised.</p>	
3.	<p>The owner of 16 Snapper Loop Regarding your letter about the “Solar Eclipse 2023” I would like my rental property to be added to the proposition (Area 1).</p>	<p>The Shire notes that the property owner appears to be supportive of the intent of the Scheme Amendment.</p> <p>It is also noted that the property is included within the Scheme Amendment Area on Map 1.</p> <p>It is noted that separate applications will be required for the property to be formally approved for the additional use at the time of the Solar Eclipse.</p>
4.	<p>Cape Conservation Group (CCG)</p> <p><i>A 15-page submission was received – please refer to the attached full submission for more detail.</i></p> <p>Thank you for the opportunity to comment on the Local Planning Scheme No. 4 Scheme Amendment 6 and 7, which are temporary and operate between 6th April to 4th May, 2023. For the purposes of this submission the two Scheme Amendments will be referred to as ‘the Amendments’.</p> <p>The environment is an economic asset and one that needs to be cared for if the brand of Ningaloo and Exmouth Gulf is to continue.</p> <p>CCG know that this is an important event for the community and are aware that to accommodate a large influx of visitors Scheme Amendments are required. However, the expansive number of lots allocated to the Amendments has raised concerns. There are</p>	<p>This Shire notes that the intent of Scheme Amendment 7 is to enable a controlled and managed approach to the TSE Event. The lots have been identified to provide locations for a range of purposes, such that people do not arrive in town without prior planning and camp illegally etc which would result in a much greater negative impact on the environment.</p>

areas that have environmental conservation values that should be considered for removal from the Amendments.

This includes areas that may impact the subterranean waterways which extend from the Cape Range to the waters of Ningaloo Reef and across the coastal plain into Exmouth Gulf – including Cameron’s Cave; Environmentally Sensitive Areas, important creeks, bays and mangroves south of Wapet Creek; fragile dune landforms; swales, flora and vegetation composition along the coast of Exmouth Gulf; and areas designated for conservation.

In particular we bring to your attention the following areas:

- Cameron’s Cave is now a proposed A-Class Reserve adjacent to the Preston Street residential area and at the northern end of Heron Way. It is required to have a 500m boundary (DBCA 2012) due to environmental and Aboriginal heritage value (Ningaloo Coast Regional Strategy, pp 147).

- Lot 500 (DP69582) is 12km north of town and on the western side of Murat Rd. This is adjacent to the Bundegi Coastal Reserve. It is zoned Public Purposes-Recreation and is also surrounded by Conservation Reserve.
- Part Lot 1586 (DP72986) north of Charles Knife Road is zoned Environmental Conservation Reserve.

The precautionary principle is used in all planning decisions. It is noted that Amendment 7 is intended to enable small scale, temporary accommodation land uses on private land. It is envisaged that this will amount to additional caravans on residential lots. Given the existing residential nature of the lots included in Amendment 7, the environmental impact of such a proposal is considered minimal.

Exert from Shire of Exmouth Local Planning Strategy showing Cameron’s Cave 500m Landuse Buffer – to the north of Heron Way subdivision.



This relates to Amendment 6.

This relates to Amendment 6.

<p>The regional strategies point to urban tourism and commercial developments being confined to the east coast of the North West Cape and more specifically to within the townsite boundary to prevent development damaging the fragile landscape.</p> <p>For Ningaloo, sustained growth is dependent upon a healthy environment and some of the key growth areas are located within sensitive environments. Because of this the strategies clearly focus on carefully planned activities or developments so that the natural environment can be conserved and impacts to sensitive areas are minimised. Land clearing, especially of native vegetation, is of particular concern and must be limited in its extent. Regional planning provides strong direction for decision-makers about the prevention of any long-term environmental damage that may result from activities or developments, and CCG support the EPA's decision regarding land clearing in order to avoid long-term damage to any native vegetation or regrowth.</p> <p>CCG recommend modification of the wording of the Amendments to prevent activities and developments from potentially causing long-term environmental harm, and so that the Amendments are more aligned with the regional strategies and policies for Ningaloo. These include:</p> <ul style="list-style-type: none"> • Add the word 'temporary' to the definition of 'Major event' as follows: <i>Other temporary uses may be considered by the local government if they facilitate the major event.</i> • To include a new condition on the Additional Uses, being: <i>The additional use should not include the clearing of native vegetation (including regrowth in good condition).</i> To be aligned with regional planning strategies for the Ningaloo coast (Attachment 2). Taking into consideration the EPA's recommendation: "avoidance of clearing for temporary developments". 	<p>The lots included within 'the Amendments' are on the eastern side of the cape.</p> <p>The Shire agrees, this is why the Amendment has been proposed. The Shire is of the opinion that a controlled event with land management in place will result in a better outcome for the sensitive environment surrounding Exmouth. It will also mean that pre- and post- event processes can be undertaken more easily. Including these lots in the Scheme Amendment means the use of the land can be controlled, rather than unmonitored activities that could occur without their inclusion.</p> <p>This relates to Amendment 6.</p> <p>Dismissed. These conditions do not supersede the any other Federal, State Local Law. Further, this is already captured in the planning process through development approval processes.</p>
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<ul style="list-style-type: none"> • Condition 1 be amended to: <i>The purpose of the additional use is to temporarily facilitate the 'major event' within the Shire, without causing harm to the sensitive environment.</i> • Condition 2 to include a further matter for the local government to consider in assessing development approval applications, being: <i>Ensuring the proposed additional uses do not cause long-term environmental harm.</i> • Condition 4 to have the word 'effectively' removed and be amended to: <i>The additional use shall [effectively] start from 06 April 2023.</i> • Condition 8 to include the word 'separate' as follows: <i>shall be removed unless a separate development approval is granted for uses consistent with zoning.</i> • Specified additional uses for land in local reserves in Scheme area. Key areas put forward for removal from the Scheme Amendments have been considered in conjunction with the regional planning scheme, and are considered areas of environmental significance (Attachment 3). The regional planning strategies indicate that areas with high conservation values should not be developed for temporary or permanent use. LPS No. 4 also has Special Control Areas and land earmarked for conservation and Local Reserves. Of particular concern in the proposed Amendments are areas of land with conservation values, wetlands, waterways, foreshore and fragile dune systems, swales, uncleared native vegetation and flora, areas important to Aboriginal heritage, areas adjacent to coastal reserves or A-Class reserves, or in close proximity to Environmentally Sensitive Areas. <p>CCG would like to raise the extensive number of lots selected and listed in these Amendments. It can only be assumed that 60+ lots were put forward to give the Shire and State Government some flexibility during the planning process. If this is the case and the planning process has advanced since then, we suggest that the removal of lots with environmental values be undertaken at this time.</p>	<p>See proposed new scheme condition below.</p> <p>Partially upheld. Proposed scheme provision 2 now includes:</p> <ul style="list-style-type: none"> • <i>"The impacts on the natural environment."</i> <p>Upheld. Proposed scheme provisions have been amended.</p> <p>Upheld. Proposed scheme provisions have been amended.</p> <p>This relates to Amendment 6.</p> <p>This relates to Amendment 6.</p>
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Please see below insert for suggested lots to be removed.

Scheme Amendment 6

LOT	SCA	ADD USE	AREA (Ha)	DESCRIPTION
303 DP408720 Reserve 50807	part SCA2 SCA5		76.9	Murdoch Park Golf Course. This land abuts dunes and foreshore. Local Scheme Reserves Map #4. zoned Public Open Space.
500 on DP69582	SCA3 SCA5	A9 AR1	19.1	12km north of town. Western side of Murat Rd. Adjacent to the Bundegi Coastal Park. Lot is Zoned Public Purposes-Recreation but is surrounded by Conservation Reserve. Scheme Amendment 6, Map 4.
Numerous surrounding Learmonth Airport				Total hectares for these lots is 2600. Either side of Minilya-Exmouth Road. Only suggested lots for removal from Scheme Amendment 6 are listed below.
77 DP174803	SCA6	AR1	4.2	Coastal vegetation and dunes, abuts the foreshore. Eastern side of Minilya-Exmouth Road. Learmonth. Shire of Exmouth. Zoned Public Purposes – Government Services
98 & 99 DP180507	SCA6	AR1	1.34 0.65	Coastal vegetation and dunes. Near Learmonth. Eastern side of Minilya-Exmouth Road. Shire of Exmouth. Zoned Public Purposes- Government Services
66 DP173147	SCA6	AR1	0.81	Coastal vegetation and dunes. Near Learmonth. Eastern side of Minilya-Exmouth Road Shire of Exmouth. Zoned Public Purposes- Government Services
49 & 50 DP169590	SCA6	AR1	1.93 2.02	Coastal vegetation and dunes, abuts foreshore. Shire of Exmouth. Zoned Public Purposes- Government Services Shire of Exmouth. Abuts Lot 66. Both are on the eastern side of Minilya-Exmouth Rd
60 DP172891		AR1	1.2	Coastal vegetation and dunes. 1.2ha. Vacant Crown Land. Abuts Lot 49. Eastern side of Minilya-Exmouth Rd (SCA6) and abut the foreshore.
84 85 86	SCA5 SCA6	AR1	340.6 1320.7 97.1	Largely vegetated land, uncleared. Near Lot 85 is near Heron Point. This area is Shire of Exmouth. Zoned Public Purposes- Government Services.

This relates to Amendment 6.

DP212281				Surrounding the airport, includes waterways and coastal dune systems.
30 DP205429	SCA5 SCA6	AR1 /	1.26	Land around Learmonth airport and continues down to the foreshore. Vacant Crown Land. Zoned Public Purposes-Government Services.
115 DP183578		AR1	10.57	Coastal vegetation and dunes adjacent to foreshore. Near Learmonth. Eastern side of Minilya Exmouth Road. Shire of Exmouth. Zoned Public Purposes-Government Services.
32 DP161583		AR1	340.7	Shire of Exmouth. Learmonth Airport. Zoned Public Purposes-Government Services.
37 & 38 DP166410		AR1	3.5	Shire of Exmouth. Learmonth Airport. Zoned Public Purposes-Government Services.
39 DP208441		AR1	193.8	Wapet Creek has conservation values. South-west section behind Learmonth Airport. Shire of Exmouth. Zoned Public Purposes-Government Services.
31 DP161582		AR1	11.2	West side of Learmonth Airport. Shire of Exmouth. Zoned Public Purposes-Government Services.
28 & 29 DP205429		AR1	0.43 3.7	Rear of Learmonth Airport. Lot 28 is adjacent to Lot 102. Zoned Public Purposes-Government Services.
Part Lot 1586 DP72986	SCA6	AR1	971	Exmouth Station. Part lot north of Charles Knife Road. LPS Map #9: Zoned Environmental Conservation Reserve.

Scheme Amendment 7

LOT	SCA	ADD USE	AREA (Ha)	DESCRIPTION
Area 4 Rural Residential Connecting to Preston St	SCA1 SCA5	A10		Area 4: 'Rural Residential' zoned area connecting to Preston Street. Cameron's Cave, an A-class Reserve, at the northern end of Heron Way, is required to have a 500m buffer (DBCA, 2012) due to environmental and Aboriginal heritage value (Ningaloo Coast Regional Strategy, pp 147).

<p>5.</p>	<p>Protect Ningaloo</p> <p><i>A three-page submission was received. Please see the attached document for full details.</i></p> <p>Protect Ningaloo represents the local, state-wide and national interests of the Australian conservation sector for this area and carries the aspirations of tens of thousands of people from right across the community - locally and beyond - for the Ningaloo-Exmouth Gulf region to be conserved and effectively managed. We also have strong connections to leading scientists and experts across many fields relevant to the needs and qualities of the region.</p> <p>We are writing this submission in support of the submission of the Cape Conservation Group, the local conservation group for the area, including the proposed text amendments.</p> <p>We recognise this is an important event for the region and that, given the high demand for people to visit to experience the eclipse, scheme amendments are likely needed to manage the expected visitation. However, the scope of the proposed Amendments is very broad and a large number of sites are proposed for Additional Uses. While the Government may not intend for all these sites to be used, the proposed Amendments allow for this to occur.</p> <p>Our concern is that, while the proposed Additional Uses are temporary, they still have the potential to cause permanent or very long-term damage to the sensitive local environment, including through the clearing of native vegetation, off-road 4WD activities (particularly impacts on the fragile dunes and foreshore), camping and so on.</p> <p>It is important that no environmental harm is caused by this short, one-off event; and that it does not open up sensitive areas and lead to future inappropriate development. We are sure you also will not want to increase the Shire's exposure to even more management expenditure than the past few challenging years have brought. We stand with you in seeking to address this problem.</p>	<p>Noted.</p> <p>Noted.</p> <p>Use of sites will be assessed on a case-by-case basis through the development approval process. As part of this process, the Shire will consider all of those aspects of the proposal included in Condition 2. This will include aspects such as fencing and restricting access to surrounding land etc.</p> <p>As for all development, clearing of any native vegetation will require approval from the Department of Water and Environmental Regulation. It is important to note that these conditions do not supersede the requirement to comply with any other Federal, State Local Law. Further, this is already captured in the planning process through development approval processes.</p>
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	<p>In particular, our view is that there should be no clearing of native vegetation (including regrowth in good condition), and we note that the EPA stated in its referral decision that it 'supports avoidance of clearing for temporary development'.</p> <p>The Cape Range peninsula is an arid zone environment with many of its habitats at their physiological extremes and biogeographical limits. These sensitive ecological communities are therefore susceptible to stress and disturbance from human impacts, including long-term impacts from clearing. Sites that contain native vegetation or are in high conservation areas, wetlands, waterways, foreshore, dune or environmentally sensitive or fragile areas, areas with important cultural heritage, and those in environmental conservation reserves, should be excluded from these Amendments.</p> <p>The Amendments should also have an overarching objective that the Additional Uses cause no environmental harm, and this should be a key consideration in selecting sites and approving development approvals.</p>	<p>See comments above.</p> <p>The Shire agrees, this is why the Amendment has been proposed. The Shire is of the opinion that a controlled event with land management in place will result in a better outcome for the sensitive environment surrounding Exmouth. It will also mean that pre- and post- event processes can be undertaken more easily. Including these lots in the Scheme Amendment means the use of the land can be controlled, rather than unmonitored activities that could occur without their inclusion.</p> <p>Noted. Proposed scheme provision 2 now includes:</p> <ul style="list-style-type: none"> • <i>"The impacts on the natural environment."</i>
6.	<p>Land Owner – Wilderness Estate</p> <p>I am writing to you to comment on LPS4 (amendment 6&7) for the Solar Eclipse 2023.</p> <p>As a resident of the Wilderness estate, I am concerned that there are so many lots allocated for amendment for the Total Solar Eclipse. Some of which may not be needed and others that may have negative impacts on the environment and residents.</p> <p>As you are aware, Exmouth has a lot of bushland, surrounding the town and ranges. Large volumes of people, not managed properly in these areas will have negative short- and long-term effects on the environment and community.</p> <p>Please consider the following points:</p> <ul style="list-style-type: none"> • Stop or Limit access to vulnerable areas (sand dunes, Qualing Pool etc) • Protect public open spaces and reserves 	<p>It is noted that Amendment 7 is intended to enable small scale, temporary accommodation land uses on private land. It is envisaged that this will amount to additional caravans on residential lots. Given the existing residential nature of the lots included in Amendment 7, the environmental impact of such a proposal is minimal.</p> <p>These matters are being considered as part of the larger planning for the event by a number of stakeholders and agencies included DFES, WA Police, Department of Water</p>

	<ul style="list-style-type: none"> • Make sure there is no clearing of bushland areas for roads, access and parking or camping. • Ensure any temporary works and uses have no long-term effects on the environment. • Use precautionary principles in all decision making. • Remove any lots from the amendment that are not now applicable to the TSE. <p>I understand some towns folk are getting excited about how much they can rent their houses out for a week, but we must remember what a beautiful and fragile area we live in, and the TSE must be managed properly, or Exmouth, Exmouth Gulf and the Ningaloo coast could be paying the price for years to come.</p>	<p>and Environmental Regulation Department of Biodiversity, Conservation and Attractions. These points will also be taken into consideration during the necessary approval processes for each site.</p>
7.	<p>Land Owners in Exmouth.</p> <p>Thank you for the opportunity to comment on the advertised Local Planning Scheme No. 4 Scheme Amendments 6 and 7; as property owners within the Shire of Exmouth we appreciate the chance to submit these comments and enable the Council and administration to make informed decisions on behalf of its residents and ratepayers.</p> <p>The Total Solar Eclipse 2023 will undoubtedly be a major drawcard for the future alignment of Exmouth as a tourism destination and its infrastructural development. However, with nature's timing of the Solar Eclipse, Exmouth will see heavily increased visitation and overextend its current carrying capacity as it falls directly into the April school holidays (Fri 7 April – Sun 23 April 2023), a constantly booked out period.</p> <p>Australia's Coral Coast region, where Exmouth is located, reported a 16.5 per cent increase in total overnight visitors for the year ending June 2021, and it can be expected that a variety of additional niche travellers (Astro Tourism and specific Solar eclipse travellers) will make their way to Exmouth - especially as previous Eclipse events have seen decreased visitation or cancellations due to the global COVID-19 pandemic and travel restrictions worldwide¹².</p>	<p>Noted.</p> <p>Noted.</p> <p>The purpose of the Amendments is to control and manage the number of visitors coming to town and the impact they will have. It is likely, that if the Shire did not initiate a Scheme Amendment and/or removed the requested lots, that the same number of people will arrive in town, with the difference being, the town being less prepared for their arrival. It is the Shires view that this would result in greater negative impact on the environment.</p>

<p>As you are aware, a recent assessment of World Heritage properties confirmed previously identified several significant threats for the Ningaloo Coast - one of them increasing visitation. And while we are hopeful that the Shire of Exmouth will put all its efforts into the sustainable development and management of this demand, it is worth noting that Exmouths' existing infrastructure has struggled with the increased visitation of the last years (2019/2020: 328,827 2020/2021: 517,3183). Controlling and regulating those additional visitors without further support has not been possible, and while you could assume that these record numbers won't be repeated every year, with the unique Total Solar Eclipse event, the region expects a minimum of 20,000 additional visitors for a 1 minute, 16 second event on April 20, 2023.</p> <p>We understand the need for additional suitable accommodation solutions, but it remains unclear how exactly the Additional Uses (A10) for Holiday House/Accommodation, Camping Ground, Caravan Park, Car Park would be managed and controlled. The EPA has assessed Scheme Amendment 6 and 7 and supports the avoidance of clearing for all temporary developments, which should become a condition within the scheme amendment.</p> <p>Further, there is an abundance of lots included in the proposed Scheme Amendment (60+), and some are along the coastal foreshore, which have been earmarked as Class A reserve and Marine Park by the McGowan Government in December 2021.</p> <p>We ask you to review the total number of lots and to remove areas containing foreshore, native vegetation, dune or environmentally fragile areas from the proposed Scheme Amendment as Camping Ground, Caravan Park or Car Park for additional use, specifically Area 4 (proposed as Class A Reserve, including Cameron's Cave), Area 5 (proposed as Class A Reserve and Foreshore) and areas zoned or surrounded by conversation/environmental conservation reserves (e.g. North of Charles Knife Road).</p> <p>If deemed necessary by Shire officers, some of these lots could still offer temporary holiday house/accommodation solutions in existing dwellings. This would also allow the Shire of Exmouth to plan with more substantial numbers of available accommodation, contrary to "hopefully" self-sufficient travellers making use of these areas.</p>	<p>The Amendment also looks into and considers the loading this will place on the existing infrastructure in town. The Shire is aware of the capacity of its infrastructure systems and is eager not to exceed them. The Amendment aims to ensure this is managed, rather than witnessing an uncontrolled major event.</p> <p>This relates to Amendment 6.</p> <p>It is noted that Amendment 7 is intended to enable small scale, temporary accommodation land uses on private land. It is envisaged that this will amount to additional caravans on residential lots. Given the existing residential nature of the lots included in Amendment 7, the environmental impact of such a proposal is minimal.</p> <p>See comments above.</p>
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	<p>The questions that come to mind are</p> <ul style="list-style-type: none"> • What if these visitors are NOT self-sufficient? • What happens to sewage and waste? • Who is monitoring/regulating the type of travellers hosted on those temporary campgrounds and will ensure that health regulations are met? <p>On another note, one of our major concerns sits with the Minilya-Exmouth Road and its narrow seal and increased risk of accidents occurring due to the interactions of higher-speed passenger vehicles, slower road trains and tourist traffic. Entry points and unsealed crossovers to properties adjacent to the road are hard to see and pose a high risk for accidents, and Council is aware of reported "near misses" at the LEA and Aerodrome. This is another reason that these areas are unsuitable for the proposed temporary additional use.</p>	<p>These issues will be addressed through the relevant approval processes for each site. The event will be monitored by appropriate staff and respondents, including the Shire. WA Police, Emergency Services and Hospital staff.</p> <p>These matters are being considered as part of the larger planning for the event by a number of stakeholders and agencies included Main Roads WA, WA Police and the Shires. Further, this will be addressed through the preparation of the Traffic Management Plan for the event.</p>
8.	<p>Department of Biodiversity, Conservation and Attractions</p> <p>Thank you for providing the Department of Biodiversity, Conservation and Attractions (DBCA) with the opportunity to comment on the proposed scheme amendment No. 6 and No. 7 to Local Planning Scheme No. 4.</p> <p>DBCA understands that the purpose of the proposed scheme amendments is to provide temporary options in and around the Exmouth townsite to cater for and facilitate the Total Solar Eclipse event in 2023. DBCA notes that temporary approvals associated with the proposed additional uses will be in effect from 6 April 2023 to 4 May 2023.</p> <p>DBCA provides the following advice pursuant to its roles and responsibilities under the Conservation and Land Management Act 1984 (CALM Act) and the Biodiversity Conservation Act 2016 (BC Act).</p> <p><u>Recommendation 1</u></p> <p>That the conditions for the proposed additional use categories, for both amendment No. 6 and No. 7, include provisions to avoid or minimise potential impacts to DBCA-managed lands and waters, and biodiversity values from increased visitor numbers.</p> <p><u>Discussion</u></p>	<p>Noted.</p> <p>Noted.</p> <p>Noted.</p> <p>These issues will be addressed through the development application and other approval processes for each site and can be included as conditions or advice notes when applicable.</p>

<p>The proposed scheme amendment includes areas for additional use (A9) that are adjacent to the eastern expansion of Cape Range National Park and Giralia ex-pastoral lease, which is proposed National Park (Cabinet endorsed) and is currently unallocated Crown land (UCL) on which DBCA has management responsibilities for fire, feral animals and weeds. Additional use (A9) areas are also proposed adjacent to the Exmouth Gulf which provides potential access to nearby island nature reserves. It is noted that Additional use (AR 1) area (Lot 500 on DP 69582) is separated from Bundegi Coastal Park by Murat Road.</p> <p>The scheme amendment document advises that the additional areas have been selected to ensure that they are outside of the 'significant environmental areas' identified in the State Planning Policy 6.3 - Ningaloo Coast, however, noting the time that has elapsed since this policy was prepared in 2004, DBCA advises that there are additional CALM Act values that should be considered as part of the current scheme amendment process, based on contemporary information.</p> <p>Neither Qualing Pool nor the Camerons Cave Threatened Ecological Community and its associated land use buffer (as depicted in the Shire of Exmouth's Local Planning Strategy 2011-2025) appear to be shown in the proposed scheme amendment maps. Noting the recent McGowan Government announcement to create class A CALM Act reserves at both sites as part of its broader Plan for Our Parks initiative, it would be useful for the scheme amendment maps to delineate their location relative to the proposed additional use areas. It appears that Qualing Pool is approximately five kilometres from proposed additional use (AR1), whilst Camerons Cave Land Use Buffer abuts proposed additional use (A 10) and is approximately 300m from proposed Additional Use (A6/A9). It is recommended that these areas are delineated in the proposed scheme amendment maps.</p> <p>Noting that many visitors are expected to stay in the Exmouth area either side of the Total Solar Eclipse (Amendment Report, page 5), the increased tourist numbers facilitated by the proposed scheme amendment will likely result in increased visitor pressures at other nearby DBCA-managed lands and waters, such as Jurabi Coastal Park, Ningaloo Marine Park and Cape Range National Park.</p>	<p>This relates to Amendment 6.</p> <p>Noted.</p> <p>This is outside of the scope and intent of Local Planning Scheme maps.</p> <p>Noted.</p>
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<p>Numerous conservation significant flora and fauna species (i.e. species protected under the BC Act and DBCA-listed priority species) also occur within and near areas proposed for additional use, including <i>Corchorus congener</i> (P3), <i>Acacia a/exandri</i> (P3), Camerons Cave millipede (<i>Stygiochiropus peculiaris</i>) (CR), black-flanked rock wallabies (<i>Petroga/e /ateralis lateralis</i>) (EN) and numerous shorebird and seabird species. Given the pre-emptive nature of the scheme amendment and the lack of specific details on the scale and nature of the proposed additional uses, DBCA notes that there is limited capacity to determine if this scheme amendment may detrimentally impact conservation significant flora and fauna species.</p> <p>The timing of the 'Major Event' (6 April to 4 May 2023) overlaps the hatchling season for threatened marine turtle species, including loggerhead (<i>Carella caretta</i>) (EN) green (<i>Chelonia mydas</i>) (VU), and hawksbill (<i>Eretmoche/ys imbricata</i>) (VU). Whilst there are no turtle rookeries adjacent to the proposed additional use areas, increased visitation to turtle nesting beaches by tourists accommodated in Additional Use areas is likely to occur.</p> <p>Whilst environmental management is mentioned in general terms, it appears there are no specific planning provisions within the documentation to minimise potential impacts to DBCA-managed lands and waters, and biodiversity values from increased visitation during the Total Solar Eclipse.</p> <p>Unmanaged visitor access and inappropriate visitor interactions may adversely impact DBCA-managed lands and waters, and biodiversity values through the introduction of non-indigenous species (flora and fauna), physical disturbance (including disturbance from domestic pets), habitat degradation, noise and artificial light impacts, creation of new vehicle tracks, trampling and/or removal of vegetation (including priority flora species), escaped campfires resulting in bushfires, damage to heritage sites, littering (including subsequent entanglement, entrapment and ingestion by wildlife), and pollution (including groundwater contamination and subsequent impacts to subterranean fauna).</p>	<p>The intent of the scheme amendment is to enable the Shire to consider applications for use of land in association with the TSE on residential lots primarily temporary camping/accommodation.</p> <p>Noted.</p> <p>The intent of the scheme amendment is to allow temporary camping/accommodation uses on residential lots. These issues will be considered and addressed through the approval processes and can be included as conditions or advice notes when applicable.</p> <p>Noted. These issues will be considered and addressed through the approval processes and can be included as conditions or advice notes when applicable.</p>
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DBCA recommends that the conditions for the proposed additional use categories, for both amendment No. 6 and No. 7, include provisions for:

- Visitor education and awareness program, which includes but is not limited to the following:
 - appropriate wildlife interactions (e.g. no feeding and keeping a distance, especially in relation dingoes, noting that habituated animals may become aggressive towards people);
 - appropriate waste management (including toilet waste) to minimise artificial food sources, and to avoid littering and contamination of the environment;
 - use of existing vehicle tracks and walk trails;
 - use of bare ground for camping (i.e. no clearing of vegetation);
 - avoiding vehicle access to dune systems and shorebird habitat;
 - protection of Aboriginal heritage sites and artefacts;
 - appropriate campfire practices to reduce the risk of bushfires;
 - control of domestic pets, as well as information on the areas that comprise the department's 1080 baiting program (noting that 1080 poison baits will kill domestic dogs and cats if consumed);
 - weed hygiene, including checks that clothing, footwear and camping gear are free of seeds and soil prior to visiting Cape Range National Park, Jurabi and Bundegi coastal parks and island nature reserves; and
 - promotion of DBCA visitor guides (e.g. Turtle Watching Code of Conduct, Ningaloo Coast World Heritage area - Visitor guide and Islands in the Pilbara).
- Site rehabilitation and closure of any newly established tracks from additional use areas into gazetted and proposed DBCA-managed lands at the conclusion of the additional use period.

DBCA understands that a communications plan will be developed by the interagency committee established by the Department of Jobs, Tourism, Science and Innovation for

These issues will be considered and addressed through the development application and other approval processes for each site and can be included as conditions or advice notes where applicable. It is anticipated that this will also be encapsulated in a Community Engagement Program to be prepared for the event.

Upheld. Proposed scheme provision 2 now includes:

- *"Site rehabilitation plans."*

See comments above regarding Community Engagement Program.

<p>the purposes of the Total Solar Eclipse. Consideration could be given to developing the visitor education and awareness program as part of this communications plan.</p> <p><u>Advice Notes</u></p> <p><u>DBCA Operations</u></p> <p>DBCA undertakes research and pest control work outside of DBCA-managed lands and waters, including work on behalf of other government agencies. There is potential that the proposed additional use areas may be near DBCA operations. To ensure that DBCA operations are not adversely impacted by the proposed scheme amendment and additional use areas, DBCA requests ongoing consultation with the Shire of Exmouth as further details regarding the additional use areas become available. Potential mitigation measures may include instigating access management to control interactions with DBCA operations and/or amending the timing of DBCA operations.</p> <p><u>Commercial Operations</u></p> <p>DBCA notes that anyone offering tourism, recreation or educational services for private benefit (profit) in lands and waters managed by DBCA during the 'Major Event' should be aware of departmental licence requirements (as per: https://www.dbca.wa.gov.au/parks-and-wildlife-service/for-business/commercial-operations-licensing#:text=Commercial%20operations%20licences%20allow%20DBCA,use%20and%20enjoyment%20of%20visitors).</p> <p><u>Other legislation</u></p> <p>DBCA notes that activities associated with the proposed scheme amendment and additional use areas may require compliance with legislative provisions administered by relevant government agencies including, but not limited to, the Environmental Protection Act 1986 (e.g. vegetation clearing) and the Aboriginal Heritage Act 1972.</p>	<p>The Shire will continue to work with and provide updates to DBCA as part of the development application and processes. It is noted that regular working groups with TWA and other stakeholders and agencies are occurring as part of this event.</p> <p>Noted. Any approval issued would not supersede the requirement to comply with any other Federal, State Local Law.</p> <p>See comments above.</p>
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	Please contact Brooke Halkyard (Ph 9840 0457 or Brooke.Halkyard@dbca.wa.gov.au) if you have any queries regarding this advice.	
9.	<p>Department of Health</p> <p>Thank you for your letter of 10 January 2021 requesting comments from the Department of Health (DOH) on the above proposal. The DOH provides the following comment:</p> <p>1. Water Supply and Wastewater Disposal</p> <p>The DOH has no objection to the proposal in relation to the management of wastewater subject to the following:</p> <ul style="list-style-type: none"> • Ensure temporary onsite wastewater facilities and amenities are available for all proposed guests; • Ensure there are adequate amenities for the proposed number of patrons/guests. This should be based on the <i>Health (Treatment of Sewage and Disposal of Effluent and Liquid Wastes) Regulations, 1974</i>; • Ensure there is sufficient distances from sources that create nuisance. It is recommended the proposed site locations near the sewage ponds are not considered as part of this proposal; • There is a management plan in place to ensure all portable amenities, toilets, holding tanks or wastewater systems are sized and approved by Local Government or reviewed by Local Government prior to DOH approval; • If wastewater disposal is off site, approval is required for each proposal by the Shire of Exmouth and disposed of according to the Department of Water and Environmental Regulation's (DWER) requirements by licensed cartage service providers; • All cartage of sewage is disposed of to a licensed facility approved by DWER and most importantly, the facility must be able to accommodate the additional sewage loadings. The DOH has been advised the towns sewage treatment plant has struggled with increase loadings recently and may require upgrading. <p>2. Health (Miscellaneous Provisions) Act Requirements</p> <p>All public access areas (dining areas, games rooms etc.) are to comply with the provisions of the <i>Health (Miscellaneous Provisions) Act 1911</i>, related regulations and guidelines and</p>	<p>Noted.</p> <p>The Shire notes that these aspects will be dealt with through the relevant Development Approval and Environmental Health and other approval processes.</p> <p>Noted.</p>

Part VI – Public Buildings. All proposed camping sites are to comply with the provisions of the *Caravan Parks and Camping Grounds Act 1995*.

3. Medical Entomology

The subject land is in an area that occasionally experiences problems with nuisance and disease carrying mosquitoes. There is evidence from mosquito collections on surrounding land that vector mosquito species *Cx. annulirostris* and *Ae. vigilax* breed nearby, especially following heavy rainfall. These mosquitoes can disperse several kilometres from breeding sites and are known carriers of Ross River (RRV) and Barmah Forest (BFV) viruses. Several RRV cases occurred in May, June and July 2021 following substantial rain in the preceding months.

To protect the health and lifestyle of visitors and residents the mosquito risk and mosquito management should be considered and funded in the planning process. It is recommended the Environmental Health section of the Shire of Exmouth determines the likelihood and the extent of this risk and develops appropriate mosquito management plans.

Additionally, there is the potential for mosquitoes to breed in on-site infrastructure and constructed water bodies if they are poorly designed and maintained.

Recommendations:

It is the recommendation of the DOH that:

- The Shire of Exmouth determines the risk from mosquitoes and mosquito-borne disease and ensures funding of effective mosquito management for the proposal period.
- On-site infrastructure and constructed water bodies need to be designed and maintained to ensure they do not breed mosquitoes.

For further information on developing a mosquito management plan please visit: https://ww2.health.wa.gov.au/Articles/J_M/Mosquito-management

Noted, see comments above.

Noted, see comments above.

	Should you have any queries or require further information please contact Franziska Marian on 9222 2000 or eh.eSubmissions@health.wa.gov.au	
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Proposed final amendment scheme provisions – Amendment No.7

No	Description of Land	Additional Use	Conditions
A10	Areas as per scheme maps	As a 'D' use: <ul style="list-style-type: none"> • Holiday house • Holiday Accommodation • Camping ground • Caravan park • Car Park 	<ol style="list-style-type: none"> 1. The purpose of the additional use is to facilitate a 'major event within the Shire. 2. In considering an application for development approval, the local government may, consider the following matters in addition to those which it may have regard to under the Scheme: <ul style="list-style-type: none"> • Whether the use is connected to and will facilitate the major event within the Shire; • The need, considering the capacity in local housing and current tourism accommodation; • Occupancy limitations; • Provision of suitable setbacks and siting of development in the manner that considers surrounding land uses; • Measures to manage visual amenity impacts; • The impacts on the natural environment; • Site rehabilitation plans; • Transitioning plans; • Rubbish disposal; • Servicing including wastewater disposal, water, drainage and power; and • Toilet and other facilities. 3. The local government is to be satisfied that the proponent has identified appropriate strategies to manage issues by siting of land use in the context of surrounding existing and proposed land uses; and providing adequate screening measures such as fencing. 4. The additional use shall [effectively] start from 06 April 2023.

			<ol style="list-style-type: none">5. The additional use shall cease on after the 04 May 2023.6. Any development approval issued by the local government for the additional use shall be no later than 04 May 2023.7. Non-conforming use rights do not apply to the additional use.8. After 04 May 2023, all structures that had been used for the additional use shall be removed unless separate development approval is granted for uses consistent with the zoning.
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Shire of Exmouth

Local Planning Scheme No.4

Amendment No. 8

**Planning and Development Act 2005
RESOLUTION TO PREPARE AMENDMENT
TO LOCAL PLANNING SCHEME**

***Shire of Exmouth Local Planning
Scheme 4 Amendment No. 8***

Resolved that the Local Government pursuant to section 75 of the *Planning and Development Act 2005*, amend the above Local Planning Scheme by:

- (i) Rezone a portion of Lot 505 from Light Industry to Rural:
- (ii) Inserting Additional Use (A8) into Schedule 2 – Additional Uses as follows:

Number	Description of Land	Additional Use	Conditions
A8	Lot 505 on DP64832	As a 'D' Use: <ul style="list-style-type: none"> • Industry 	1. The purpose of the additional use is to facilitate 'power generation' within the Shire.

- (iii) Amend Scheme maps accordingly

The amendment is complex under the provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* for the following reason(s):

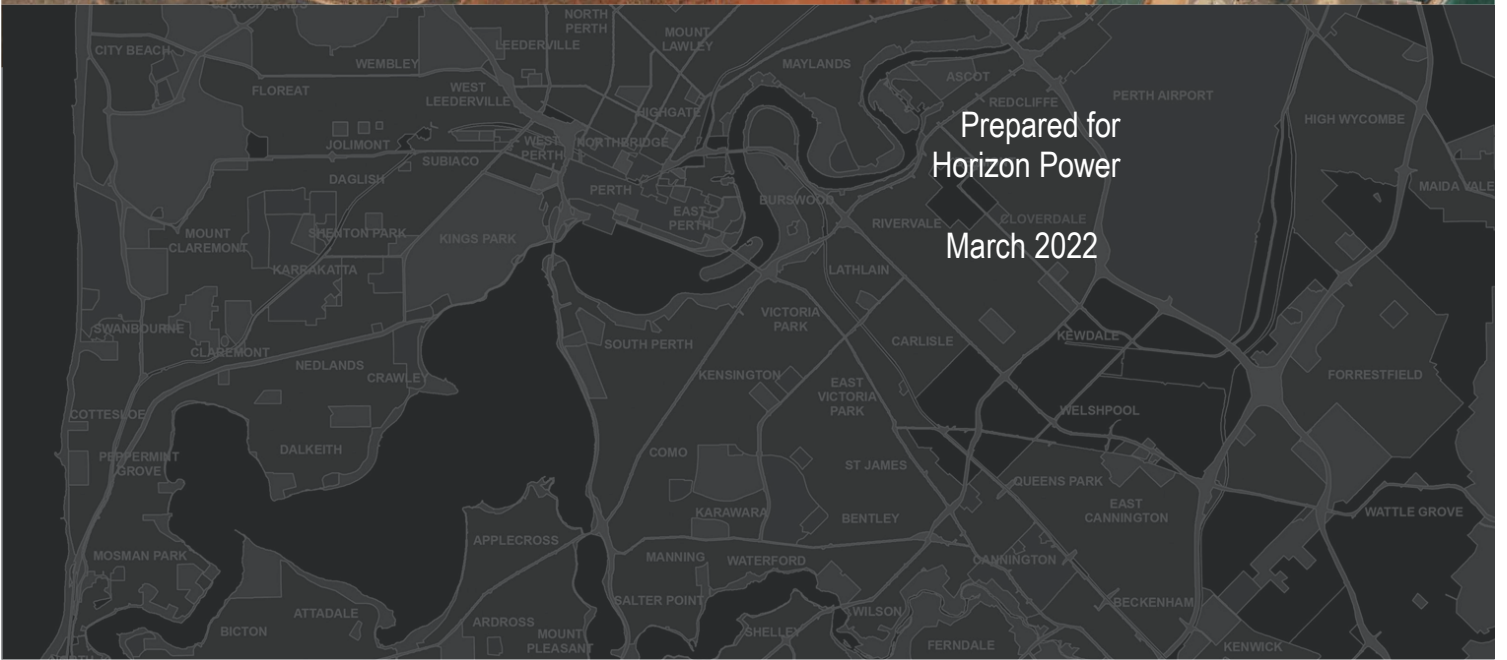
- (a) The amendment is not consistent with the Shire of Exmouth Local Planning Strategy.

Dated this _____ day of _____ 2022

(Chief Executive Officer)

Proposed Scheme Amendment Future Renewable and Thermal Power

Lot 505 on DP64832
Exmouth



Prepared for
Horizon Power
March 2022

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Appendix 1:	Certificate of Title
Appendix 2:	Concept Plan
Appendix 3:	Environmental Report

1 Preliminary

1.1 Introduction

Planning Solutions act on behalf of Horizon Power, a State Government trading enterprise and the proponent of the proposal for Lot 505 on DP64832 (CLR 3159/564) (**Lot 505**). This report has been prepared in support of a request to amend the Shire of Exmouth (**Shire**) Local Planning Scheme No. 4 (**LPS4**) to rezone the existing Light Industry portion of Lot 505 to Rural and apply an 'Additional Use' (Additional Use 11) on the western portion of Lot 505 subject site (to include Industry land use).

This report will discuss various matters pertaining to the proposal, including:

- Site details and context.
- The proposed amendment.
- Town planning considerations.
- Amendment classification.

The purpose of the scheme amendment is to allow for the future renewable and thermal power supply on Lot 505 to provide for Exmouth's future power needs. The proposed scheme amendment appropriately seeks to expand the range of land uses to ensure the future power supply can be considered under LPS4. The proposed scheme amendment will hereby be classified as Scheme Amendment 8 to LPS4.

This scheme amendment is the first stage of the new power resolution for the Shire of Exmouth. The second stage consists of the implementation and lodgement of a detailed development application for the new power solution. Finally, the final phase consists of the consolidation of the special control area once the new thermal power solutions is finalised. The offsite impacts of the thermal power supply will be reduced as a result of the new location or reduced capacity in the existing station. This reduced output of power and new technologies will result in a reduced offsite impact and will lead to a reduction in the special control area.

The future of Exmouth's power supply relies on this Scheme Amendment and subsequent development of the renewable energy facility and thermal power station. It is essential for the Shire to have this power supply (approved, constructed and running) by 2024 to ensure temporary power supply measures aren't needed to maintain Exmouth's power supply.

We respectfully seek the support of the Shire of Exmouth, the Western Australian Planning Commission (**WAPC**) and the Minister for Planning for the proposed amendment to LPS4.

1.2 Background

The town of Exmouth is currently supplied by a compressed natural gas power station with fuel trucked daily to the facility. The power supply is 96% thermal (gas) and 4% renewable energy generated by rooftop customer solar. Horizon Power procures the electricity generated from a third party under a power purchase contract which is current to 2024. This existing power station is located on a small freehold lot owned by Horizon Power and leased to the third-party supplier for the term of the contract.

Horizon Power has recently undertaken a study to assess the feasibility of transitioning to 100% renewables and an options analysis to deliver the future energy system solution beyond the existing contract end in 2024. The results of this analysis have demonstrated that a minimum 80% renewable energy solution is viable by 2024, with a transition to 100% achievable when key technology enablers are met. This incredible outcome will displace approximately 9,000 tons or 67% of existing carbon emissions per annum.

As part of its Integrated Resource Planning (**IRP**), Horizon Power is exploring opportunities that will shape Exmouth's future energy solution including available options for procuring a long-term electricity supply solution for Exmouth commencing in 2024. A feasibility study has shown that a power supply of 80 percent renewable energy (currently 4 per cent renewable generation) is achievable for less than the current cost to supply the town representing financial and environmental benefits for the State (Renewable Energy Target).

1.3 Stakeholder & Community Engagement

1.3.1 Engagement with the Shire of Exmouth

Engagement with the Shire commenced in 2020 to discuss the future power generation needs and land tenure requirements to support the power generation. This engagement included the necessary senior staff and Chief Executive Officer. In July 2021 the first engagement between the Shire's officer and Horizon Power regarding the land use permissibility and town planning scheme requirements.

On 7 September 2021, Horizon Power met with senior planning officers from the Shire. The officers were supportive of the Project. Whilst the current planning framework does not allow for the approval and implementation of the Project, the officers recommended pursuing a scheme amendment to LPS4 to enable the Project the ability to obtain approval at the desired location.

Representatives from Planning Solutions and Horizon Power met with the Shire again on 24 November 2021 to discuss the scheme amendment request and Horizon Power's future power generation requirements. The following considerations were discussed and confirmed to be required to be addressed in the scheme amendment request:

- Local context and the type/nature of uses in the immediate locality.
- Development concept/s be prepared to give an understanding of what the general built form and development would likely be.
- Scheme Amendment concepts to give a range of options that would suit the City's vision and give comfort to the City.
- A planning report providing an assessment against relevant town planning considerations.
- A preliminary discussion identifying consultant reporting and supportive documentation for the scheme amendment.

Additional written correspondence was received from the Shire's officers on 6 December 2021 and 13 December 2021 regarding the scheme amendment options and requested documentation required to be considered within the scheme amendment reporting. These considerations have formed the basis for this scheme amendment.

The proposal was also presented to the Shire's Strategic Briefing Session on 20 January 2022.

On 28 February 2022, Horizon Power met with senior planning officers from the Shire and the Shire's Chief Executive Officer. This engagement included discussions regarding the future of thermal power within this proposal and the Shire's concern with regard to the noise produced by thermal stations. It was clearly outlined the importance of the thermal power component in the overall power solution and that the details associated within that component will come throughout the scheme amendment development application process. Horizon Power has ensured that acoustic and amenity matters should not be a concern for the Shire as this will be addressed in the detailed design phase of development and that measures will be in place to ensure sound is not an issue.

1.3.2 Community Engagement

On 26 October 2021, Horizon Power held an engagement forum with the Exmouth community and published the Exmouth Integrated Resource Plan regarding the exploration of energy options that will shape their future energy system.

1.3.3 Engagement with the Department of Planning, Lands and Heritage

Representatives from Horizon Power and the Department of Lands met several times in early 2021 to discuss the land tenure requirements associated with the Project. Planning Solutions and Horizon Power attended a meeting with the Department of Planning, Lands and Heritage (DPLH) on 22 December 2021 to discuss the planning scheme amendment matters associated with the Project. The meeting provided Planning Solutions with the opportunity to brief the DPLH on the background of the amendment request, outcomes of the engagement with the Shire and the merits of the proposal.

The outcomes of both meetings have informed the refinement and finalisation of this scheme amendment request.

1.3.4 Land Assembly

Existing Land

The Exmouth Power Station is primarily compressed natural gas with no renewables and sits on a parcel of land of 2.5 hectares in size. The site is located in a light industrial area. This parcel of land is sufficient for the current generation but insufficient for a transition to higher renewables, except for additional batteries.



Figure 1: Existing Exmouth Power Station

Land Assessment Criteria

The initial desktop land assessment was taken in order to identify suitable land for a 100% renewable energy solution, which included approximately 50 ha for solar and 50 – 100 ha for wind suitability. These sizes were based on engineering modelling of planting suitable for the Exmouth generation requirements, with contingency for the significant number of potential site constraints known to land acquisition processes. In addition to size the assessment criteria must consider many elements, as is detailed below:

- Land layout and useable areas
- Engineering aspects including solar and wind yields
- Renewable energy infrastructure considerations. Eg. Distance required between panels/turbines.
- Wind/cyclone zone
- Proximity to load, existing power station and network connection
- Proximity to watercourses
- Native Title
- Aboriginal heritage sites
- Local planning scheme
- Current tenure
- Interest holders/stakeholders
- Indigenous Land Use Agreement requirement
- Mining tenements
- Site access
- Bushfire prone areas
- Environmental Protection and Biodiversity Conservation Act
 - Changes to existing drainage patterns, tidal areas, fish and marine habitat
 - Flora and fauna
 - Vegetation level
 - Clearing requirements
- Geotechnical assessment
 - Impact of flood
 - Stormwater management
 - Soil contamination
 - Ground conditions and suitability for infrastructure installation
- Proximity to airports and flight paths
- Required setbacks or clearances
- Noise restrictions
- Wind turbine size
- Reflectivity of panels and impact on surrounding operations
- Shadow Flicker impact on surrounding operations
- Community and tenure holder feedback and preferences
- Time estimates to acquire the land

As outlined above, the land assessment criteria are comprehensive and necessary to ensure the most appropriate sites are sourced through the land identification phase.

Assessment

A desktop assessment resulted in 23 sites being identified as set out below. Additional sites were scanned but were not included in the desktop assessment.

1. R51970 - Lot 1391 on DP217782
2. R51970 - Lot 1493 on DP 39344
3. Lot 869 on DP 180506 8
4. R33512 - Lot 108 on DP 181211
5. R51512 - Lot 560 on DP 68726
6. R34055 - Lot 550 on DP 72929
7. R48441 - Lot 284 on DP 29719
8. R41975 - Lot 197 on DP 190306
9. R50806 - Lot 500 on DP 64831 (and others)
10. R29066 - Lot 1456 on DP32358
11. R29066 – Lot 1455 on DP 32358
12. Lot 855 on DP 212325 (Lease N133096)
13. Lot 43 on DP 209471
14. Lot 78 on DP 211955
15. Lot 44 on DP209471
16. Polygon #700516
17. R40728 – Lot 157 on DP91706
18. Lot 505 on DP64822
19. Lot 281 on DP26960
20. Lot 79 on DP211955
21. R51130
22. Lot 50 on DP95508
23. R41753

Several of these sites were pursued beyond the desktop assessment but initial enquiries resulted in their exclusion from further assessment.

Shortlisting

All sites were analysed against the above land criteria and initial discussions with tenure holders, which resulted in the following four Lots being shortlisted for further review:

- 1) Lot 505 on DP64832
- 2) Lot 550 on DP72929
- 3) Lot 284 on DP29719
- 4) Reserve 51970

Through the shortlisting process, the following agencies and stakeholders were consulted to further finalise the preferred candidate:

- Department of Defence
- Community
- Shire of Exmouth
- Department of Planning, Land and Heritage
- Water Corporation
- Local land tenure groups
- Ministers
- NTAGC
- Consultants for flora and fauna surveys
- Engineers

Following this engagement, Reserve 51970 was excluded from further consideration in late 2021 when the Shire Officers advised the City did not support the use of this reserve except as a matter of last resort.

Lot 284 is leased by the Shire to the Exmouth Gun Club and was pursued for consideration. During discussions with their representatives, they indicated their support, in consideration of compensation in the form of a stand-alone power system or network connection. Upon requesting a further discussion, the gun club representatives have been unable to provide responses to Horizon Power to progress the assessment. This included load data and WA Police clearance. In late 2021 the project determined it could not continue to pursue the site without information.

The DOD did not support the installation of renewable energy on lot 44 or 284, based on the following:

- Defence has identified that Lot 284 can be utilised to expand capability from Lot 44 which is existing Defence Land in the future; and
- Potential wind farm impact on Space Surveillance Telescope (SST) and the very high powered Very Low Frequency (VLF) communications capabilities.

In addition to the above, as Exmouth is home to a Department of Defence (**DOD**) base, Horizon Power undertook discussions with their representative to ensure there were no barriers to the land selection, from a defence perspective. Their response indicated support for:

1. Lot 505 on DP64832
2. Lot 550 on DP72929

It was after this extensive land selection process that Lot 505 was chosen for the development of the renewable energy facility and thermal power.

2 Site details and context

2.1 Land description

Refer to **Table 1** below for a description of the subject site.

Table 1: Lot details

Lot	Diagram	Volume	Folio	Area (Hectares)
505	64832	3159	564	271.7586 ha

The subject site is unallocated Crown Land. The primary interest holder of lot 505 is the State of Western Australia with the responsible agency being DPLH. Lot 505 is not subject to any limitations, interests, encumbrances and/or notifications materially relevant to the proposed scheme amendment.

Refer **Appendix 1** for copies of the Certificate of Title and Deposited Plan.

2.2 Location

2.2.1 Regional context

The subject site is located in the municipality of the Shire of Exmouth, and the suburb of Exmouth. The subject site is located on the fringe of the Exmouth town centre and approximately 1100 kilometres north of Perth.

The subject site is situated on the west of Murat Road. Murat Road acts as a main arterial route for travel into, and out of, Exmouth town centre. Murat Road connects to Minilya-Exmouth Road which provides an important transport link between Exmouth and the North West Coastal Highway, which continues to Carnarvon.

2.2.2 Local context

Lot 505 is bound by vacant land to the north, Murat Road and Welch Street to the east, vacant land to the south and Lot 550 to the west. Lots 505 and 550 has a total site area of 3,412.8013 ha and is largely vacant. Whilst Lot 550 might appear completely vacant, it is occupied by underground infrastructure, largely a bore field for Exmouth drinking water.

The surrounding locality is generally characterised as comprising predominantly of urban development land use, along with industrial land uses and public open space. Such industrial land uses include a Repco Authorised Car Service Mechanic and Exmouth Power Station.

The following notable land uses and destinations are also identified as being in close proximity to the subject site:

- Exmouth Power Station, approximately 500m east of the subject site.
- Exmouth Mitre 10 & Light Industry Area, approximately 800m east of the subject site.
- RAC Holiday Park, approximately 1km northeast of the subject site.
- Ningaloo Aquarium and Discovery Centre, approximately 1km northeast of the subject site.
- Exmouth residential area, approximately 600m north of the subject site.
- Exmouth Commercial Town Centre and IGA, approximately 1.2km north of the subject site.
- Murdock Park Golf Course, approximately 1.8km northeast of the subject site.
- Exmouth Marina, approximately 2km southeast of the subject site.
- Exmouth Rural Residential Zone, approximately 2.2km southeast of the subject site.

Refer **Figure 2** – Aerial Site Context Plan

2.2.3 Site Details and Conditions

The subject site has an irregular polygon shape, with squared and straight northern, southern and western boundaries and an irregular eastern boundary. A review of historical imagery indicates the subject site has historically been vacant. Portions of the subject site are vegetated, with six vegetation types and five fauna habitats being recorded within the subject site, detailed in **Appendix 3**.

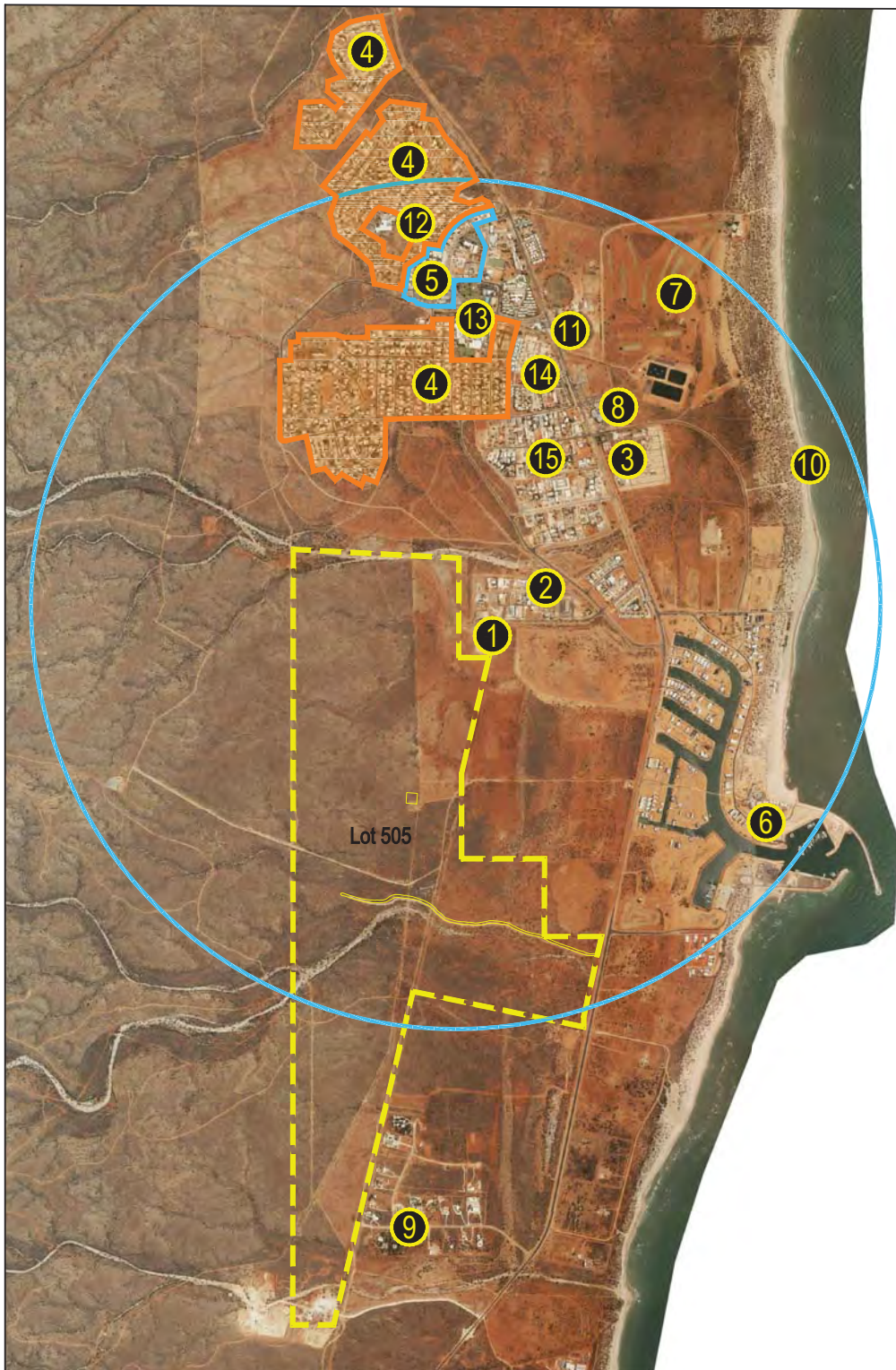
The subject site is undulating, east to west, with a high point of approximately 30m AHD near the western boundary of the subject site and a low point of approximately 10m AHD in the eastern portion of the subject site. The topography of the subject site is typical of that of the broader locality.

Low lying creek lines have comprised deep gullies in Lot 505. A large portion of the subject site is comprised of hills with rocky limestone and calcrete hills and slopes, with red-brown clay loam sand.

A drinking water pipe traverses down the centre of the subject site whilst a raw water pipe travels across the centre of the subject site.

Refer **Figure 2** – Aerial Site Context Plan.

SITE CONTEXT



LEGEND	
①	Exmouth Power Station
②	Exmouth Light Industry Area
③	RAC Holiday Park
④	Existing Residential Area
⑤	Exmouth Town Centre
⑥	Exmouth Marina
⑦	Exmouth Golf Course
⑧	Ningaloo Discovery Centre
⑨	Rural Residential Zone
⑩	Town Beach
⑪	Exmouth Recreation Centre
⑫	Exmouth District Hospital
⑬	Exmouth District High School
⑭	Ningaloo Caravan & Holiday Resort
⑮	Exmouth Service Commercial Area
	2km Radius
	Subject Site (Lot 505)

3 Proposed scheme amendment

3.1 Power generation requirements

The town of Exmouth is currently supplied by a compressed natural gas power station with fuel trucked daily to the facility. The power supply is 96% thermal (gas) and 4% renewable energy generated by rooftop customer solar. Horizon Power procures the electricity generated from a third party under a power purchase contract which is current to 2024. This existing power station is located on a small freehold lot owned by Horizon Power and leased to the third-party supplier for the term of the contract.

Horizon Power has recently undertaken a study to assess the feasibility of transitioning to 100% renewables and an options analysis to deliver the future energy system solution beyond the existing contract end in 2024. The results of this analysis have demonstrated that a **minimum 80% renewable energy solution is viable by 2024, with a transition to 100% achievable** when key technology enablers are met. This incredible outcome will displace approximately 9,000 tons or 67% of existing carbon emissions per annum.

As part of its Integrated Resource Planning (IRP), Horizon Power is exploring opportunities that will shape Exmouth's future energy solution including available options for procuring a long-term electricity supply solution for Exmouth commencing in 2024. A feasibility study has shown that a power supply of 80 percent renewable energy (currently 4 per cent renewable generation) is achievable for less than the current cost to supply the town representing financial and environmental benefits for the State (Renewable Energy Target).

3.1.1 Exmouth Future Energy System

The proposed Exmouth Future Energy System at this stage of the Project comprises different development outcomes with a potential mix of renewable and thermal power options. In the process of this project, substantial modelling of generation options occurred and was subsequently tested with a market expression of interest. These investigations have confirmed that large scale solar and batteries will be in the solution. They have also found that wind energy as a complementary source of generation is likely to make sense.

The 80% renewable energy solution means the power system will use approximately 58% centralised renewable sources such as a solar farm, wind farm and battery storage together with 22% distributed energy resources (customer rooftop solar) to generate electricity. The remaining 20% will be produced by thermal (likely gas or diesel) to ensure a safe and reliable energy supply, particularly during periods of intermittent renewable energy or contingency events. In time, technology is anticipated to displace that thermal generation with greener firm generation sources.

3.1.2 Generation Mix and Land

An increase in renewable energy generation to 80% requires the introduction of solar, additional batteries and potentially wind generation to the power system. Operationally, it is likely that the system will run primarily either:

- Scenario 1: solar during the day converting to battery stores in the evening, with thermal providing any remaining balance of energy as and when required.
- Scenario 2: solar during the day, wind predominantly in the evening and battery stores, with thermal to provide any remaining balance of energy as and when required.

In both Scenario 1 and 2, there will be significant periods throughout the year when all of Exmouth's energy will be supplied only by renewable energy sources.

Table 2 – Potential Generation Scenarios

Scenario	Thermal	Solar	Wind	Battery
Scenario 1	6MW gas or diesel	Large solar array (~12 MW)	-	Large battery
Scenario 2	6MW gas or diesel	Medium solar array (~5MW)	12 small wind turbines (~4MW)	Medium battery

Note: These generation scenarios are for illustrative purposes associated with land acquisition pathways only and must not be relied on by any parties responding to Horizon Power market approaches.

3.1.3 Thermal (Gas or diesel)

Whether new thermal generation planting is required, or the existing gas plant is in the future energy system will be determined in 2022 through commercial processes. It is Horizon Power’s preference to utilise the existing assets in the solution but it must plan for the possibility of a new build of thermals in time for the end of the existing contract.

Some thermal power is required to provide the town with safe and reliable energy. This means that either the existing gas plant or a new thermal build is required for the foreseeable future. If it is the existing facility were to remain, the thermal station would be run at a reduced capacity with renewable power to supplement the remaining power component. If a new thermal station is built, it would run at a reduced capacity of the existing facility and the existing thermal station would be decommissioned. Ultimately, this would then reduce the impact of the infrastructure on the locality and its surroundings.

Horizon Power’s commercial processes have and continue to explore options which would see the existing gas infrastructure used to end of life and if not viable, the build of new thermal assets.

3.1.4 Site Layout

Taking into consideration the above, the attached concept layout provides an indicative drawing of the layout for the Project. While the final layout is subject to detailed design processes, this plan provides an indicative design to demonstrate the general location and potential design for the thermal power and solar power proposed on the subject site.

Refer to **Appendix 2** for a copy of the Concept Plan.

3.2 Proposal

The current planning framework does not allow for the expansion of power generation outlined within section 3.1 of this report as it applies to Lot 505. Lot 505 is proposed to be used for solar, battery and may include new thermal assets if the existing gas power station is not in the overall power solution. The solar array incorporates the largest portion of land and the size will be influenced by whether wind is in the final solution. The solar array will more than double where wind is not in the final generation mix.

Horizon Power is assessing 77 hectares of land in Lot 505 to allow for a contingency such as geological constraints and maximum technical outputs. Site installation will be approximately 15 – 30 hectares depending on the size of the solar array. Whilst a solar and battery energy facility and wind farm would best be classified as a Renewable Energy Facility under Local Planning Scheme No. 4 (**LPS4**), a thermal energy facility would best be classified as Industry under LPS4.

Under the Shire of Exmouth LPS4 Lot 505 is located within the Rural, Urban Development and Light Industry zone. A Renewable Energy Facility and Industry land use are not capable of approval on the intended locations on Lot 505 within the current planning framework.

Accordingly, we respectfully seek to amend LPS4 in the following manner:

- (i) Rezone a portion of Lot 505 from Light Industry to Rural:
- (ii) Inserting Additional Use (A8) into Schedule 2 – Additional Uses as follows:

Number	Description of Land	Additional Use	Conditions
A8	Lot 505 on DP64832	As a 'D' Use: <ul style="list-style-type: none"> • Industry 	2. The purpose of the additional use is to facilitate 'power generation' within the Shire.

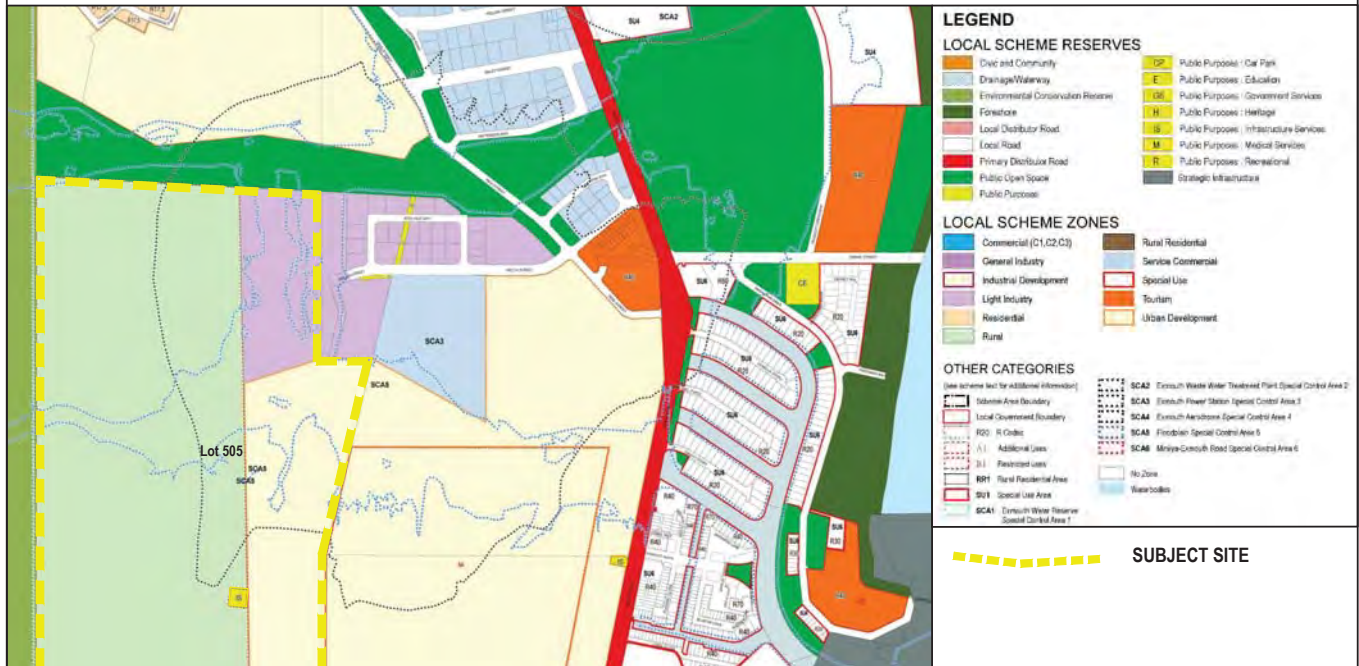
- (iii) Amend Scheme maps accordingly

Refer to **Figure 3 – Zoning map** for the current and proposed zoning of the subject site.

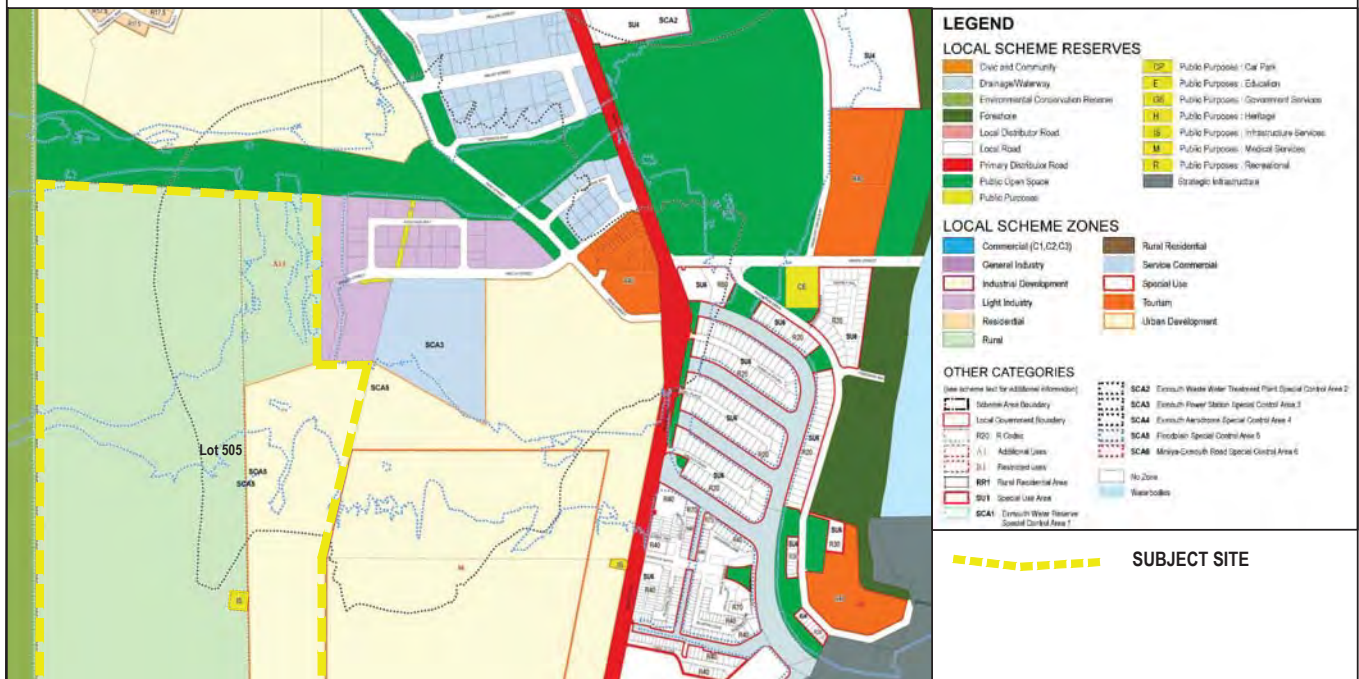
The proposed scheme amendment 8 to LPS4 allows the Renewable Energy Facility to be considered as a Discretionary use within the Rural zone. The Additional Use of Industry will ensure the thermal energy facility (Industrial use) is capable of approval within this portion of the Lot. Such matters were recently discussed with Shire of Exmouth planning staff, with a view to confirming the preferred scope of a potential amendment to LPS4. After exploring several scheme amendment options with the Shire, this strategy was the preferred option for the Shire.

If ultimately approved, such modifications to LPS4 would facilitate the lodgement of a development application for the solar, battery and possibly thermal energy facilities on the subject site.

AMENDMENT TO SHIRE OF EXMOUTH LOCAL PLANNING SCHEME NO.4



EXISTING SCHEME MAP



PROPOSED SCHEME MAP

4 Expert assessments

4.1 Environmental Reporting

360 Environmental Pty Ltd (360 Environmental) has undertaken a biological survey for the proposed construction of renewable power infrastructure in Exmouth, Western Australia. The reconnaissance flora and vegetation survey, and basic vertebrate fauna survey was undertaken in accordance with relevant Environmental Protection Authority (EPA) Guidance and were considered appropriate to inform environmental impact assessment (EIA) and approval applications.

The survey identified four Department of Biodiversity, Conservation and Attractions (DBCA) listed Priority flora taxa on Lot 505 which included:

- Two Priority 2 taxa: *Tephrosia sp. North West Cape* and *Tinospora esiangkara*
- Two Priority 3 taxa: *Corchorus congener* and *Eremophila forrestii* subsp. *Capensis*
- No Priority 1 or 4 taxa

The presence of Priority flora is not a statutory constraint for the subject site or the proposed future development. There is no written policy on how to respond to the presence of Priority flora species within the proposed development site. The presence of Priority flora is dealt with by relevant State departments and agencies on a case-by-case basis. Consultation with DBCA is recommended prior to any disturbance to Priority flora species. Furthermore, it is recommended that disturbance to Priority flora species is avoided where possible.

It has been recommended that clearing should avoid mature trees, where possible, for example in the creation of access tracks, or where clearing boundaries are negotiable.

No fauna species of conservation significance (Threatened or Priority), or evidence of these species such as tracks, scats, nest, diggings, burrows, or direct sightings were recorded within or directly surrounding the Survey Area.

Following the survey, three fauna taxa of conservation significance were considered to have a high likelihood of occurrence, and five taxa were considered to have a medium likelihood of occurrence. The Drainage line/Creek, Hills (Open Woodland over Tussock Grassland) and Hills (Shrubland over Hummock Grassland) habitats are of high value to a number of conservation significant fauna. It is recommended that disturbance to Priority fauna species is avoided where possible.

Records of the Threatened Black Flanked Rock-Wallaby were identified by the desktop assessment in the vicinity of the Survey Area. Scats were recorded in similar habitats within the Survey Area, and identification is pending. At this stage, the scats are not believed to be from the Rock Wallaby but from larger macropods such as kangaroos, which were recorded during the survey.

The survey and a letter of recommendation, produced by 360 Environmental, which surveyed Lot 505 and beyond, has been provided in **Appendix 3**.

5 Strategic planning framework

5.1 State Planning Strategy 2050

The State Planning Strategy 2050 focuses on a vision of sustained growth and prosperity which envisages a future where Western Australians enjoy high standards of living, improved public health and excellent quality of life for present and future generations. This sustained growth and prosperity are summarised by four reference points; diversity, liveability, connectedness and collaboration.

The Strategy aims for Western Australia to have a diverse range of interconnected and vibrant local communities and regional centres with the people in these communities being healthy, resilient, active, prosperous, respectful of cultural differences and participate in the public domain. The Strategy aims to ensure standards of living will continue to be among the highest in the world and improve connections and smarter technologies to enhance the State's ability to attract global and domestic investment capital where and when it is most needed.

For the purposes of the Strategy, Western Australia is considered in the context of three sectors each consisting of two or more designated planning regions, including the Northern sector, Central sector and South-West sector. Exmouth is located within the Central Sector and has been identified to have a diverse economy underpinned by mining, agriculture, fisheries and tourism, contributing significantly to the Western Australian economy. The sector is set to further contribute to the nation's mining, scientific, technological, research and innovation industries by 2050.

Based on research and collaboration across the State, a set of interrelated and interdependent strategic issues of key importance to Western Australia's sustained growth and prosperity have been identified within the Strategy. Physical Infrastructure, and specifically Energy, has been identified as one of the strategic issues within the Strategy.

Section 2.3 of the Strategy details the specific energy considerations. The objective for energy is:

to enable secure, reliable, competitive and clean energy that meets the State's growing demand.

Traditionally the State's energy supply has been dominated by fossil fuels. Increasing population and economic growth are resulting in greater demand for energy, as well as the need to upgrade and provide new infrastructure.

Demand for energy is expected to continue to grow due to ongoing industrial development, especially in the mining and mineral processing sectors. Effective and flexible planning, policy and regulatory frameworks provide an enabling environment for investment and the uptake of new technologies. With global and domestic pressures likely to cause further increases in the cost of fossil fuels, it is in Western Australia's long-term interest to develop a diverse energy supply mix, including the use of renewable fuel sources. Renewable energy initiatives help to mitigate the risks from climate change, lessen fossil fuel use and reduce greenhouse gas emissions.

The State Planning Strategy 2050 aspires to ensure various forms of renewable energy continue to be developed and integrated throughout Western Australia to ensure cleaner and renewable energy usage. This scheme amendment will allow for future renewable energy development on the subject site, which directly responds to the State Planning Strategy vision and aspirations.

5.2 Gascoyne Coast Sub-Regional Strategy

The Gascoyne Coast Sub-regional Strategy has been prepared for the Gascoyne Coast sub-region, which includes the Shire of Exmouth and coastal portions of the shires of Carnarvon and Shark Bay. Within the strategy, the subject site has been identified as unallocated crown land. The purpose of the strategy is to:

- *provide the sub-regional context for land-use planning in the Gascoyne Coast;*
- *consider a range of population growth scenarios, and within this context analyse the capacities of settlements to accommodate growth;*
- *identify strategic directions to guide local planning processes; and*
- *provide guidance for the preparation of and amendments to local planning strategies and schemes.*

The Gascoyne Coast Sub-regional Strategy has been prepared as part of an ongoing process of refining and detailing the planning direction for the Gascoyne Coast sub-region. This refinement will continue to be undertaken, as the guidance provided within this strategy will inform the reviews of local planning schemes and strategies, structure planning, subdivision and/or development. This strategy provides a high-level strategic context to guide future development and address key challenges for the sub-region. Refer to **Figure 4** for the Exmouth Context Map.

The implementation of the Strategy involves the coordination of a number of activities at the State and local level, as well as the preparation of a number of key documents. One of the key documents identified within the Strategy was the Ningaloo Coast Regional Strategy Carnarvon to Exmouth. The Gascoyne Coast Sub-regional Strategy has identified this strategy as one of the key planning documents to consider.

Section 3 of the Gascoyne Coast Sub-regional Strategy outlines the infrastructure considerations applicable to the region. Specifically, it states:

Infrastructure is essential in supporting all economic sectors of the Gascoyne Coast sub-region, in addition to its general population. From an economic perspective, inter-regional links are vital to ensure strong connectivity between the area and other markets; and to allow for the efficient movement of goods and people into and out of the sub-region. The sub-regions strategic regional and inter-regional connections have been considered in the Western Australian Regional Freight Transport Network Plan (Department of Transport, 2013).

Coordinated infrastructure corridors, which can potentially accommodate multiple types of transport and utility services infrastructure, are considered to be an efficient means of delivering the land requirements for future regional and inter-regional infrastructure, particularly in areas where land is highly constrained. As such, infrastructure corridors should ideally be identified, planned for and secured well in advance of the additional regional infrastructure being required.

Consistent, secure and future-proofing of the energy supply is important to support the economy and the prosperity within Exmouth. The proposed scheme amendment 8 seeks to secure this future power generation for Exmouth to enable the planning framework to consider renewable and thermal power generation on the subject site. Furthermore, section 3.1.1 of the Gascoyne Coast Sub-regional Strategy states the following in relation to energy considerations applicable to Exmouth:

The Exmouth Gas Fired Power Station has a capacity of 5.9MW and consists of eight gas engines and one diesel engine. Compressed natural gas for the facility is transported by road to Exmouth from the Dampier- Bunbury natural gas pipeline. A small wind farm also supplements the base-load generation of the power station. A number of 11kV distribution feeders distribute power to the town of Exmouth and surrounding areas. Exmouth is expected to experience ongoing growth in demand for electricity, and in this regard options for increasing generation capacity will be considered by Horizon Power.

The purpose of this scheme amendment is to ensure the planning framework can consider the development application for the future renewable energy facility and thermal power station. The ongoing growth of Exmouth in conjunction with commercial consideration and renewable power generation has meant the upgrade to the existing power generation is required.

This scheme amendment will allow for future renewable energy development on the subject site and will ensure Exmouth can continue to grow and meet its energy needs, which directly responds to the Gascoyne Coast Sub-regional Strategy.

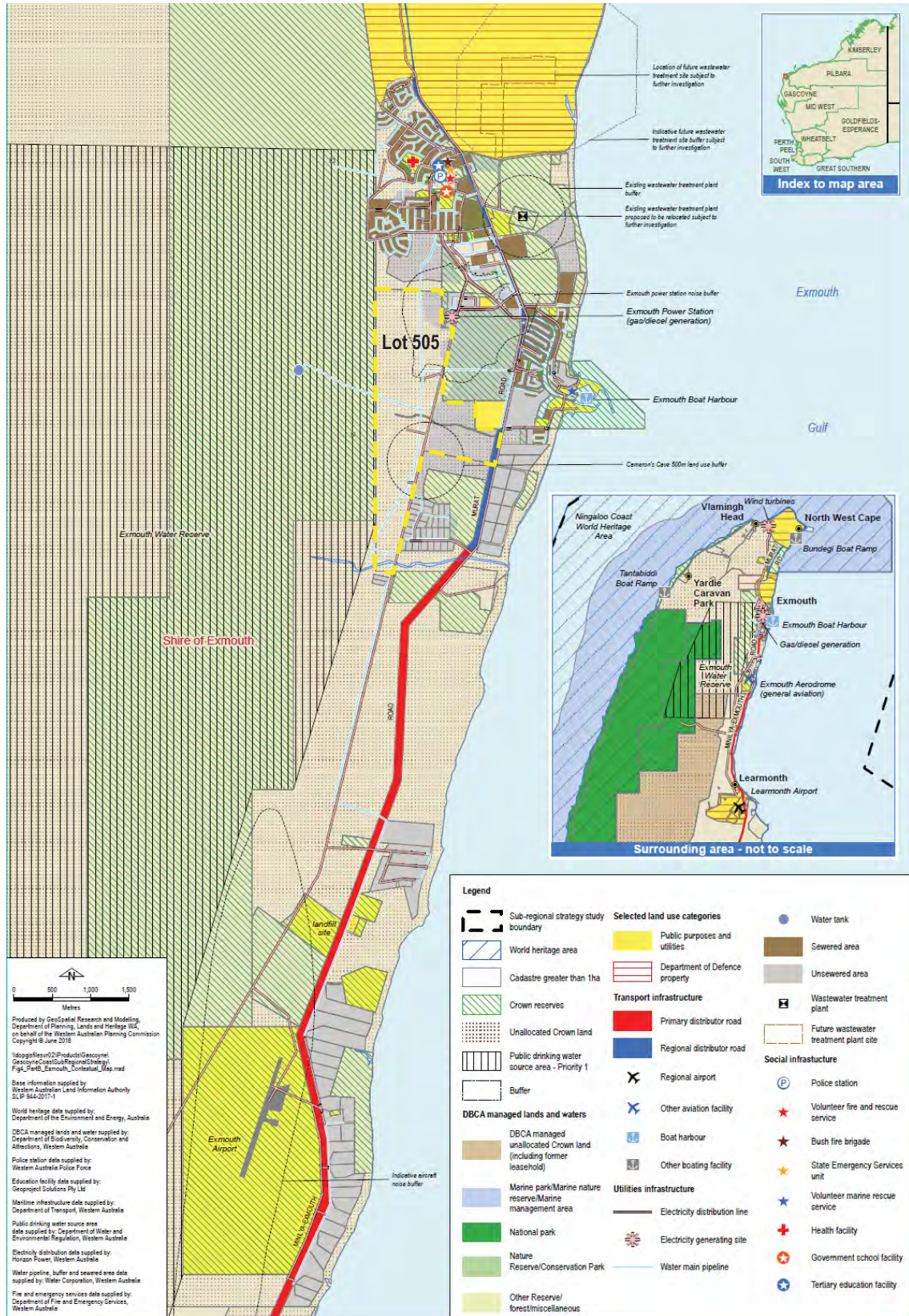


Figure 4: Gascoyne Coast Sub-regional Strategy Exmouth Context Map (Yellow boundary around subject site)

5.3 Ningaloo Coast Regional Strategy Carnarvon to Exmouth

The Ningaloo Coast Regional Strategy Carnarvon to Exmouth and the Ningaloo Coast Statement of Planning Policy 6.3 provide a 30-year strategic land use plan that sets the framework of planning for sustainable tourism and land use on the Ningaloo Coast. The Ningaloo Coast Statement of Planning Policy 6.3 provides a legal framework for the key elements of the strategy.

The Strategy uses three visions that reflect the environmental and cultural significance of the Ningaloo coast and the desire to see the coast managed sustainably.

- The State planning strategy's vision for the Gascoyne Region
- The Ningaloo coast community stakeholder advisory group community vision
- The Ningaloo coast regional strategy vision carried forward from the Gascoyne Coast Regional strategy

The priorities and principles of these visions are reflected in the strategy.

The Strategy details planning and environmental guidelines for sustainable tourism on the Ningaloo coast. These guidelines primarily are intended to ensure all future semi-permanent and permanent tourism accommodation developments or expansion of existing developments on the Ningaloo coast, from the Exmouth Gulf to Carnarvon townsite, outside of the regional centres of Exmouth and Carnarvon, are low-impact, sustainable tourism developments.

One of these guidelines describes energy supply and building energy efficiency. Proposed tourism developments may require energy for water heating, air-conditioning, refrigeration, lighting, general electrical appliances, vehicles and water pumps. The Office of Energy has provided information that suggests that viable alternative energy sources are available (eg passive solar, solar, wind, gas, geo-thermal).

This guideline proceeds to state that proposed tourism developments should employ alternative/ renewable energy sources where possible, fuel or gas-powered generators should be used only as a backup to alternative energy sources or in emergency situations and all new development should maximise energy efficiency through climate-sensitive, passive solar and energy-efficient design.

The proposed scheme amendment 8 will enable the desired future power generation to be met in accordance with Strategy.

5.4 Shire of Exmouth Local Planning Strategy 2015 – 2025

The Shire of Exmouth Local Planning Strategy sets out the vision and long-term planning directions for the Shire over the next decade and beyond. Notably, the vision established by the Strategic Community Plan 2030 and expressed within the Local Planning Strategy is “*to be a prosperous and sustainable community living in harmony with our natural environment*”.

The Local Planning Strategy establishes four strategic objectives to support this vision, all of which are relevant to this subject site and proposed scheme amendment and addressed in turn below.

- **Economic: Diversify and grow our economy in a manner that provides year-round employment opportunities** – The proposed scheme amendment will aid in Horizon Power’s aim to explore opportunities that will shape Exmouth’s future energy solution. The building and maintenance of this solution may provide employment opportunities for the Shire of Exmouth community for the foreseeable future.
- **Environment: To protect and value our unique natural and built environment as we grow our economy** – The proposed scheme amendment has had a large consideration for the existing natural and built environment. The scheme amendment and subsequent renewable energy hub will have minimal impact on the existing environment on the subject site.

Horizon Power has recently undertaken a study to assess the feasibility of transitioning to 100% renewable energy and an options analysis to deliver the future energy system solution beyond the existing contract end in 2024. The results of this analysis have demonstrated that a **minimum 80% renewable energy solution is viable by 2024, with a transition to 100% achievable** when key technology enablers are met. This future renewable power development will have a lasting positive impact on the environment including displacing 9,000 tons of carbon emissions per annum.

Whilst Horizon Power strives towards a fully renewable energy solution for the Shire, it is necessary to have a thermal power station to secure the power supply.

- **Social: To be a vibrant, passionate and safe community valuing our natural environment and unique heritage** – Whilst the proposed scheme amendment does not impact the heritage of the area, the proposal seeks to ensure future power generation for the Shire of Exmouth, ensuring future power demands are met and provided in a sustainable and an environmental manner.
- **Leadership: To provide open transparent, accountable leadership working in collaboration with our Community** – This scheme amendment has taken a collaborative approach from the beginning of the scheme amendment process and will continue throughout the remainder of the process. The proposed scheme amendment and subsequent future development on the subject site will feed off input from all stakeholders to ensure the best result for the Shire and its residents.

The local planning strategy identifies four different zones within the subject site. The north-easter corner has been assigned as Industry – Light and a small portion of public open space, whilst the remainder of the northern portion of the site has been assigned as residential. The southern portions of the site have been designated as Conservation and Landscape Protection and Rural Residential. Refer to **Figure 5** for the Exmouth Townsite Local Planning Strategy Spatial Map. Scheme Amendment 8 proposes to rezone a small portion of Lot 505 as well as place an additional use on this portion of the lot.

The local planning strategy later details the local profile of the Shire of Exmouth locality and specifically details the power supply for the Shire. The strategy discusses the existing Exmouth Power Station, its history and its noise footprint.

Exmouth Power Station currently has approval for the operation of 8 engines. The latest noise assessment, conducted in 2012, was undertaken by Lloyd George Acoustics, following noise attenuation measures being implemented by the Exmouth Power Station Pty Ltd (**ExPS**) to achieve a reduction in noise levels as far as practical (installation of 8 exhaust mufflers). This assessment identified a reduction in the noise footprint in comparison to

previous assessments and provided an updated compliance contour for the existing operating conditions of the power station (Day time – 8 engines; Night time – 4 engines) with a peak load of just below 6,500kW occurring for short durations in the late afternoon. The 2012 noise assessment also mapped a compliance contour assuming a full operating capacity of 13,000kW (Day time – 15 engines; Night time – 6 engines). Horizon Power, however, has since provided advice to the Shire that based on current power generation forecasts, the power station is unlikely to operate at a load of 13,000kW before the expiry of the power station agreement, with a full capacity operating load of 10,000kW being a more accurate figure upon which to define a land-use buffer.

To date, a noise assessment has not been undertaken to reflect the impact of the power station operating at 10,000kW. Adopting *SPP 4.1* as guidance, in the absence of modelling and technical analysis to identify the impact of the power station operating at full capacity, the ability of the Local Planning Strategy to accurately map a land-use buffer representative of an accurate worst case scenario is limited. In the interim, proposals will be individually assessed, and the LPS will identify a land use buffer based on the existing operating conditions permitted by the existing approval i.e. 8 engines.

When we take into consideration the above information, it is proposed to provide a new thermal power station with a maximum output of 6,000KW. This is below the current 13,000KW capacity and buffer set up for that purpose.

In summary, the proposed amendment will support the delivery of the Local Planning Strategy vision and objectives, by facilitating a renewable power solution for the town. Additionally, the development of the renewable energy hub will reduce the peak load of the existing power station and therefore reduce the noise of the power station, addressing the Shire's concern with regard to the noise footprint.

5.4.1 Residential Strategy

The Local Planning Strategy has identified the subject site to facilitate future residential development. The Strategy discusses the residential strategy and actions to aid in increasing residential growth for the Shire and provides an objective to:

reinforce Exmouth Townsite as the only settlement area within the Shire, and ensure the delivery of sustainable and well planned residential living areas having regard to the efficient provision of infrastructure and services.

The proposed scheme amendment will be the first stage in ultimately reducing the impact the current Exmouth Power Station has on the surrounding 'future residential' areas whilst catering for future power needs. As mentioned, the transition of 80% of the power to renewable power generation will mean the new thermal station will have a maximum output of 6,000KW whilst the current power station has a 13,000KW capacity.

The proposed future thermal power generation and renewable energy facility remains at a concept plan stage. The consideration of future amenity to the surrounding existing and future residential areas will be considered at the development application stage.

5.4.2 Industrial Strategy

The Local Planning Strategy has identified the subject site to facilitate future light industry. The Strategy discusses the industrial strategy and actions for the Shire and provides an objective to:

Provide an adequate supply of appropriately located service, light, general and marine based industrial land encouraging diversification of industrial activity to strengthen employment opportunities and broaden the economic base of the Shire.

The industrial strategy also addresses the need to relocate the existing Exmouth Power Station to remove any impediment to future residential and industry use approvals within the noise buffer area. The proposed scheme amendment will allow the future of Exmouth's power supply to be moved from the current power station to the northern portion of Lot 505. Additionally, the reduced output of thermal power will have a reduced impact on the surrounding industrial and residential properties and therefore have a reduced impact and reduce any impediment on the surrounding land. The subject site is Crown Land and is not intended to be used for industrial purposes. Therefore, the rezoning of the site does not impact the future supply of industrial land.

5.4.3 Land Use Buffer Strategy

The Local Planning Strategy has identified the existing Exmouth Power Station and associated Special Control Area 3. The Strategy discusses the land use buffer strategy and actions for the Shire and provides an objective to:

protect key infrastructure and areas of conservation value within the Exmouth Region from land use conflict and sensitive land uses through the identification of land use buffers.

The strategy proceeds to discuss the progressive removal of the Special Control Area/buffer through the relocation of the power station. As discussed previously, the proposed scheme amendment will allow for the development of a renewable energy facility and a new thermal station / reduced output in the existing station, to allow for the transition to allow power production to be fully renewable. This will have a reduced impact on the surrounding sensitive land uses and therefore have a reduced impact on reducing any impediment on the surrounding land. The implementation of this scheme amendment and development of the new power solution will allow for further investigation into the land use buffer to ensure it is of a size to protect the key infrastructure whilst unlocking key areas within the town for development.

5.4.4 Caretaker's Dwellings

It is acknowledged that there are a number of established caretaker dwellings in the Koolinda Way Light Industrial Area, located on the following properties:

- 37 Koolinda Way
- 33 Koolinda Way
- 29 Koolinda Way
- 23 Koolinda Way
- 17 Koolinda Way
- 13 Koolinda Way
- 3 Koolinda Way
- 1 Koolinda Way
- 6 Koolinda Way
- 8 Koolinda Way
- 12 Koolinda Way
- 39 Welch Street

As previously discussed, the proposed scheme amendment will subsequently see the impacts of the thermal station be reduced. Either by a new smaller facility being built or the current thermal station reducing its output, the impact on the caretaker's dwellings and surrounding land will be minimised. Furthermore, should the new thermal station be built, not only will it have a reduced output but it will also be located 150m further away from these listed caretaker's dwellings, therefore, having a reduced impact on the caretaker's dwellings.

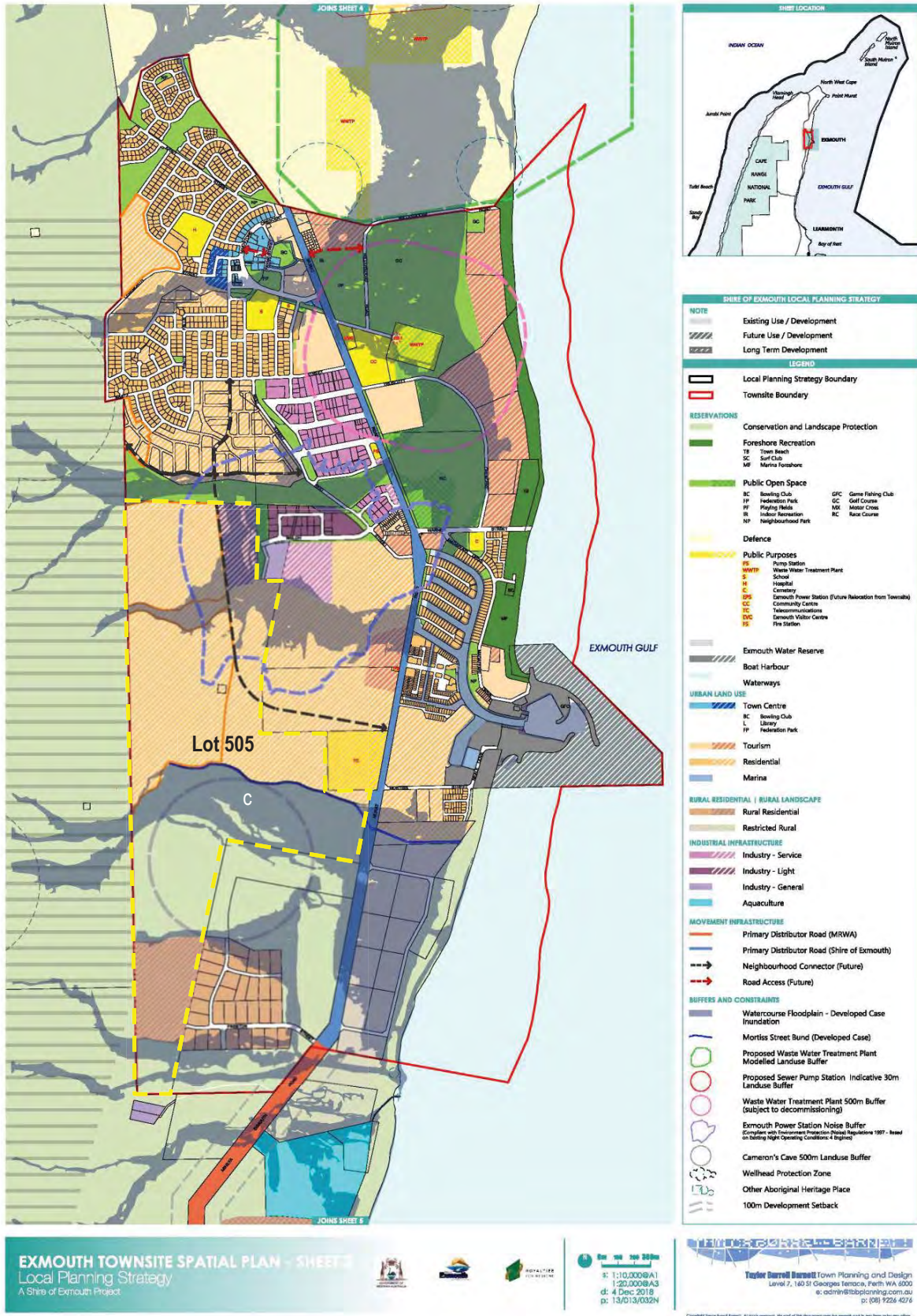


Figure 5 – Exmouth Townsite Local Planning Strategy Spatial Map

6 Statutory planning framework

6.1 Planning and Development Act 2005

This Scheme Amendment Report has been prepared on behalf of the landowner, in accordance with section 75 of the *Planning and Development Act 2005*.

The proposal seeks to amend the Shire of Exmouth Local Planning Scheme No. 4 (LPS4) by applying a site-specific 'Rural' zoning and addition use of 'Industry' to:

- Lot 505 on Diagram 64832, Volume 3159 Folio 564

The amendment is classified as a 'standard amendment' in accordance with the provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* (as outlined in further detail in Section 7 of this report).

6.2 State Planning Policies

6.2.1 State Planning Policy 2.5 – Rural Planning

The purpose of State Planning Policy 2.5 – Rural Planning (**SPP2.5**) is to protect and preserve Western Australia's rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values. Ensuring broad compatibility between land uses is essential to delivering this outcome.

The policy recognises that the protection of rural land from conflicting land uses is important and requires adequate planning and policy implementation. The policy provides measures to apply to decision making for rural proposals. The proposed scheme amendment seeks to increase the provision of rural zoned land on Lot 505 to enable the development of renewable energy infrastructure on the subject site.

Accordingly, it is considered that the proposed scheme amendment is consistent with the objectives and intent of SPP2.5 and warrants approval accordingly.

6.2.2 State Planning Policy 2.7 – Public Drinking Water

The purpose of State Planning Policy 2.7 – Public Drinking Water (**SPP2.7**) is to ensure that land use and development within Public Drinking Water Source Areas (PDWSAs) is compatible with the protection and long-term management of water resources for public water supply. SPP2.7 applies to proclaimed PDWSAs throughout Western Australia.

Implementation of SPP2.7 is through the preparation of strategic plans, regional and local statutory schemes, conservation and management strategies, and other relevant plans or guidelines, as well as through the day to day process of decision-making on subdivision and development applications, and the actions of other State agencies in carrying out their responsibilities. Local governments and State agencies should take account of SPP2.7 to ensure integrated decision-making.

The Water and Rivers Commission (WRC) has identified the following priority classification for PDWSAs:

- Priority 1: source protection areas are defined and managed to ensure there is no degradation of the water resource in these areas.
- Priority 2: source protection areas are defined to ensure that there is no increased risk of pollution to the water source.
- Priority 3: source protection areas are defined to manage the risk of pollution of the water source.

In addition to priority classifications, the WRC has identified well-head protection zones and reservoir protection zones to protect the drinking water source from direct contamination in the immediate vicinity of production wells and reservoirs. Land use and activities within these areas need to be managed to prevent, restrict or control uses or activities such that contamination of the water resource is prevented at its abstraction point.

Whilst the subject site is not within any PDWSAs, the adjacent lot, Lot 550 is a Priority 1 Protection Area and has the Wellhead Protection Zone (WHPZ) within.

The subject site is a Reserve for the purpose of 'Water Supply' under Management Order to the Water Corporation. Initial engagement with the Water Corporation indicated no objection to the request and they were supportive of Horizon Power initiating the process with DPLH to develop a renewable energy hub on Lot 505.

Horizon Power's engagement with Water Corporation discussed the use of Lot 550 for the installation of wind turbines in the potential solution. Several in-person meetings and written exchanges have occurred to provide all requested information to the Water Corporation and the Department of Water and Environmental Regulation. These exchanges resulted in:

- Water Corporation and Department of Water & Environmental Regulation's (**DWER**) support for the land use provided that existing borefield infrastructure and exclusion zones are understood, together with addressing operational questions;
- Confirmation that renewable energy infrastructure is a compatible use in accordance with Water Quality Protection Note:#25 Land use compatibility
- Identification of 17 hectares of land to the west of lot 550 suitable for wind generation;
- Identification of the borefield and 500m exclusion zone across the middle portion of lot 550;
- Verification that cables can be passed through the exclusion zone around the borefields;
- Exclusion of the east portion of land for wind generation due to setback constraints; and
- Discussions and agreement for use of existing access tracks where possible.

Accordingly, it is considered that the proposed scheme amendment is consistent with the objectives and intent of SPP2.7 and warrants approval accordingly.

6.2.3 State Planning Policy 3.7 – Planning in Bushfire Prone Areas

The subject site is located within a 'Bushfire Prone Area' under the Department of Fire and Emergency Services (**DFES**) Map of Bushfire Prone Areas.

State Planning Policy 3.7 Planning in Bushfire Prone Areas (**SPP3.7**) provides the foundation for land use planning to address bushfire risk management in Western Australia. The Guidelines for Planning in Bushfire Prone Areas is a supplementary document used to support SPP3.7. Clause 3.2.1 of the Guidelines provides information relating to the level of information required for designated areas where there is no perceived current hazard.

The proposal simply seeks to rezone Lot 505 from Light Industry to Rural and inclusion of an Additional Use for Industry. This rezoning will support the development of the renewable energy facility (wind/solar/battery) and the development of the new thermal power facility. The specific location and confirmation of the development are still subject to further design and lodgement of a development application. The specifics surrounding the built form will be informed at the development application stage and informed by a Bushfire Attack Level (**BAL**) assessment and supported by a Bushfire Management Plan, where necessary.

Due to the size of the subject site and the nature of the infrastructure being largely not habitable it is considered a scheme amendment can progress without the need for a BAL assessment at this stage. It is acknowledged that the bushfire considerations will be addressed at future stages in the planning process and Shire and WAPC should have comfort that it needs to be addressed before a development application can be approved.

On the above basis, the proposal satisfies the intent of SPP3.7 and warrants approval notwithstanding the departure from the policy provisions.

6.2.4 State Planning Policy 4.1 – Draft Industrial Interface Policy

The purpose of State Planning Policy 4.1 – Draft Industrial Interface Policy (**Draft SPP4.1**) is to protect industry and infrastructure facilities from the encroachment of incompatible land uses and ensure that planning decisions consider the locational constraints of these land uses, the significant investments they represent and their current and future benefits and costs to the community when considering the most appropriate land uses for the surrounding land. The policy also seeks to prevent land use conflict between industry/infrastructure facilities and sensitive land uses.

This policy applies to planning decision-making for existing and proposed:

- (a) industrial zones in region or local planning schemes;
- (b) industrial land uses, including land uses that may be permitted on land that is not zoned for industrial purposes;
- (c) infrastructure facilities; and
- (d) and that may be impacted by existing and proposed industrial land uses and/or infrastructure facilities. This includes land impacted by industrial or related activity exempt from planning approval, such as mining operations.

Draft SPP4.1 applies to decision-making related to industrial land uses or infrastructure facilities or land that may be affected by the following proposals:

- the preparation of region schemes, improvement schemes, regional strategies or frameworks, sub-regional strategies, local planning strategies, schemes, structure plans and amendments to these
- subdivision applications for land zoned or otherwise for industrial land uses or infrastructure facilities
- development application.

The existing Exmouth Power Station is protected by a Special Control Area which provides a suitable buffer to ensure the continued power generation for the Exmouth locality. The proposed new thermal power station is located within close proximity to the existing power station. The existing Special Control Area will provide the necessary buffer to protect the operation of the power station and does not need to be modified as part of this scheme amendment.

Where new thermal power generation is part of the solution it will be an improvement on the current operation because it:

- Will be used significantly less run hours, anticipated to be 20% of the total generation annually accounting for contingency events and night time generation where wind is not in the solution.
- Will reduce carbon emissions by 67% under the reduced operations, resulting in a reduction of 9,000 tons of carbon emissions per annum; and
- Result in substantially fewer deliveries of fuel, reducing road transport requirements and associated environmental impacts.
- Horizon Power intends to run the facility 'hydrocarbons off' for periods, meaning that no thermal will be in use at all during those times. The solar farm will not generate noise; any windfarm would generate minimal sound and will be set back 1.5 km from sensitive receptors including residential dwellings.

Exmouth Power Station currently has approval for the operation of 8 engines. The latest noise assessment, conducted in 2012, was undertaken by Lloyd George Acoustics, following noise attenuation measures being implemented by the Exmouth Power Station Pty Ltd (**ExPS**) to achieve a reduction in noise levels as far as practical (installation of 8 exhaust mufflers). This assessment identified a reduction in the noise footprint in comparison to previous assessments and provided an updated compliance contour for the existing operating conditions of the power station (Day time – 8 engines; Night time – 4 engines) with a peak load of just below 6,500kW occurring for short durations in the late afternoon. The 2012 noise assessment also mapped a compliance contour assuming a full operating capacity of 13,000kW (Day time – 15 engines; Night time – 6 engines). Horizon Power, however, has since provided advice to the Shire that based on current power generation forecasts, the power station is unlikely to operate at a load of 13,000kW before the expiry of the power station agreement, with a full capacity operating load of 10,000kW being a more accurate figure upon which to define a land-use buffer.

When we take into consideration the above information, it is proposed to provide a new thermal power station with a maximum output of 6,000KW. This is below the current 13,000KW capacity and buffer set up for that purpose.

The proposed thermal power station, if required would be approximately 150m from the existing facility. The special control area, which stretches between 600m – 1000m from the Exmouth Power Station, would not need to be amended. The solar and wind farms would not need a buffer.

The renewable power generation (wind/solar) do not need the protection of the Special Control Area. Further detail relating to these considerations is provided within Section 6.3.1 and 7 of this report.

Taking into consideration the above, the scheme amendment is consistent with the provisions of the Draft SPP4.1.

6.2.5 State Planning Policy 6.3 – Ningaloo Coast

The Ningaloo Coast Statement of Planning Policy 6.3 (**SPP6.3**) applies to all land within the Ningaloo coast policy area. Local governments are to have due regard to SPP6.3 in the preparation or amendment of town planning schemes, strategies and policies, and when providing comments and advice on planning applications that deal with land within the Ningaloo coast policy area.

The four key objectives of SPP6.3 are –

1. *Provide state agencies, local government, community and proponents with clear guidance regarding acceptable and sustainable development on the Ningaloo coast.*
2. *Maintain the Ningaloo coast as an all-seasons recreation and nature-based tourism destination and limit growth with managed staged development, to ensure that the community continues to enjoy a remote and natural experience.*
3. *Preserve and protect the natural environment and enhance and rehabilitate degraded areas within the environment.*
4. *Consolidate future residential, commercial, higher-impact tourism and industrial development in the towns of Carnarvon and Exmouth and provide strategic directions for their future growth.*

The proposed scheme amendment simply seeks to provide the appropriate framework to ensure the future power generation requirements for Exmouth. The rezoning of the land to Rural ensures the renewable component of the power generation is cable of approval. The rezoning from Light Industrial to Rural ensures the land can maintain its natural qualities and enhance its position in the landscape. The inclusion of the Industrial additional use simply provides the mechanism to provide the necessary thermal power supply needed for Exmouth. This is an important consideration to ensure the continued growth in the region and maintain a reliable and progressively renewable power supply for the future.

SPP6.3 contains 11 guiding principles which are used to assess all future planning and development on the Ningaloo coast to ensure the protection and sustainable use of the environment for the future.

Table 3: SPP6.3 11 Guiding Principles

11 Guiding Principles	Proposal
<p>1. Sustainable Development</p> <p><i>All planning and development must meet the needs of current and future generations through appropriate land use and planning policies and practices which integrate environmental protection, social advancement and economic prosperity in the interests of sustainable development.</i></p>	<p>The proposed scheme amendment has had a large consideration for the existing natural and built environment. The scheme amendment will subsequently allow for a renewable energy hub on the subject site.</p> <p>Horizon Power is undertaking a transition to be 100% renewable energy dependent with the aim of achieving 80% renewable energy dependence by 2024. Therefore, both the scheme amendment and the subsequent development to follow have had much consideration for the sustainability of the development.</p>

11 Guiding Principles	Proposal
<p>2. Community Aspirations</p> <p><i>Future planning and decision making must be consistent with the vision for the Ningaloo coast, including equity of access for a range of visitor experiences in different settings for all people from those seeking a remote and natural experience along the coast or the infrastructure and services provided for in the towns of Carnarvon and Exmouth.</i></p>	<p>The scheme amendment will subsequently allow for a renewable energy hub on the subject site. This future power supply is a necessity for the future of the Shire to ensure enough power is produced to meet the demand of the growing population of Exmouth.</p>
<p>3. Aboriginal Heritage</p> <p><i>All planning and development must provide for the ongoing protection of Aboriginal heritage (if there are direct impacts), especially relating to the marine environment, and the continuation of Aboriginal use and caring for country. Where relevant, it should also provide opportunity for the development of culturally appropriate tourism through the interpretation of Aboriginal heritage.</i></p>	<p>No Aboriginal heritage has been located on the subject site.</p>
<p>4. Economic Development</p> <p><i>All planning and development should assist actively in the creation of regional wealth, support the development of new industries and encourage economic activity as long as these activities are in accordance with sustainable development principles. Planning and development must also support the provision and maintenance of infrastructure based on sustainability principles to service regional communities and develop and upgrade tourism infrastructure to improve the attractiveness of the region as a natural and remote place to visitors and residents alike.</i></p>	<p>The development of a renewable energy hub and the security of long-term renewable energy supply will provide for the increasing population and therefore increase services within the Shire. The demand for further energy will be supplied as a result of the proposed scheme amendment, therefore enabling the Shire to provide power for the ever-growing population and tourism. Overall, the energy supply will have long-term positive impacts on the Shire's development, economy, sustainability and growth.</p>
<p>5. Interdependence</p> <p><i>Development must not significantly interfere with current natural ecological processes. Ecological processes include both physical and biological systems, which are strongly interconnected. Changing one part of the environment may have an impact on other parts.</i></p>	<p>Flora and Fauna Environmental Reporting has been conducted and has concluded that the presence of Priority flora and fauna are not a statutory constraint for the subject site or the proposed future development.</p>
<p>6. Limits of Acceptable Change</p> <p><i>Development must be within limits of acceptable change. The limits of acceptable change are defined as the degree of change a system can accommodate or buffer while still sustaining or returning to its desired characteristics. The limits may be defined by environmental, social or economic concerns. What is acceptable or appropriate is determined by consultation with governments and communities, as well as by legislation and regulations. The limits of acceptable change establish the maximum level of alteration for a resource that society is prepared to accept. Given the region's acknowledged fragile nature, more reliance on scientific knowledge and research will be necessary in defining appropriate limits of acceptable environmental change for this region.</i></p>	<p>There are no significant environmental, social, economic or governance impacts anticipated to result from the proposed amendment, which is relatively minor in scale/nature and entirely consistent with the vision and objectives established by the Shire of Exmouth in its Local Planning Strategy.</p>

11 Guiding Principles	Proposal
<p>7. Precautionary Principle</p> <p><i>Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation. In applying this principle in planning and development, the following steps must be followed—</i></p> <ul style="list-style-type: none"> <i>The onus is on any proponent to show that development does not pose any likelihood of serious or irreversible harm of the environment.</i> <i>If the proponent cannot demonstrate there is no likelihood of such harm, the onus is on the development proponent to show that the harm can be managed.</i> <i>If the proponent cannot demonstrate the harm will be managed, the development should not go ahead.</i> 	<p>Flora and Fauna Environmental Reporting has been conducted and has concluded that the presence of Priority flora and fauna are not a statutory constraint for the subject site or the proposed future development.</p>
<p>8. Cumulative Impacts</p> <p><i>All planning and development must consider its cumulative impact. The demand for and subsequent provision of tourism or recreational development along the Ningaloo coast may result in cumulative impacts as each new development proposal is added to existing development. The ad hoc establishment of developments along the Ningaloo coast has the potential to erode the remote and environmental values of the area over time and also may affect the economic viability of the individual development projects. If there is an unacceptable cumulative impact, the development should not go ahead.</i></p>	<p>The proposed scheme amendment has had a large consideration for the existing natural and built environment. The scheme amendment and subsequent renewable energy hub will have minimal impact on the existing environment on the subject site.</p> <p>The development of a renewable energy hub is not foreseen to have a cumulative impact on the Shire and, subsequently, the Ningaloo coast.</p>
<p>9. Protection of High-Conservation Values</p> <p><i>Planning must be based on the protection of high-conservation areas such as the Ningaloo Marine Park, Cape Range National Park and surrounds. These areas are rare and irreplaceable natural assets with outstanding scenic, recreational and scientific value, which have been identified as a potential world heritage area. Development must not adversely interfere with these values.</i></p>	<p>As above.</p>
<p>10. Protection of Remote Values</p> <p><i>Remoteness is a dynamic concept, rather than a static one. It varies from place to place, through time as society's values change, and from person to person, therefore it is useful to describe remoteness in terms of relative values, rather than providing a definition. The Planning and environmental guidelines for sustainable tourism development on the Ningaloo coast address specific issues which may affect remoteness values, for example emission of noise (e.g. power generation, vehicles and boats), light, smoke or dust, waste disposal (e.g. refuse disposal site, public toilets, evaporation ponds and pipe outfalls), visual impact (e.g. buildings and roads) or odour (e.g. sewage treatment). Development must not significantly interfere with any identified remote values.</i></p>	<p>The development of the renewable energy hub will reduce the peak load of the existing power station / thermal power and therefore reduce the noise of the power station and its noise footprint.</p> <p>Whilst the solar farm will not generate noise, the wind farm may generate minimal sound but will be set back 1.5 km from sensitive receptors including residential dwellings.</p> <p>Therefore, there will be minimal impact on Exmouth and its surroundings, ensuring the protection of the remote values of the area.</p>

11 Guiding Principles	Proposal
<p>11. Protection of Biodiversity</p> <p><i>Biodiversity underpins the processes that make life possible. Healthy ecosystems are necessary to maintain and regulate atmospheric quality, climate, fresh water, marine productivity, soil formation, cycling of nutrients, and waste disposal. Biodiversity is intrinsic to values such as beauty and tranquillity. Australians place a high value on native plants and animals, which contribute to a sense of cultural identity, spiritual enrichment, and recreation. Biodiversity is central to the cultures of Aboriginal and Torres Strait Islander peoples. Australian plants and animals attract tourists and provide food, medicines, energy and building materials. Our biodiversity is a reservoir of resources that remains relatively untapped. Planning must consider biodiversity, and development must not significantly interfere with the biodiversity in a particular area.</i></p>	<p>Flora and Fauna Environmental Reporting has been conducted and has concluded that the presence of Priority flora and fauna are not a statutory constraint for the subject site or the proposed future development.</p>

Whilst the thermal power station and the solar farm would not be located within the designated significant environmental area, the wind turbines/farm would be. Only a small slither on the western side of Lot 505 has been designated a significant environmental area.

Taking into consideration the above, it is considered the proposed scheme amendment is consistent with the proposed SPP6.3 and should be supported accordingly.

6.2.6 Gascoyne Regional Planning and Infrastructure Framework (WAPC, 2015)

The Gascoyne Regional Planning and Infrastructure Framework has been prepared for the region, which encompasses four local governments — the shires of Carnarvon, Exmouth, Shark Bay and Upper Gascoyne. The Framework provides the regional context for land-use planning in the Gascoyne through an overview of the major regional economic, social, cultural and environmental issues and their associated opportunities. It identifies the priority actions required to enable comprehensive regional planning and the priority regional infrastructure projects to facilitate economic and population growth.

Due to vast distances between what are essentially limited markets, there is no regional electricity transmission network in the Gascoyne. Each settlement in the region generates its own electricity typically through diesel, gas, wind or a combination of multiple sources, which exclusively service that settlement and its immediate hinterland.

The Framework identifies that Horizon Power is the supply authority for the Gascoyne, providing electricity services to Carnarvon, Exmouth/ Learmonth, Denham, Coral Bay and Gascoyne Junction. Additionally, it states that:

Exmouth is also expected to experience ongoing growth in demand for electricity (Gascoyne Development Commission, 2010) ... Energy generation from sources such as solar and wind power are likely to have an increasingly important role in the Gascoyne's future energy provision, particularly in conjunction with base-load generation.

The proposed scheme amendment will enable the desired future power generation to be met in accordance with Framework. Additionally, the proposed scheme amendment will ensure the planning framework is capable of considering a development application for the renewable power and thermal power options for Exmouth.

6.3 Shire of Exmouth Local Planning Scheme No.4

The subject site is zoned 'Rural', 'Light Industry' and 'Urban Development' under the LPS4. It consists of an environmental conservation reserve and is within two Special Control Areas (Special Control Area 3 – Exmouth Power Station & Special Control Area 5 – Floodplain).

Refer to **Figure 6 - Zoning Map**.

Pursuant to *Table 1 – Zoning Table* of LPS4, the Renewable Energy Facility land use is classified as 'X' (prohibited uses) within the 'Light Industry' zone. Additionally, the Renewable Energy Facility land use is classified as 'X' within the 'Light Industry' and 'Rural' zones. For reference, the scheme definitions of each of these land uses are provided as follows:

renewable energy facility – means facility used to generate energy from a renewable energy source and includes any building or other structure used in, or in connection with, the generation of energy by a renewable resource, where energy is being produced for commercial gain (i.e. solar farms as opposed to solar panels).

industry – means premises used for the manufacture, dismantling, processing, assembly, treating, testing, servicing, maintenance or repairing of goods, products, articles, materials or substances and includes facilities on the premises for any of the following purposes —

- (a) the storage of goods;
- (b) the work of administration or accounting;
- (c) the selling of goods by wholesale or retail;
- (d) the provision of amenities for employees;
- (e) incidental purposes.

In seeking to amend LPS4 to expand the range of permissible land uses on the subject site, careful consideration must be given to the objectives of the 'Rural' zone. Clause 3.10.9 of LPS4 establishes the following objectives for the Rural zone:

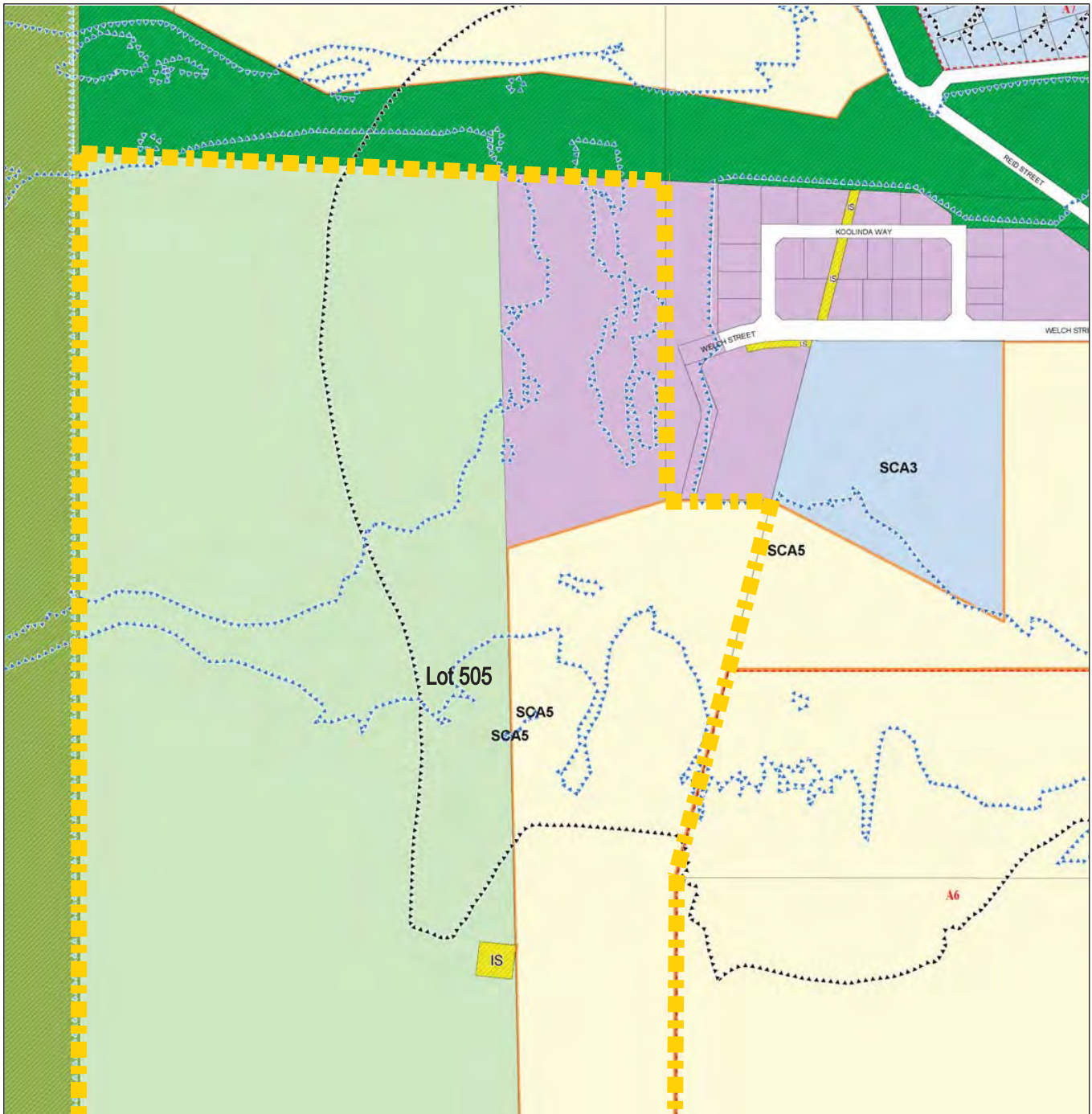
- (a) To provide opportunities for a range of limited rural and related ancillary pursuits on rural-residential lots where those activities will be consistent with the amenity of the locality and the conservation and landscape attributes of the land.
- (b) To set aside areas for the retention of vegetation and landform or other features which distinguish the land.
- (c) To provide for lot sizes in the range of 1 ha to 4 ha.

The proposed scheme amendment is considered to be entirely consistent with the 'Rural' zone objectives, noting that:

- The subject site is currently made up of mostly rural land. The proposal is proposing for the smallest portion of Lot 505 to be rezoned to rural to ensure consistency in the overall zoning for the subject site.
- The Light Industry land use will be rezoned to Rural but the Lot to the east of Lot 505 will remain Light Industry and provide a buffer to the Service Commercial and Urban Development Zones.
- The future development of the subject site will still be possible under the Rural zoning, with renewable energy facility use being consistent with the Rural zoning objectives.

The inclusion of the Industry use as an Additional Use allows for the thermal power component of the overall power supply to be considered as a use capable of approval on the subject site. Taking into consideration the existing industrial zoning, the longstanding thermal power supply within close proximity to the subject site and the existing special control area to protect this infrastructure, it is considered that the inclusion of the industrial use is entirely appropriate for the subject site and should be supported accordingly.

Having regard to the above, the proposed scheme amendment to rezone a portion of Lot 505 to Rural and apply an additional use of 'industry', to the subject site is consistent with zone objectives of LPS4 and the use has significant merit in this location.



LEGEND

LOCAL SCHEME RESERVES

Civic and Community	Public Purposes
Drainage/Waterway	Public Purposes : Car Park
Environmental Conservation Reserve	Public Purposes : Education
Foreshore	Public Purposes : Government Services
Local Distributor Road	Public Purposes : Infrastructure Services
Local Road	Public Purposes : Medical Services
Primary Distributor Road	Public Purposes : Recreational
Public Open Space	Strategic Infrastructure

Subject site

LOCAL SCHEME ZONES

Commercial (C1,C2,C3)	Rural Residential
General Industry	Service Commercial
Industrial Development	Special Use
Light Industry	Tourism
Residential	Urban Development
Rural	

OTHER CATEGORIES

Scheme Area Boundary	SCA2 Exmouth Waste Water Treatment Plant Special Control Area 2
Local Government Boundary	SCA3 Exmouth Power Station Special Control Area 3
R20 : R Codes	SCA4 Exmouth Aerodrome Special Control Area 4
A1 Additional Uses	SCA5 Floodplain Special Control Area 5
R1 Restricted uses	SCA6 Minilya-Exmouth Road Special Control Area 6
RR1 Rural Residential Area	No Zone
SU1 Special Use Area	Waterbodies
SCA1 Exmouth Water Reserve Special Control Area 1	



6.3.1 Special Control Area 3 – Exmouth Power Station

The subject site is located within the Shire of Exmouth's Power Station Special Control Area (**SCA3**), subject to the provisions of LPS4 Clause 5.4. Clause 5.4.1 of LPS4 establishes the following objectives for the SCA3:

- (a) *To ensure that the use and development of land is compatible with the operation of the Exmouth Power Station.*
- (b) *To minimise impacts on residential and other sensitive uses.*

Importantly, the proposed scheme amendment will complement the Exmouth Power Station as the future development on the subject site will also be a public utility that provides power generation, in line with Clause 5.4.1(a) as referenced above.

Pursuant to Clause 5.4.2 of the LPS4, any application for development approval, scheme amendment request, structure plan or subdivision application on the subject site is required to comply with the objectives and additional provisions of the Exmouth Power Station Special Control Area.

The SCA3 stretches between 600m – 1000m from the Exmouth Power Station. As the new thermal power station would be a mere 150m from the current thermal power station, it is suggested that no modifications are required to the buffer zone. The latest noise assessment found that the power station would operate at a peak load of just below 6,500kW, which would occur for short durations in the late afternoon. The power station can operate at a full capacity of 13,000kW. The proposed thermal power station that is likely to be located on the subject site will have a capacity of 6,000KW, well below the 13,000KW which informed SCA3.

This scheme amendment is the first stage of the new power resolution for the Shire of Exmouth. The second stage consists of the implementation and lodgement of a detailed development application for the new power solution. Finally, the final phase consists of the consolidation of the special control area once the new thermal station is delivered.

The development of the solar and wind farm will result in the thermal power station reducing its KW output. This, combined with the new technologies, will result in less noise and overall impact on the locality, which will allow for a reduction in the special control area. Therefore, currently, the SCA3 does not need to be amended to allow for the modification to the thermal power station location. Further detail on the specific elements of the thermal power station can be provided at the development approval stage of the project

6.3.2 Special Control Area 5 – Floodplain

The Department of Water and Environmental Regulation and the local government's consultants have produced 100-year average recurrence interval (ARI) floodplain mapping for a number of watercourses in the Exmouth area. The subject site is located within the Shire of Exmouth's Floodplain Special Control Area (**SCA5**), subject to the provisions of LPS4 Clause 5.6. Clause 5.6.1 of LPS4 establishes the following objectives for the SCA5:

- (a) *To minimise impacts on the floodplain from inappropriate encroachment of development.*
- (b) *To avoid subdivision and development within the high hazard floodplain.*
- (c) *To ensure that proposed floodplain development has adequate flood protection and does not impact on the existing flood regime of the area.*

The proposed scheme amendment and subsequent development will avoid development within high hazard floodplain areas and ensure the development has adequate floor protection, in line with Clause 5.6.1 as referenced above.

Pursuant to Clause 5.6.2 of the LPS4, any application for development approval, scheme amendment request, structure plan or subdivision application on the subject site is required to comply with the objectives and additional provisions of the Exmouth Floodplain Special Control Area, these include:

Additional Provisions

In considering any application for development approval, scheme amendment request, structure plan or subdivision application, and in addition to matters listed in clause 67 of the deemed provisions the local government shall have regard to —

- a) *The general presumption against subdivision and development within the flood plain unless—*
 - i. *Hydraulic modelling has been prepared to the satisfaction and approval of the Department of Water and Environmental Regulation;*
 - ii. *In respect of land within the high hazard flood plain, suitable controls are in place to ensure no development will encroach into the high hazard floodplain, excluding earthworks for the provision of essential roads, bridges, footpaths and jetties.*
- b) *Building levels within the floodplain achieving the recommended minimum floor level of at least 0.5 metres above the relevant 100 year ARI flood level for the location having regard to advice from the Department of Water and Environmental Regulation.*

The specific provisions above will be worked through and dealt with at the development application stage of the proposal, as they relate to design specific considerations. DWER and the Water Corporation have been involved throughout the land identification and proposal process and are in principally supportive of the project.

DWER has advised that the following guiding principles are to be used to ensure proposed development in flood prone areas is acceptable with regard to major river flooding:

- *Proposed development has adequate flood protection from a 1 in 100 (1%) Annual Exceedance Probability (AEP) flood.*
- *Proposed development does not detrimentally impact on the existing 1% AEP flooding regime of the general area.*

The results of the Exmouth Floodplain Management Study (SKM, 2007) show that the lot is affected by flooding during a 1 in 100 (1%) Annual Exceedance Probability (AEP) flood.

DWER have stated that they have no major objections to the proposed scheme amendment provided the above guiding principles are followed. Modelling may be required as part of the development application process.

6.3.3 Exmouth Townsite Structure Plan

The Structure Plan builds on the previous strategic planning direction provided by the 1998 and 2004 Exmouth Structure Plans and, moving forward, is intended to provide the context for land use decisions within the townsite based on the current understanding of regional and local planning and environmental issues affecting the study area.

As local structure planning, subdivision and development proceeds across the Townsite, certain key design elements should be incorporated to ensure sustainable development outcomes for Exmouth. A number of development Initiatives have been prepared to provide specific guidance as to the issues and opportunities associated with particular sites and to indicate a vision for how future development of these sites might unfold.

As an initial phase of the Structure Plan review process, consultation with government and community stakeholders within the region was considered a critical component in identifying issues affecting the Exmouth Townsite. The outcomes of the stakeholder consultation were then carried forward to feed into the Visioning Workshop process.

The comments from these key stakeholders were then considered along with the views of community representatives and the wider community, who were invited to participate in a Visioning Workshop held early in the Structure Plan formulation process. The two days of workshop assisted participants in understanding what they value about living in Exmouth and helped to establish a vision for the future of the Townsite.

As part of the process, the community discussed the current Exmouth Power Station. One of the outcomes outlined the potential of relocating the power station as a long-term vision. The construction of the renewable energy hub aligns with this vision as Horizon Energy endeavours to eventually reach 100% renewable energy production.

As seen in **Figure 7** – Exmouth Townsite Structure Plan Map, the Structure Plan designates the subject site as 'Proposed Urban' with constrained land and later identifies the subject site as partially located within the Welch Street Precinct and part of the Development Initiative Plan 2.

Development Initiative Plan 2 (DI2) sets out development opportunities for land with frontage to Murat, Reid and Welch Street. The future configuration of the land uses in this precinct is affected by the proximity of the power station and corresponding need for buffers, and the impact of the waste disposal area. As technical work to define the buffer requirements of the Power Station is currently unavailable, the implementation of the preferred land use configuration. DI2 will be subject to investigations being completed prior to rezoning and subdivision. The proposed uses for the site are yet to be determined and include proposals for 'urban/tourism' versus 'service commercial/service industry'.

Electricity in Exmouth is supplied to Horizon Power, and to the Exmouth community by the Exmouth Power Station Pty Ltd. In September 2003, Western Power entered into an 18 year power purchase agreement with Exmouth Power Station Pty Ltd., with a new gas-fuelled power station replacing the old diesel-fired station and becoming operational in September 2006. The power station is located at Lot 1467 Welch Street and currently comprises nine power generation units, with the installation of an additional unit being planned for. The power station is designed to allow for future expansion, as the Exmouth region has been identified as a growth area by Horizon Power. The Structure Plan review process has identified the need for a buffer definition study for the power station to be undertaken, to ensure separation of noise sensitive uses is appropriately addressed from a land use, health and safety perspective.

The SCA3 with LPS4 has formally been provided as the appropriate buffer for the existing Exmouth power station. No modification to SCA3 is proposed as part of this scheme amendment as the output of the proposed new thermal power station is largely reduced, which ultimately reduces the noise impacts. The shift towards renewable energy will ensure the impact associated with power generation will be reduced as Exmouth grows. The thermal station component is viewed to have a minimal impact on the ability for new land, in this area, to be released for future residential development. This minimized impact may allow for a reduction in the special control area and therefore allow for future residential and sensitive uses to be developed on the surrounding land. Taking this into consideration, it is considered the proposed scheme amendment is consistent with the Structure Plan's overall vision and intent of securing managing future power supply for the region.

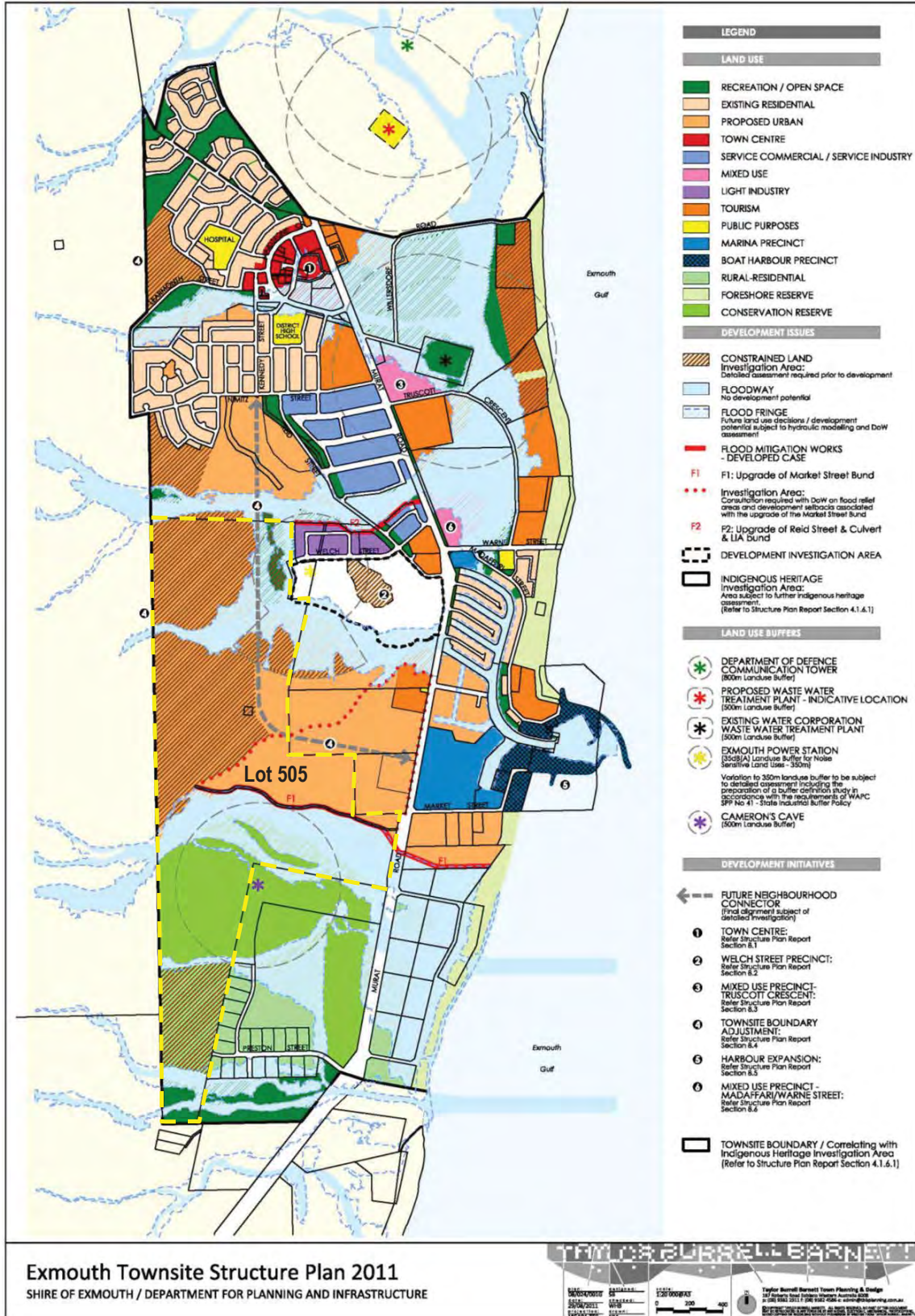


Figure 7 – Exmouth Townsite Structure Plan Map

7 Other considerations

7.1 EPA Separation Distance

The Environmental Protection Authority (EPA) Guidance Statement No. 3 – Separation Distances between Industrial and Sensitive Land Uses (**EPA Guidance Statement No. 3**) provides generic buffer distances intended to mitigate the impacts of industrial developments on sensitive land uses.

The generic separation distances are based on the experience of the Department of Environment (DoE) and other regulatory authorities (e.g. Environmental Protection Authority, Victoria) and limited site-specific quantitative scientific assessment. These distances are not set distances but rather generic distances to inform further detailed analysis for specific industrial developments. With regard to power generation facilities, generating 20 megawatts or more (total) for natural gas & 10 megawatts or more (total) for other fuels, the EPA Guidance Statement No. 3 identifies potential impacts as gaseous, noise and dust, and recommends a generic buffer distance of 3000m – 5000m. Furthermore, generating more than 10MW but less than 20MW for natural gas fuelled electricity prescribes a generic buffer distance of 2000m – 3000m. The buffers recommended by EPA Guidance Statement No. 3 are not absolute separation distances, but instead are default distances providing general guidance in the absence of site specific technical studies.

EPA Guidance Statement No. 3 states that site-specific technical analyses are generally found to provide the most appropriate guide to the separation distance that should be maintained between an industry or industrial estate and sensitive land use.

There is a separation of approximately 850m between the future thermal power station and the nearest residence. It is noted that the proposed future thermal power generation will generate only 6MW of power. Therefore, the proposed thermal power generation is under the prescribed power generation requirements of the EPA Guidance Statement No.3. It is considered the detailed noise modelling of the existing Exmouth Power Station and current SCA3 within LPS4 provides the necessary buffer to support the proposed new thermal station. Furthermore, the reduced output of thermal power supply may result in a reduction in the special control area. It is therefore viewed to be appropriate to have a site-specific technical analysis to provide the most appropriate buffer.

Nevertheless, the proposed scheme amendment has the necessary buffer controls and has considered the requirements of the EPA Guidance Statement No.3 and should be supported accordingly.

7.2 EPA Cumulative Impact Study

In August 2020 the then Minister for Environment made a request to the EPA to provide strategic advice under Section 16(e) of the *Environmental Protection Act 1986* on the potential cumulative impacts of the proposed activities and developments on the environmental, social and cultural values of Exmouth Gulf.

For the purpose of this strategic advice, the EPA characterised the spatial extent of Exmouth Gulf as the entire portion of State coastal waters located between the North West Cape peninsula, the Muiron Islands, and mainland WA, and the adjacent land from Cape Vlamingh to Urala Station.

The EPA submitted recommendations and advice to the Minister for the Environment around the following three themes:

1. Protecting the environmental, social and cultural values of Exmouth Gulf and its surrounds
2. EPA expectations for assessing future compatibility of activities and developments in Exmouth Gulf and its surrounds
3. Integrating management of the land and sea environment of Exmouth Gulf

The EPA recommended:

- A very high level of protection for the eastern and southern portion of Exmouth Gulf and adjacent hinterland areas;
- Any future activities and development must be compatible with the protection of the key values;
- An integrated management approach is required to ensure the conservation and enhancement of the key values of Exmouth Gulf.

The proposed scheme amendment has had a large consideration for the existing natural and built environment. The development of a renewable energy hub is not foreseen to have a cumulative impact on the Shire and, subsequently, the Exmouth Gulf and adjacent hinterland areas. There are no significant environmental, social, economic or governance impacts anticipated to result from the proposed amendment, which is relatively minor in scale/nature and entirely consistent with the vision and objectives established by the Minister for the Environment. Finally, this amendment would facilitate the future power supply for the Shire which may inevitably enable the reduction of thermal reliance and the reduction of the special control area, therefore reducing the overall impact on the Exmouth locality.

The proposed scheme amendment will ensure the EPA recommendations and values are being met in accordance with The Cumulative Impact Study.

8 Amendment classification

Part 5, Section 34 of the *Planning and Development (Local Planning Schemes) Regulations 2015* sets out various criteria for the classification of local planning scheme amendments. Amendments can be classified as either “basic”, “standard”, or “complex”.

The proposed amendment to LPS4, which seeks to rezone a portion of Lot 505 to Rural and apply an additional use of ‘Industry’ to the subject site, is considered to be properly classified as a ‘complex’ amendment in accordance with the Regulations as it is:

- (a) *an amendment that is not consistent with a local planning strategy for the scheme that has been endorsed by the Commission;*

The necessary justification for this amendment has been provided throughout the report to confirm its appropriate and necessity to ensure the future power supply for Exmouth.

9 Conclusion

Scheme amendment 8 to LPS4 seeks to rezone and add an additional use to the subject site to facilitate the development of a renewable energy facility and thermal power station for Exmouth. The proposed amendment is considered appropriate given the context of the subject site and warrants support for the following reasons:

- The Rural zone is intended to provide opportunities for a range of limited rural and related ancillary pursuits on rural-residential lots and set aside areas for the retention of vegetation and landform or other features which distinguish the land. The proposed future development will ensure the objectives of the rural zone will remain due to the nature and scale of the proposed renewable energy facility.
- The proposed scheme amendment to rezone the subject site to Rural is consistent with the evolution of power demand and supply and has significant merit in this location. Any future rural development is expected to be consistent with the objectives of the Rural zone.
- The proposed thermal power station would be approximately 150m from the existing facility. The special control area, which stretches between 600m – 1000m from the Exmouth Power Station, would not need to be amended. The solar and wind farms would not need a buffer.
- The report has demonstrated that the potential offsite impacts associated with noise and environmental impacts are unlikely to be obtrusive and that the future use will be able to integrate with existing development in the immediate area and will not be detrimental to the local amenity. If the proposed scheme amendment were to be successfully gazetted, the necessary site and land use specific technical reporting would be undertaken at the development application stage to ensure no adverse amenity impacts are experienced.
- The subject site is currently largely rural and would benefit from development. The proposed zoning will facilitate appropriate development and secure the future power supply for Exmouth.

It is, therefore, requested that the Shire present the application to Council at the earliest opportunity to initiate and adopt the proposed scheme amendment 8. We respectfully request the opportunity to address any meeting of Council at which this matter is considered.

Appendix 1
Certificate of Title

WESTERN



AUSTRALIA


REGISTER NUMBER	
505/DP64832	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
N/A	N/A

RECORD OF QUALIFIED CERTIFICATE

VOLUME **LR3159** FOLIO **564**

OF
CROWN LAND TITLE
 UNDER THE TRANSFER OF LAND ACT 1893
 AND THE LAND ADMINISTRATION ACT 1997
NO DUPLICATE CREATED

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
 REGISTRAR OF TITLES 

LAND DESCRIPTION:

LOT 505 ON DEPOSITED PLAN 64832

STATUS ORDER AND PRIMARY INTEREST HOLDER:
 (FIRST SCHEDULE)

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
 (SECOND SCHEDULE)

- Warning:
- (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.
 - (2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
 - (3) The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP64832
 PREVIOUS TITLE: LR3131-743
 PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE.
 LOCAL GOVERNMENT AUTHORITY: SHIRE OF EXMOUTH
 RESPONSIBLE AGENCY: DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSD)

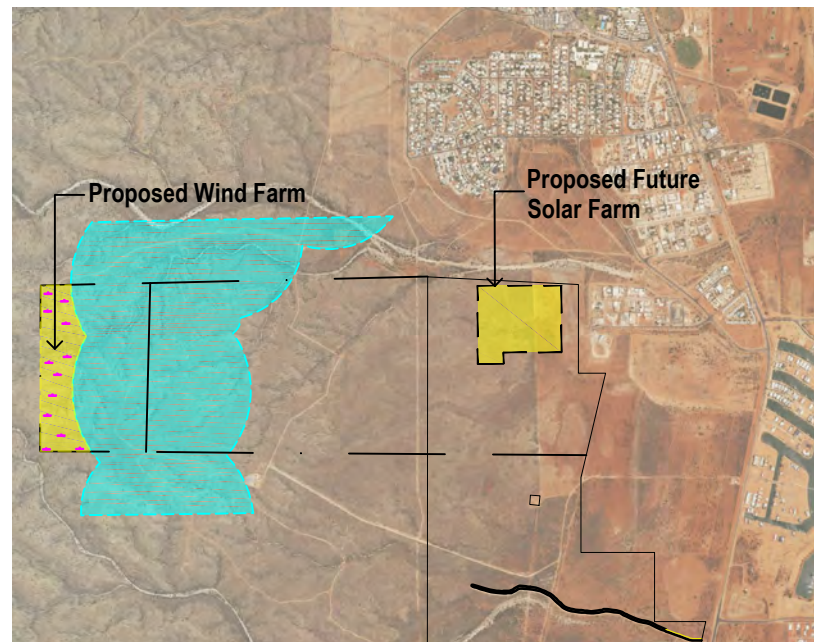
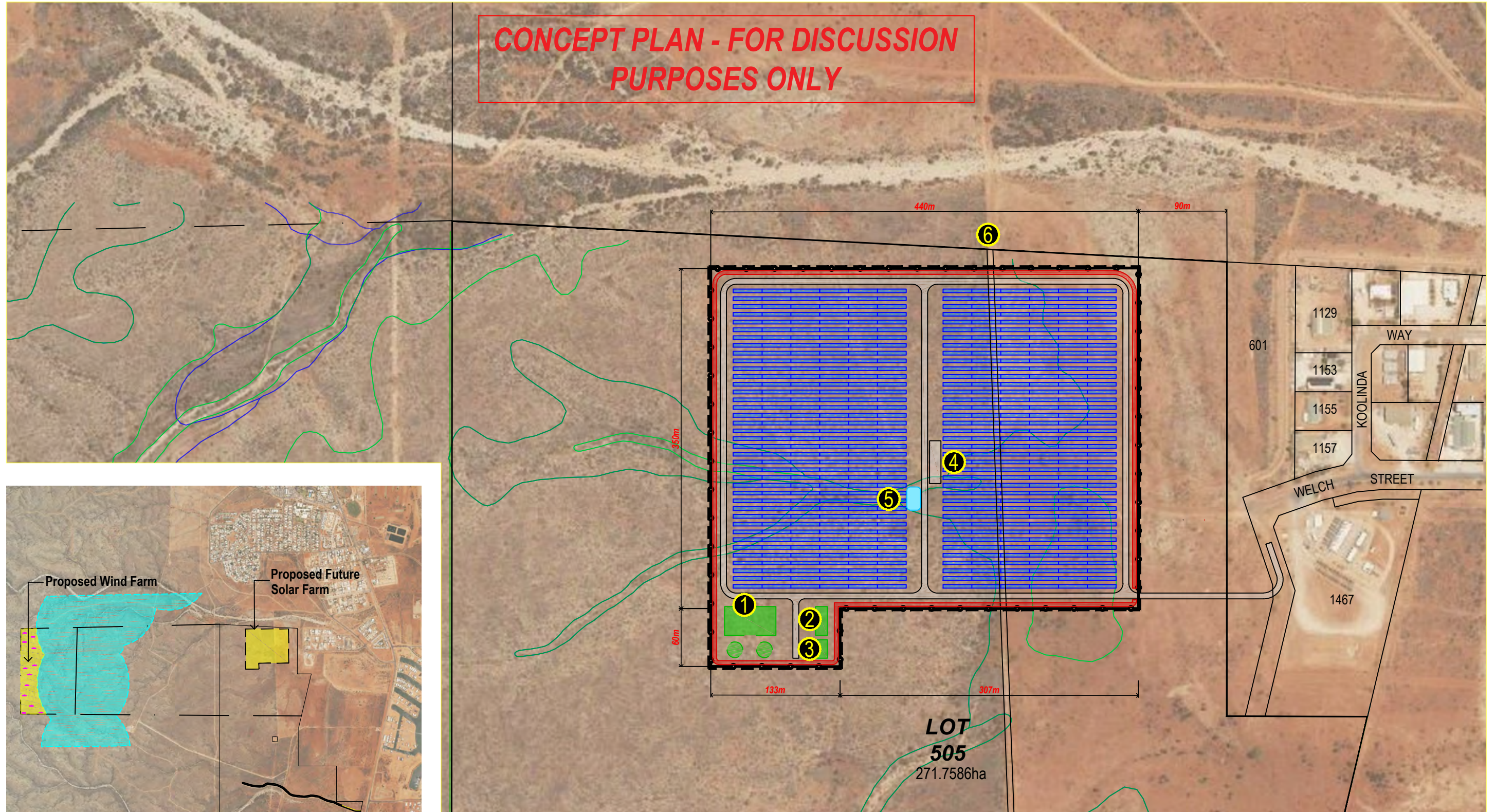
- NOTE 1: L392780 CORRESPONDENCE FILE 00512-1973-03RO.
 NOTE 2: SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES
 NOTE 3: J330362 DEPOSITED PLAN 47181 LODGED FOR EASEMENT PURPOSES ONLY.



LEGEND					
	Subject Site		Fence Line		Wind Turbine
	Application Boundary		EV Rack		Water Corp Exclusion Zone
	4m Driveable Firebreak		6m Paved Road	1	Thermal Power Plant
	Exist Lots		Vegetation Cell	2	Administration & Workshop
				3	Fire Fighting Units
				4	Laydown Area
				5	Dam
				6	Emergency Exit/Access

DEVELOPMENT SUMMARY SUMMARY	
Lot 505	271.7586ha
EV Farm Area	16.21ha
Windfarm Area	17.09ha
Pavement Area	1.16ha

CONCEPT PLAN - FOR DISCUSSION PURPOSES ONLY



LOCALITY PLAN 1:40000

CONCEPT PLAN 1:4000

SCALE 1:4000, 1:40000 @ A3
 DATE 15 Mar 2022
 FILE 7777 Horizon Exmouth.dwg
 REVISION 5/RFH/Rev17.03.22 2/RFH/Rev28.01.22
 4/RFH/Rev15.03.22 1/RFH/Draft/27.01.22
 3/RFH/Rev14.03.22



INDICATIVE RENEWABLE AND THERMAL POWER CONCEPT PLAN
 LOT 505 & 550 EXMOUTH TOWNSITE,
 WESTERN AUSTRALIA



**Lots 284, 505, 550 and Reserve
51970, Exmouth**

Biological Survey

Prepared for
Horizon Power

December 2021

● people ● planet ● professional

Document Reference	Revision	Prepared by	Reviewed by	Admin Review	Submitted to Client	
					Copies	Date
4766AA_Rev0	Internal Draft	B. Duncan C. Walker	B. Eckermann S. Walker	L. Ioannidis	-	21/12/2021
4766AA_Rev1	Client Draft	360 Environmental	Horizon Power	-	1 electronic	22/12/2021

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Executive Summary

Horizon Power commissioned 360 Environmental Pty Ltd (360 Environmental) to undertake a reconnaissance flora and vegetation and basic fauna survey for the proposed construction of renewable power infrastructure in Exmouth, Western Australia.

The Survey Area comprises of areas within Lots 284, 505, and 550 and Reserve 51970 (which comprises of Lots 1391 and 1493). The Survey Area is approximately 536 hectares and is located in the Carnarvon bioregion of Western Australia.

This report presents the results of the field survey undertaken.

Flora and Vegetation

The flora desktop assessment identified 24 conservation significant species occurring within 40 km of the Survey Area. A pre-survey likelihood of occurrence assessment was undertaken and determined 15 species as having a high likelihood of occurrence, five species as having a medium likelihood of occurrence and four species as having a low likelihood of occurrence.

The reconnaissance flora and vegetation survey recorded the floristic composition and vegetation types from 12 relevés, mapping notes and opportunistic observations. A total of 257 taxa were recorded from 153 genera across 58 families.

No Threatened flora species pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* and/or gazetted as Threatened Flora pursuant to the *Biodiversity and Conservation Act 2016* were recorded during the survey.

Eight Priority flora were recorded within the Survey Area:

- Three Priority 2 taxa: *Acanthocarpus rupestris*, *Harnieria kempeana* subsp. *rhadinophylla* and *Tinospora esiangkara*
- Four Priority 3 taxa: *Acacia alexandri*, *Corchorus congener*, *Eremophila forrestii* subsp. *capensis* and *Grevillea calcicola*
- One Priority 1 taxon: *Brachychiton obtusilobus*.

Fourteen introduced taxa were recorded during the survey. One taxon, **Crotalaria incana* subsp. *incana*, is listed as a Declared Pest at the species level under the *Biosecurity and Agriculture Management Act 2007* by the State Department of Primary Industries and Regional Development. Two taxa, **Flaveria trinervia* and **Rumex vesicarius*, are unlisted organisms, which are prohibited entry into Western Australia. No Weeds of National Significance were recorded.

Eleven vegetation types were described and mapped across three broad landforms (drainage lines; hills; and plains) within the Survey Area. Vegetation in the Survey Area was representative of existing broad scale vegetation, and soil and land system mapping for the area. None of the vegetation types were representative of Threatened or Priority Ecological Communities, however 10 vegetation types were considered of local conservation significance.

Vegetation condition within the Survey Area ranged from Excellent to Degraded with the majority considered to be in Very Good condition. Evidence of disturbance included vehicle access tracks, motorbike tracks, weeds and litter.

Vertebrate Fauna

The vertebrate fauna desktop assessment identified 67 conservation significant species occurring within 20 km of the Survey Area. An assessment of the likelihood of occurrence within the Survey Area was undertaken and identified that of the potential conservation significant fauna, three had a high likelihood of occurrence, five had a medium likelihood of occurrence, and 59 had a low likelihood of occurrence.

Fauna habitat mapping was based on a combination of field observations, fauna habitat assessment data and aerial imagery. Seven fauna habitats were mapped within the Survey Area, of which the Drainage line/Creek, Hills (Open Woodland over Tussock Grassland), and Hills (Shrubland over Hummock Grassland) habitats represent the most value to conservation significant fauna and overall fauna assemblages.

The basic terrestrial vertebrate fauna survey recorded the fauna assemblage through opportunistic observations. A total of 21 fauna taxa from 15 families were recorded, comprising 15 bird taxa from 12 families, three mammal taxa from two families, three reptile taxa from two families.

No conservation significant species were recorded during the fauna survey. One introduced species were recorded during the survey, domesticated Horse (*Equus ferus caballus*).

Abbreviations

Abbreviations used through the report are described below in Table 1.

Table 1: Abbreviations

Abbreviation	Description
360 Environmental	360 Environmental Pty Ltd
BAM Act	Biosecurity and Agriculture Management Act 2007
BC Act	Biodiversity Conservation Act 2016
°C	Degree Celsius
CR	Critically Endangered
DBCA	Department of Biodiversity, Conservation and Attractions
DWER	Department of Water and Environmental Regulation
EN	Endangered
EP Act	Environmental Protection Act 1986
EPA	Environmental Protection Authority
EPBC Act	Environment Protection Biodiversity and Conservation Act 1999
ESA	Environmentally Sensitive Area
GDE	Groundwater Dependent Ecosystem
GIS	Geographic Information System
ha	Hectare
IBRA	Interim Biogeographic Regionalisation for Australia
IBSA	Index of Biodiversity Surveys for Assessments
km	Kilometres
m	Metres
MA	Marine
MI	Migratory
MNES	Matters of National Environmental Significance
NVIS	National Vegetation Information System
P	Priority
PEC	Priority Ecological Community
PMST	Protected Matters Search Tool
RE	Range extension
SOI	Species of interest
Survey Area	The Survey Area is located in Exmouth, in the Carnarvon bioregion of Western Australia. It comprises areas within Lots 284, 505, and 550 and Reserve 51970, and is approximately 536 ha.
T	Threatened
TEC	Threatened Ecological Community
TPFL	Threatened and Priority Flora Database

Abbreviation	Description
TPFRF	Threatened and Priority Flora Report Forms
VU	Vulnerable
WA	Western Australia
WAH	Western Australian Herbarium
WoNS	Weeds of National Significance

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1 Introduction

1.1 The Project

Horizon Power commissioned 360 Environmental Pty Ltd (360 Environmental) to undertake a reconnaissance flora and vegetation and basic fauna survey for the proposed construction of renewable power infrastructure in Exmouth, Western Australia (the Survey Area).

The Survey Area comprises areas within Lots 284, 505, and 550 and Reserve 51970 (which comprises Lots 1391 and 1493) (Figure 1). The Survey Area is approximately 536 hectares and is located in the Carnarvon bioregion of Western Australia.

1.2 Objectives and Scope

The purpose of the survey was to delineate key flora and fauna values within the Survey Area and identify potential environmental sensitivities that may impact the project.

The scope of works includes:

- Undertake a biological field survey comprising a reconnaissance flora survey and basic fauna survey
- Provide a combined technical report detailing the findings of the biological survey
- Include an Assessment against the Ten Clearing Principles
- Include a summary letter to outline any recommendations arising from the biological survey
- Include relevant maps and shapefiles that could be used to support a native vegetation clearing permit application
- Supply a geospatial data package prepared in accordance with Index of Biodiversity Surveys for Assessments (IBSA) requirements.

This report presents the results of the field survey undertaken to support the above objectives.

2 Background

2.1 Protection of Flora, Vegetation and Fauna

Western Australian flora and fauna is protected formally and informally by legislative and non-legislative measures:

Legislative measures:

- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- *WA Biodiversity Conservation Act 2016* (BC Act)
- *WA Environmental Protection Act 1986* (EP Act)
- *WA Biosecurity and Agriculture Management Act 2007* (BAM Act).

Non-legislative measures:

- WA Department of Biodiversity Conservation and Attractions (DBCA) Priority lists for fauna, flora and ecological communities
- Weeds of National Significance (WoNS)
- Recognition of locally significant populations by DBCA.

These protection mechanisms are supported by guidance documents published by the Environmental Protection Authority (EPA) and Department of the Environment:

- Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (Environmental Protection Authority, 2016)
- Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (Environmental Protection Authority, 2020)
- Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999 (Department of the Environment, 2013)
- Survey Guidelines for Australia's Threatened Mammals (Department of Sustainability Environment Population and Communities, 1999)
- Survey Guidelines for Australia's Threatened Reptiles (Department of Sustainability Environment Water Population and Communities, 2011)
- Survey Guidelines for Australia's Threatened Birds Under the Environment Protection And Biodiversity Conservation Act 1999 (Department of the Environment Water Heritage and the Arts, 2010).

2.2 Existing Environment

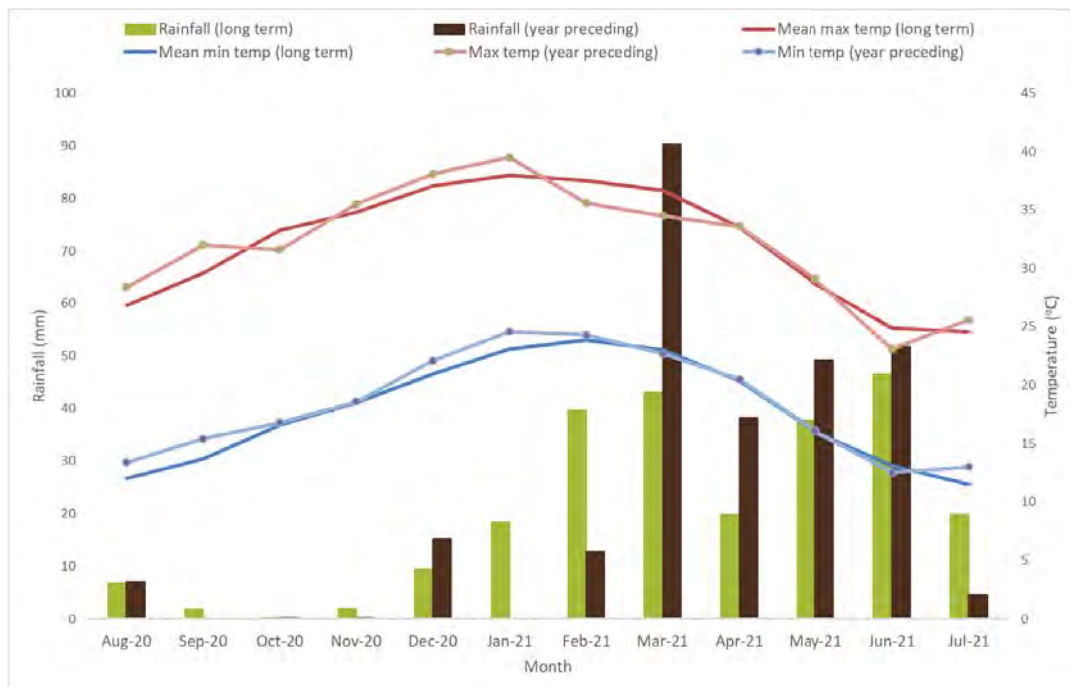
2.2.1 Climate

The closest long-term Bureau of Meteorology weather station with a complete dataset is Learmonth Airport WA (Station 5008), located approximately 38.5 km south of the Survey Area.

Climate statistics were calculated utilising data from the most current climate normal, which is defined as a 30 year interval (Bureau of Meteorology, 2007), where possible. A climate normal is a period long enough to include year-to-year variations while avoiding the influence of longer-term changes in climate (Bureau of Meteorology, 2007).

The long-term mean minimum temperature for Learmonth Airport WA ranges from 11.5°C (July) to 23.9°C (February) (1991 to 2020) and the long-term mean maximum temperature ranges from 24.6°C (July) to 38.0°C (January) (Graph 1) (Bureau of Meteorology, 2021).

The Learmonth Airport WA weather station recorded 269.6 mm of rainfall in the 12 months prior to the survey (August 2020 to July 2021), which is 24.9 mm above the long-term average of 244.7 mm (Bureau of Meteorology, 2021). In the three months prior to the survey (May to July 2021), 105.6 mm of rainfall was recorded, which is 1.6 mm above the long-term average of 104.0 mm for the same time period (Bureau of Meteorology, 2021).



Graph 1: Long term and Monthly Total Rainfall, Maximum and Minimum temperatures for Learmonth Airport WA (5007) (Bureau of Meteorology, 2021).

2.2.2 Interim Biogeographic Regionalisation of Australia

The Interim Biogeographic Regionalisation of Australia (IBRA) divides Australia into 89 bioregions based on major biological, geographical and geological attributes. These bioregions are subdivided into 419 subregions as part of a refinement of the IBRA framework (Department of the Environment and Energy, 2016). The Survey Area occurs within the Carnarvon bioregion and the Cape Range (CAR01) subregion (Figure 2).

The Cape Range (CAR01) subregion is characterised by a mosaic of saline alluvial plains with samphire and saltbush low shrublands, Bowgada low woodland on sandy ridges and plains, Snakewood scrub on clay flats, and tree to shrub steppe over hummock grasslands on and between red sand dune fields (Kendrick and Mau, 2002). The subregion is represented by *Acacia* shrublands over *Triodia* on limestone (*Acacia startii* or *Acacia bivenosa*) and red dunefields, *Triodia* hummock grasslands with sparse *Eucalyptus* trees and shrubs on the Cape Range.

2.2.3 Soil Landscapes Systems

Soil landscapes and land system mapping of Western Australia describes broad soil and landscape characteristics from regional to local scales, ranging from 1:20,000 to 1:250,000 (Department of Primary Industries and Regional Development, 2018). The Survey Area occurs within two land systems (Table 2, Figure 3).

Table 2: Land Systems within the Survey Area

Land System		Description (Department of Primary Industries and Regional Development, 2018)	Extent within the Survey Area*
Name	Code		
Learmonth System	204Le	Sandy outwash plains marginal to the Cape Range, supporting mainly soft spinifex hummock grasslands with scattered <i>Acacia</i> shrubs.	2.2 ha 0.4%
Range System	204Ra	Dissected limestone plateaux, hills and ridges with gorges and steep stony slopes supporting hard spinifex, sparse shrubs and <i>Eucalypts</i> .	533.0 ha 99.6%

* Small discrepancies in extents (i.e., not adding up to the exact area extent of the Survey Area) are due to rounding.

2.2.4 Hydrography

The Survey Area does not intersect any major watercourses or water bodies that are mapped by State Government GIS databases (Department of Water and Environmental Regulation, 2018). The closest watercourses to the Survey Area are two minor tributaries flowing into the Exmouth Gulf, which are located approximately 100 m north and 360 m south of Lot 505, respectively (Figure 3). Drainage lines are present within the Survey Area, especially within Lots 505 and 550.

2.2.5 Broad Vegetation Types

Mapping of pre-European vegetation in Western Australia was completed on a broad scale (1:1,000,000) by Beard (1976). These vegetation types were later refined by Shepherd *et al.* (2002) resulting in 819 vegetation types.

Four broad vegetation system associations are mapped over the Survey Area (Figure 4). Representation of the system associations at a local, regional and state level is shown in Table 3.

- **Cape Range 662:** Spinifex complexes. Hummock grassland with scattered low trees over dwarf shrubs or mixed short grass and spinifex mixed species (*Triodia* spp.). This vegetation association represents 0.3% of the Survey Area.
- **Cape Range 663:** Shrub-steppe. Hummock grassland with scattered shrubs or mallee (*Triodia* spp. *Acacia* spp., *Grevillea* spp. *Eucalyptus* spp.). This vegetation association represents 62% of the Survey Area.
- **Cape Range 664:** Sparse low tree-steppe. Hummock grassland with sparse Eucalypts (bloodwoods and snappy gum, *Triodia* spp., *Corymbia dichromophloia*, *Corymbia opaca*, *Eucalyptus leucophloia*). This vegetation association represents 37.6% of the Survey Area.
- **Cape Range 676:** Samphire. *Tecticornia* spp. communities in saline areas. This vegetation association represents 0.1% of the Survey Area.

Table 3: Broad Vegetation Types within the State, Regional and Local Representation (Government of Western Australia, 2019)

System and Vegetation Association	Extent			
	Pre-European (ha)	Current (ha)	Remaining (%)	Managed in DBCA Lands (%)*
Representation across Western Australia				
Cape Range 662	284,795.92	282,125.59	99.06	7.58
Cape Range 663	30,474.41	25,976.66	85.24	28.93
Cape Range 664	83,774.94	82,154.14	98.07	67.52
Cape Range 676	2,063,413.95	1,963,881.55	95.18	15.44
Representation across the Carnarvon Bioregion				
Cape Range 662	282,709.68	281,679.33	99.64	7.44
Cape Range 663	29,068.26	25,866.32	88.98	28.66
Cape Range 664	83,739.62	82,154.14	98.11	67.52
Cape Range 676	51,983.51	51,232.57	98.56	29.35
Representation across the Cape Range Subregion				
Cape Range 662	282,709.68	281,679.33	99.64	7.44
Cape Range 663	29,068.26	25,866.32	88.98	28.66
Cape Range 664	83,739.62	82,154.14	98.11	67.52
Cape Range 676	29,193.60	28,442.66	97.43	15.87

System and Vegetation Association	Extent			
	Pre-European (ha)	Current (ha)	Remaining (%)	Managed in DBCA Lands (%)*
Representation across the Shire of Exmouth				
Cape Range 662	194,410.67	193,595.74	99.58	6.96
Cape Range 663	30,474.41	25,976.66	85.24	28.93
Cape Range 664	83,774.94	82,154.14	98.07	67.52
Cape Range 676	9,605.60	8,890.36	92.55	48.03

*as a portion of the current extent

2.2.6 Environmentally Sensitive and Conservation Areas

Environmentally Sensitive Areas (ESAs) are declared by the Department of Water and Environmental Regulation (DWER) to prevent the degradation of important environmental values such as Threatened flora, Threatened Ecological Communities (TECs) or significant wetlands. The Survey Area overlaps two mapped ESAs (Figure 5). The ESAs are correlated to Cape Range National Park and Ningaloo Marine Park (Department of Water and Environmental Regulation, 2018). Both ESAs overlap Lots 284 and 550, and one is adjacent to Lot 505.

The Survey Area is not identified within a Conservation Area (Figure 5). The nearest conservation areas are:

- Bundegi Coastal Park (R 40728), located approximately 50 m southeast of Lot 284 and is vested under the Executive Director Department of CALM and the Shire of Exmouth
- Cape Range National Park (R 27288) located approximately 3 km west of Lot 550 and is vested under the Conservation Commission of Western Australia
- Jurabi Coastal Park (R 40729) located approximately 2.4 km north of Lot 284 and is vested under the Executive Director Department of CALM and the Shire of Exmouth
- Ningaloo Marine Park, located approximately 900 m east of Lot 284 and is vested under the Marine Parks and Reserves Authority.

3 Methods

The biological survey documented by this report was undertaken in accordance with relevant EPA and Department of the Environment guidelines (see Section 2.1).

3.1 Desktop Assessment

3.1.1 Literature Review

Background information on the Survey Area and surrounds was compiled prior to the field survey (see Section 2). Historical vegetation mapping (Beard, 1976; Shepherd, Beeston and Hopkins, 2002), land systems mapping (Department of Primary Industries and Regional Development, 2018), and the IBRA classification system (Kendrick and Mau, 2002) were consulted to provide broad contextual knowledge of the vegetation units and habitat likely to be encountered within the Survey Area.

The literature review also considered a selection of biological reports detailing assessments undertaken in the region, that were either publicly available or provided by client:

- Exmouth Lighthouse Resort Borefield – Ecological Survey Report (Strategen JBS&G, 2020), located approximately 2.8 km west of Lot 284
- Learmonth (Exmouth) Line Rebuild Flora and Fauna Survey (GHD, 2019), partially overlapping with Lot 505 and Reserve 51970
- Learmonth Pipeline Fabrication Facility - Detailed Flora, Vegetation and Targeted Survey (360 Environmental Pty Ltd, 2018), located approximately 33.9 km south of Reserve 51970
- Minilya-Exmouth Road Biological Survey, Main Roads WA (GHD, 2016), located approximately 2.0 km south of Reserve 51970.

3.1.2 Database Searches

Database searches were undertaken to compile a list of potential flora and fauna and identify potential conservation significant flora, fauna, and ecological communities within or surrounding the Survey Areas (Table 4). In addition, an EPBC Protected Matters Search (PMST) was undertaken to identify the potential for Matters of National Environmental Significance (MNES) to occur within or surrounding the Survey Area (Department of Agriculture Water and the Environment, 2020b).

The search area for each parameter was varied to reflect distances recommended by DBCA.

Table 4: Database Searches of the Survey Area

Database Name	Date Received	Search Target	Search Area
Threatened and Priority Ecological Communities database search (Department of Biodiversity Conservation and Attractions, 2021c)	18 June 2021	TECs and PECs	100 km buffer around the Survey Area
Threatened and Priority Flora (TPFL) database search (Department of Biodiversity Conservation and Attractions, 2020b)	3 May 2021	Threatened and Priority Flora	100 km buffer around the Survey Area
Western Australian Herbarium flora database search (Department of Biodiversity Conservation and Attractions, 2021e)			
DBCA Threatened and Priority Fauna database search (Department of Biodiversity Conservation and Attractions, 2021d)	4 May 2021	Threatened and Priority Fauna	50 km buffer around the Survey Area
NatureMap (Department of Biodiversity Conservation and Attractions, 2020a)	6 August 2021	Threatened and Priority flora and fauna, and inventory of potential flora and fauna	40 km buffer around the Survey Area
Protected Matters Search Tool (Department of Agriculture Water and the Environment, 2021a)	6 August 2021	Commonwealth listed Threatened flora and fauna and TECs	50 km buffer around the Survey Area

3.1.3 Likelihood of Occurrence

Conservation significant flora and fauna species identified from the desktop assessment were assessed to determine the likelihood of their occurrence within the Survey Area, both prior to and post field survey. The assessment was completed based on the likelihood of occurrence criteria presented in Table 5.

Only species either recorded within the Survey Area or considered as having a high likelihood of occurrence will be discussed in detail. Species classified as having a medium or low likelihood of occurrence based on the above criteria will not be discussed unless a justification for this classification is required.

Fauna species listed as Marine only under the EPBC Act were not included as conservation significant species as the Marine only listed species identified by the desktop assessment were common and widespread, the Marine only listed species do not constitute matters of national environmental significance (MNES) under the EPBC Act, and the Survey Area does not contain any marine habitat.

Table 5: Likelihood of Occurrence Criteria

Rank	Criteria
Previously Recorded	The species has been previously recorded in the Survey Area.
High (Likely to occur)	<ul style="list-style-type: none"> There are existing records of the flora species in close proximity to the Survey Area (within 5 km), and for fauna has been recorded within 10 km of the Survey Area in the last 15 years The species is strongly linked to a specific habitat, which is present in the Survey Area; or The species has more general habitat preferences, and suitable habitat is present.
Medium (May occur)	<ul style="list-style-type: none"> There are existing records of the species from the locality (within 15 km for flora and 20km for fauna), however: <ul style="list-style-type: none"> The species is strongly linked to a specific habitat, of which only a small amount is present in the Survey Area; or The species has more general habitat preferences, but only some suitable habitat is present. There is suitable habitat in the Survey Area, but the species is recorded infrequently in the locality.
Low (Unlikely to occur)	<ul style="list-style-type: none"> The species is linked to a specific habitat, which is absent from the Survey Area; or Suitable habitat is present, however there are no existing records of the species from the locality despite reasonable previous search effort in suitable habitat; or There is some suitable habitat in the Survey Area, however the species is very infrequently recorded in the locality.

3.2 Field Surveys

The reconnaissance flora and vegetation survey, and basic terrestrial vertebrate fauna survey was undertaken by Principal Botanist Ben Eckermann (Flora License FB62000262), Senior Botanist Jason Webb (Flora License FB62000168) and Ecologist Bridget Duncan (Flora License FB62000272) from 20 – 26 August 2021. The survey effort is shown in Figure 6.

3.3 Flora and Vegetation

3.3.1 Establishment of Flora Sites

Relevés comprised unbounded sites of approximately 50 x 50 m where possible, or alternate configurations approximately equating to 2500 m² (as required in areas such as drainage lines and gullies). A comprehensive record of the flora present at the time of sampling was recorded.

Flora site location was recorded using a handheld Garmin GPS unit, with points recorded at the start and finish point of linear relevés, and the central point of circular relevés. At each relevé, the following was recorded using a Fulcrum mobile data collection device:

- Site code
- Date and personnel
- Landform and soil description

- Relevant site descriptors including slope, aspect and fire history
- Inventory of vascular flora including the approximate maximum height and percentage foliar cover for each taxon recorded
- Vegetation description in accordance with the National Vegetation Information System (NVIS), Level 5 'association', whereby the dominant growth form, height, cover and species (three species) for the three traditional strata (upper, mid and ground) are described
- Vegetation condition in accordance with the Eremaean and Northern Botanical Provinces vegetation condition scale (Environmental Protection Authority, 2016), and evidence of disturbance (for example clearing, rubbish, weed incursion and evidence of feral animals and dieback) where present
- Photograph of the vegetation occurring within the site.

A total of 12 relevés were established within the Survey Area. An additional 51 mapping notes were completed to aid vegetation mapping delineation.

3.3.2 Opportunistic Flora

Additional flora taxa observed opportunistically near relevés or while traversing on foot within the Survey Area were also recorded. Where populations of conservation significant flora taxa, Declared Pests or WoNS were encountered, a GPS location and a count of the individuals present was recorded.

3.3.3 Targeted Searching

Prior to the survey, a list of conservation significant flora with the likelihood to occur within the Survey Area was compiled (see Section 3.1.3). Field personnel familiarised themselves with photographs, reference samples and descriptions of these taxa before conducting the survey.

The entire Survey Area was not systematically searched. Personnel actively searched for conservation significant flora species in and around flora sites, while traversing on foot within the Survey Area and in known locations or preferred habitat encountered in the Survey Area.

Where Priority flora taxa were encountered in the field, a GPS location was taken and a count of individuals was recorded, followed by a search in the local vicinity to determine if any other individuals were present nearby and delineate population boundaries where relevant. Specimens of any potential conservation significant flora that could not be identified in the field were collected for identification and lodgement at the Western Australian Herbarium (WAH).

3.3.4 Taxonomy and Nomenclature

Where field identification of plant taxa was not possible, specimens were collected for identification using resources of the WAH. Identification of flora collections was completed by experienced Taxonomist Pierre-Louis de Kock, Senior Botanist Ben Eckermann and Ecologist Bridget Duncan.

The finalised species list was checked against FloraBase (Western Australian Herbarium, 2021) to determine the conservation status and known distribution of each taxon. Introduced species were compared against the current BAM Act Declared Pest list and the WoNS list to determine their control status (Department of Agriculture Water and the Environment, 2021b; Department of Primary Industries and Regional Development, 2021).

Any conservation significant flora taxa, including potential Priority taxa, range extensions and potential new taxa were submitted to the WAH for verification and lodgement. Where relevant, Threatened and Priority Flora Report Forms (TPFRFs) were submitted to DBCA.

3.3.5 Vegetation Unit and Condition Mapping

Broad vegetation and condition mapping was conducted in the field, with boundaries delineated over aerial photography, at a scale of 1:5,000. Broad vegetation units and condition mapping were refined based on taxonomic identification of flora collections, and mapping notes taken during the field survey. Finalised polygons were digitised and produced as electronic mapping data using GIS software.

3.4 Vertebrate Fauna

3.4.1 Fauna Habitat Assessment

Fauna habitat assessments were undertaken throughout the Survey Area to identify fauna habitat values. Habitat assessment locations are shown in Figure 6. The following information was collected at each site using Fulcrum, a mobile data collection app:

- Site photo
- Landform
- Soil type and colour
- Rock types, surface stone cover and size classes
- Key habitat and microhabitat features including leaf litter, logs, burrows, rocky outcrops, rock crevices, hollows, water sources
- Habitat quality, fire history and evidence of disturbance
- General description of vegetation structure.

Fauna habitat mapping was based on a combination of field observations, fauna habitat assessment data and vegetation mapping undertaken by 360 Environmental.

3.4.2 Opportunistic Observations

Opportunistic observations of fauna were recorded throughout the Survey Area. Observations of primary evidence (direct sightings, calls) and secondary evidence (tracks, scats, diggings etc.) were recorded.

3.4.3 Identification and Taxonomy

Terrestrial vertebrate fauna taxa were identified in the field.

Where there was doubt on a species name (through subsequent name changes or taxonomic reviews), an effort was made to determine the current scientific name for each taxon. Taxonomy and nomenclature in this report follows the WA Museum checklist 2021 (Western Australian Museum, 2021) where relevant. The finalised species list was reviewed by Zoologist Poppy (Christina) Walker.

4 Results

4.1 Limitations

Limitations and constraints of the flora, vegetation and fauna survey are detailed below in Table 6.

Table 6: Limitations and Constraints Associated with the Survey

Variable	Degree of Limitation	Potential Constraints on Survey Outcomes
Survey Scope	Partial	<p>The reconnaissance flora and vegetation survey was undertaken in accordance with EPA (Environmental Protection Authority, 2016) and was considered appropriate to support approvals applications.</p> <p>Targeted searching for flora of conservation significance was undertaken, however systematic searches were not feasible. Rather, targeted searching focussed on habitat suitable for P1 and P2 flora.</p> <p>A basic terrestrial vertebrate fauna survey was undertaken. The survey was completed in August, which is considered outside of the recommended season for reptiles, birds and mammals according to the EPA guidance (Environmental Protection Authority, 2020). Amphibian species that breed during autumn and winter are included in this timing, however none were recorded during the survey. The survey timing was considered a limitation for the basic terrestrial vertebrate fauna survey.</p>
Availability of Data	No	All data required to complete the scope of works including regional and local contextual information was available.
Site Access	No	The Survey Area was accessed by vehicle and on foot, except for the southern portion of Reserve 51970, which could not be accessed as this property was fenced. This comprised a paddock with horses, and it was surveyed from the fence line. It was not considered to be a limitation.
Survey Intensity and Resources	No	<p>Twelve relevés were sampled across the Survey Area. An additional 51 mapping notes were undertaken to aid vegetation mapping and delineation.</p> <p>Given the size of the Survey Area, it was not feasible to systematically search the Survey Area. Additional flora species, and populations of conservation significant flora species and weed species may be recorded with additional survey effort.</p> <p>Sufficient time was allocated to the flora and vegetation survey, given the size and complexity of the Survey Area, and the expected level of survey intensity.</p> <p>The survey effort was considered adequate to assess the flora and vegetation values of the Survey Area and provide information required to support approvals applications.</p> <p>A total of 19 fauna habitat assessments were completed during the survey. A detailed or targeted survey may yield additional fauna species.</p>

Variable	Degree of Limitation	Potential Constraints on Survey Outcomes
Experience	No	<p>The flora, vegetation and fauna survey was undertaken by Principal Botanist Ben Eckermann, Senior Botanist Jason Webb, and Ecologist Bridget Duncan. The team has over 20 years' experience conducting surveys of similar scope throughout Western Australia.</p> <p>Identification of flora collections was completed by experienced taxonomist Pierre-Louis de Kock at the WAH. Relevant WAH specialists were consulted for difficult specimens, and any specimens with novel characteristics were submitted to the WAH for formal identification (accessions 9180 and 9184). Identifications were undertaken by WAH taxonomist Michael Hislop.</p>
Timing, weather, season	<p>Not a limitation for the flora and vegetation survey</p> <p>A partial limitation for the fauna survey</p>	<p>The recommended primary survey period for flora and vegetation surveys for the region as per the EPA Technical Guidance occurs 6 – 8 weeks post wet season (March – June).</p> <p>The survey was completed in August, which is outside of the recommended primary survey period. However, many flora taxa were still in flower and could be confidently identified. Therefore, the timing was not considered a limitation for the flora and vegetation survey.</p> <p>The timing was considered outside of the recommended season for reptiles, birds and mammals according to the EPA guidance (Environmental Protection Authority, 2020). The main objective of a basic fauna survey is to delineate fauna habitat values, which is based on vegetation mapping. For these reasons, the timing was considered a partial limitation for the fauna vertebrate terrestrial fauna survey.</p>
Life Forms Sampled	No	<p>The Survey Area was traversed by vehicle and on foot and representative sites of all remnant vegetation was sampled. All flora species encountered within the Survey Area were recorded.</p> <p>A total of 257 vascular flora taxa were recorded from the Survey Area, comprising 94.6% native flora taxa and 5.4% introduced flora taxa.</p> <p>Of the 257 flora taxa recorded, four taxa (1.6%), could not be identified to species level because they were sterile at the time of the survey. This was not considered a constraint as it represented a small portion of the flora sampled.</p> <p>None of the unknown flora taxa collected were analogous to Priority flora taxa identified by the database searches as likely to occur within the Survey Area, however one unconfirmed flora specimen was considered a potential novel taxon.</p> <p>All vertebrate fauna species were readily identified in the field.</p>

Variable	Degree of Limitation	Potential Constraints on Survey Outcomes
Mapping Reliability	Partial	<p>Mapping reliability ranges from high where the area was traversed on foot, to medium and low where the area was not traversed or could not be accessed.</p> <p>Vegetation types were described and mapped based on relevé data and additional mapping notes taken during the field survey. The southern portion of Reserve 51970 could not be accessed due to it being a fenced private property. Two vegetation types (H3 and P7) were described on the basis of mapping notes as no relevés were established in these units in the field. This was not considered to be a limitation for a reconnaissance flora and vegetation survey.</p> <p>High resolution aerial mapping current at the time of the survey was used to differentiate vegetation at a scale of 1:5,000.</p> <p>Fauna habitat mapping was based largely on vegetation mapping and there were no further constraints on mapping reliability.</p>
Disturbances (fire, flood etc.)	No	<p>Areas of disturbance associated with access tracks, motorbike tracks and weeds were recorded but were not a constraint on the results of the survey.</p>
Completeness	No	<p>The survey was considered complete for a reconnaissance flora and vegetation survey, and all vegetation types were surveyed and delineated within the Survey Area.</p> <p>The survey was considered complete for a basic terrestrial vertebrate fauna survey and a minimum of one fauna habitat assessment was completed for each habitat type.</p>

4.2 Flora and Vegetation

4.2.1 Literature Review

The key findings of the flora and vegetation reports reviewed are summarised in Appendix A.

4.2.2 Database Searches

Database searches identified 24 conservation significant flora species occurring within 40 km of the Survey Area (Figure 7, Appendix B), comprising:

- No Threatened species
- One Priority 1 species
- Eleven Priority 2 species
- Ten Priority 3 species
- Two Priority 4 species.

One additional species (*Owenia acidula*, P3) was identified within 2 km by the literature review (Appendix A).

No State or Commonwealth listed TECs or State listed PECs were identified within the Survey Area by the database searches. Two State listed TECs occur within 100 km of the Survey Area (Department of Biodiversity Conservation and Attractions, 2021c) (Figure 8):

- Cape Range Remipede Community (Bundera Sinkhole) (Critically Endangered) – 61 km southwest of Lot 550
- Camerons Cave Troglotic Community (Critically Endangered) – 690 m south of Lot 505.

4.2.3 Likelihood of Occurrence

The pre-survey likelihood of occurrence assessment identified that of the 24 conservation significant flora species identified by the database searches:

- None had previously been recorded within the Survey Area
- Fifteen were considered to have a high likelihood of occurrence
- Five were considered to have a medium likelihood of occurrence
- Four were considered to have a low likelihood of occurrence.

Following the survey, the likelihood of occurrence was re-evaluated and identified that of the 24 conservation significant flora species identified by the database searches:

- Eight were recorded within the Survey Area
- Seven were considered to have a high likelihood of occurrence
- Four were considered to have a medium likelihood of occurrence
- Five were considered to have a low likelihood of occurrence.

The likelihood of occurrence assessment is provided in Appendix C.

4.2.4 Flora Composition

The survey recorded a total of 257 taxa from 153 genera across 58 families (Appendix D). The dominant families were Fabaceae (38 taxa), Poaceae (37 taxa) and Malvaceae (23 taxa). The most dominant genus was Acacia (11 taxa).

4.2.5 Flora of Conservation Significance

4.2.5.1 Threatened or Priority Flora

No Threatened flora species pursuant to the EPBC Act 1999 and/or gazetted as Threatened pursuant to the BC Act 2016 were recorded during the survey.

Eight Priority flora taxa as listed by DBCA were recorded within the Survey Area (Table 7, Figure 9), comprising:

- Three Priority 2 taxa
- Four Priority 3 taxa
- One Priority 4 taxon.

Copies of the Threatened and Priority Flora Report forms submitted to DBCA are provided in Appendix F. A summary of the conservation significant flora recorded within the Survey Area is detailed in Table 7, with each taxon described below.

Table 7: Flora of Conservation Significance within the Survey Area

Taxon (status)	Number of Individuals	Habitat within the Survey Area (Flora site)	Location within the Survey Area		
			Lot 284	Lot 550	Reserve 51970
Priority 2					
<i>Acanthocarpus rupestris</i>	5	Opportunistically recorded in drainage lines		+	
<i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i>	36	Drainage lines with brown-red clay loam sand soils (HER09 and opportunistically)		+	
<i>Tinospora esiangkara</i>	27	Opportunistically recorded in drainage lines and sandy plains	+	+	
Priority 3					
<i>Acacia alexandri</i>	542	Recorded in drainage lines growing on brown-red sandy clay loam (HER08, HER09 and opportunistically)		+	
<i>Corchorus congener</i>	2	Undulating plains with light brown and red clay loam sand over limestone (HER05) and red sandy plains with recemented limestone (HER11)	+		+
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	462	Hilltops and rises with brown-red clay sandy loam soils (HER03, HER10 and opportunistically)		+	+
<i>Grevillea calcicola</i>	4	Drainage lines with brown-red clay loam sand soils (HER09) and opportunistically recorded in rocky limestone gorges		+	
Priority 4					
<i>Brachychiton obtusilobus</i>	26	Opportunistically recorded in rocky limestone gorges		+	

***Acanthocarpus rupestris* (P2)**

Acanthocarpus rupestris (P2) is a rhizomatous, tufted perennial herb to 0.5 m tall that flowers between May and June. The taxon occurs on red sand and on limestone (Western Australian Herbarium, 2021). The WAH has eight specimens lodged with records on the Cape Range peninsula and from Shark Bay (Western Australian Herbarium, 2021).

A total of five individuals of *Acanthocarpus rupestris* (P2) (Plate 1) were recorded within the Survey Area in vegetation type D1, which is described as a limestone drainage line with *Corymbia hamersleyana* isolated trees, various *Acacia* spp. and *Triodia epactia* hummock grasses.



Plate 1: *Acanthocarpus rupestris* (P2) specimen collected from the Survey Area.

***Harnieria kempeana* subsp. *rhadinophylla* (P2)**

Harnieria kempeana subsp. *rhadinophylla* (P2) is an erect or sprawling, spreading, straggly shrub to 1 m tall that flowers between May and September. The taxon occurs on calcareous loam amongst limestone rocks and in creek banks. The WAH has six specimens lodged that are spatially restricted around Exmouth and within the Cape Range National Park.

A total of 36 individuals of *Harnieria kempeana* subsp. *rhadinophylla* (P2) (Plate 2) were recorded within the Survey Area in vegetation type H3. The taxon occurred on limestone rocks along a drainage line and on mid-slopes. *Harnieria kempeana* subsp. *rhadinophylla* (P2) was growing in association with *Acacia* and *Senna* species.



Plate 2: *Harnieria kempeana subsp. rhadinophylla* (P2) habitat (left) and plant (right).

***Tinospora esiangkara* (P2)**

Tinospora esiangkara (P2) is a climber to 2 m tall characterised by large stems with brown, flaky bark. *Tinospora esiangkara* (P2) flowers in July and occurs on pebbly orange-brown calcareous loam on limestone outcrops or ridges near creek banks. The WAH has eight specimens lodged with distribution restricted to the Cape Range peninsula.

A total of 27 individuals of *Tinospora esiangkara* (P2) (Plate 3) were recorded within the Survey Area in vegetation types D1, H3 and P5. The taxon was growing in drainage lines among limestone rocks, on hill slopes and on plains. *Tinospora esiangkara* (P2) was recorded in association with *Corymbia hamersleyana*, *Acacia* spp. and *Melaleuca cardiophylla* shrubs, and *Triodia epactia* hummock grasses.



Plate 3: *Tinospora esiangkara* (P2) habitat (left) and leaves (right).

***Acacia alexandri* (P3)**

Acacia alexandri (P3) is an open or moderately dense, sometimes wispy shrub 1.5 to 3 m tall that flowers in June or between August to September. *Acacia alexandri* (P3) occurs on limestone in stony creeks or steep rocky slopes (Western Australian Herbarium, 2021). The WAH has 24 specimens lodged, with records spatially restricted to the Cape Range peninsula (Western Australian Herbarium, 2021).

More than 500 individuals of *Acacia alexandri* (P3) (Plate 4) were recorded within the Survey Area in vegetation types D1, H2 and H3. The taxon was growing in stony drainage lines and associated limestone hillslopes. *Acacia alexandri* (P3) was recorded growing in association with various *Acacia* and *Triodia* species.



Plate 4: *Acacia alexandri* (P3) habitat (left), leaves and flowers (right).

***Corchorus congener* (P3)**

Corchorus congener (P3) is a spreading shrub to 0.6 m tall that flowers between April and June or August and November. The taxon grows in sand and red sandy loam with limestone on sand dunes and plains. The WAH has 24 specimens lodged, which are distributed across the Carnarvon and Pilbara bioregions (Western Australian Herbarium, 2021).

Two individuals of *Corchorus congener* (P3) (Plate 5) were recorded within the Survey Area in vegetation types P4 and P5, which are described as *Acacia* spp. shrublands over *Triodia epactia* hummock grasslands. Additionally, *Corchorus congener* (P3) was growing in association with various tussock grasses and herbs.



Plate 5: *Corchorus congener* (P3) specimen collected from the Survey Area.

***Eremophila forrestii* subsp. *capensis* (P3)**

Eremophila forrestii subsp. *capensis* (P3) is a sparsely to much-branched shrub to 1.4 m tall that grows on brown rocky soils over limestone on ridges. The WAH has 19 specimens lodged from the Cape Range peninsula.

More than 400 individuals of *Eremophila forrestii* subsp. *capensis* (P3) (Plate 6) were recorded within the Survey Area in vegetation types D1, H1, H2 and H3. The taxon occurred on mid-slopes, hills and gorges on limestone rocks. *Eremophila forrestii* subsp. *capensis* (P3) was growing in association with various *Acacia* and *Triodia* species.



Plate 6: *Eremophila forrestii* subsp. *capensis* (P3) habitat (left), leaves and flower (right).

***Grevillea calcicola* (P3)**

Grevillea calcicola (P3) is a small straggly tree or shrub with several stems to 4 m tall. The taxon flowers in May or between July and August and occurs on limestone hilltops. The WAH has 18 specimens lodged with distribution restricted to the Cape Range peninsula (Western Australian Herbarium, 2021).

Four individuals of *Grevillea calcicola* (P3) (Plate 7) were recorded within the Survey Area in vegetation types D1 and H3. The taxon was growing in association with various *Acacia* species and *Triodia epactia*.



Plate 7: *Grevillea calcicola* (P3) specimen collected within the Survey Area.

***Brachychiton obtusilobus* (P4)**

Brachychiton obtusilobus (P4) is a tree 3.5 to 6 m tall that flowers between August and September. The taxon occurs on skeletal soils in rocky limestone ranges, gorges and occasionally

on sandplains (Western Australian Herbarium, 2021). The WAH has 15 specimens lodged with records distributed along the Cape Range peninsula (Western Australian Herbarium, 2021).

A total of 26 individuals of *Brachychiton obtusilobus* (P4) (Plate 8) were recorded within the Survey Area in vegetation types D1, H2 and H3. The taxon was growing in gorges and limestone breakaways in association with *Ficus brachypoda*.



Plate 8: *Brachychiton obtusilobus* (P4) habitat (left), and leaf (right).

4.2.5.2 Flora of Other Conservation Significance

Flora may be considered of other conservation significance if it represents a range extension, novel taxon, species that play a keystone role in a community, has relic status, is locally endemic, or represents the extent of a species range.

Of the total vascular flora of the Survey Area, 32 taxa may be considered flora of other conservation significance (Figure 9). Of these, 31 represent range extensions of the species distribution (50 km from known location, Appendix D), and one is a potentially novel taxon, which is described below.

Of the 31 taxa representing range extensions, 11 were confirmed by a taxonomist through identification of a specimen. The remaining 20 taxa were identified in the field.

***Sida* sp. Nov**

This taxon was identified as *Sida* sp. Pindar (A. Mitchell 3585), given its resemblance. However, upon further examination, it was noted to have different leaf shape and indumentum. Mike Hislop of the WAH has noted these features are likely to represent an unrecognised taxon, however fruiting material would be required to further investigate this taxon (M. Hislop, pers. comm., 11 November 2021).

Three individuals of *Sida* sp. Nov were recorded from one location in the Survey Area, within Lot 550. The plants were growing on a limestone hilltop of Excellent vegetation condition. *Sida* sp. Nov was recorded in association with *Acacia bivenosa*, *Melaleuca cardiophylla* and *Triodia glabra*.



Plate 9: *Sida* sp. Nov specimen collected within the Survey Area.

4.2.6 Introduced Flora

A total of 14 introduced taxa were recorded within the Survey Area, representing 5.4% of the total taxa recorded (Table 8, Figure 10).

One taxon, **Crotalaria incana* subsp. *incana*, is listed as a Declared Pest at the species level under the BAM Act (Department of Primary Industries and Regional Development, 2021).

Two taxa, **Flaveria trinervia* and **Rumex vesicarius*, are unlisted organisms, which are prohibited entry into Western Australia.

No taxa were listed as WoNS (Department of Agriculture Water and the Environment, 2021b).

Table 8: Introduced Flora Species within the Survey Area

Species	Common Name	Status under BAM Act
<i>*Aerva javanica</i>	Kapok Bush	Permitted – s11
<i>*Asphodelus fistulosus</i>	Onion Weed	Permitted – s11
<i>*Bidens bipinnata</i>	Bipinnate Beggartick	Permitted – s11
<i>*Cenchrus ciliaris</i>	Buffel Grass	Permitted – s11
<i>*Cenchrus setiger</i>	Birdwood Grass	Permitted – s11
<i>*Chloris pumilio</i>	-	Permitted – s11
<i>*Crotalaria incana</i> subsp. <i>incana</i>	Woolly Rattlepod	Declared Pest, Prohibited - s12 at the species level
<i>*Datura leichhardtii</i> subsp. <i>leichhardtii</i>	Native Thornapple	Permitted – s11 at the species level
<i>*Flaveria trinervia</i>	Speedy Weed	Unlisted - s14
<i>*Malvastrum americanum</i>	Spiked Malvastrum	Permitted – s11

Species	Common Name	Status under BAM Act
* <i>Rumex vesicarius</i>	Ruby Dock	Unlisted - s14
* <i>Setaria verticillata</i>	Whorled Pigeon Grass	Permitted – s11
* <i>Sigesbeckia orientalis</i>	Indian Weed	Permitted – s11
* <i>Sonchus oleraceus</i>	Common Sowthistle	Permitted – s11

4.2.7 Unconfirmed Flora

Four specimens (1.6% of the taxa recorded) could not be identified to species level because the taxa were sterile at the time of the survey. All but one of these (Herb sp.) have been assigned a confirmed genus and one (*Thysanotus ?exfimbriatus*) has been tentatively identified to species level.

Two of the unconfirmed flora taxa, *Angianthus* sp. and Herb sp., may represent duplicates of taxa that were confirmed within the Survey Area. One of the unconfirmed flora taxa, *Sida* sp. Nov, was considered a species of conservation interest (Section 4.2.5.2).

None of the unconfirmed flora taxa were analogous to Priority flora taxa identified by the database searches.

4.2.8 Vegetation Types

Eleven vegetation types were described and mapped across three broad landforms (drainage lines; hills; and plains) within the Survey Area (Table 9, Figure 11):

- Three vegetation types were recorded within Lot 284
- Six vegetation types were recorded within Lot 505
- Four vegetation types were recorded within Lot 550
- Five vegetation types were recorded within Reserve 51970.

Detailed site sheets for each quadrat are provided in Appendix F.



4.2.9 Vegetation Condition



Vegetation condition within the Survey Area ranged from Excellent to Degraded, with the majority (57.1%) considered to be in Very Good condition (Figure 12):

- Excellent (102.0 ha / 19.0%)
- Very Good (306.1 ha / 57.1%)
- Good (43.0 ha / 8.0%)
- Poor (62.9 ha / 11.7%)
- Degraded (22.1 ha / 4.1%).



Evidence of disturbance included vehicle access tracks, motorbike tracks, weeds, and litter.



Table 9: Vegetation Types Occurring within the Survey Area


Vegetation Unit and Description*	Total Area, Proportion of the Survey Area	Sites	Vegetation Condition	Photograph
Drainage lines				
<p>D1: <i>Corymbia hamersleyana</i> (and/or <i>Eucalyptus xerothermica</i>) low isolated trees to low open woodland over <i>Acacia alexandri</i>, <i>Acacia tetragonophylla</i> and <i>Acacia bivenosa</i> tall open shrubland to tall shrubland over <i>Senna artemisioides</i> subsp. <i>oligophylla</i>, <i>Tephrosia rosea</i> var. <i>clementii</i> and <i>Senna ferraria</i> low sparse shrubland over <i>Triodia epactia</i> sparse hummock grassland to open hummock grassland with <i>Dichanthium sericeum</i> subsp. <i>humilius</i> isolated tussock grasses</p>	17.0 ha 3.2%	HER08 HER09	Good to Excellent	
Hills				
<p>H1: <i>Corymbia hamersleyana</i> low open woodland over <i>Senna glutinosa</i> subsp. <i>pruinosa</i> and <i>Acacia bivenosa</i> mid open shrubland over <i>Ptilotus obovatus</i> and <i>Corchorus crozophorifolius</i> low open shrubland over <i>Triodia epactia</i> open hummock grassland with *<i>Cenchrus ciliaris</i> open tussock grassland</p>	3.4 ha 0.6%	HER03	Good	

Vegetation Unit and Description*	Total Area, Proportion of the Survey Area	Sites	Vegetation Condition	Photograph
<p>H2: <i>Acacia bivenosa</i> tall sparse shrubland over <i>Melaleuca cardiophylla</i> mid sparse shrubland over <i>Triodia glabra</i> (and/or <i>Triodia wiseana</i>) open hummock grassland to hummock grassland with <i>Goodenia tenuiloba</i>, <i>Haloragis gosseii</i> var. <i>inflata</i> isolated herbs to sparse herbland</p>	156.6 ha 29.2%	HER06 HER07 HER10	Very Good to Excellent	
<p>H3: <i>Melaleuca cardiophylla</i>, <i>Acacia alexandri</i> and <i>Acacia arida</i> tall open shrubland over <i>Triodia epactia</i> (and/or <i>Triodia wiseana</i>) open hummock grassland</p>	144.4 ha 26.9%	Mapping notes	Very Good to Excellent	

Vegetation Unit and Description*	Total Area, Proportion of the Survey Area	Sites	Vegetation Condition	Photograph
Plains				
<p>P1: <i>Corymbia hamersleyana</i> low open woodland over <i>Acacia tetragonophylla</i> tall open shrubland over *<i>Cenchrus ciliaris</i> tussock grassland with <i>Cullen cinereum</i>, <i>Swainsona pterostylis</i> and <i>Erodium cygnorum</i> sparse herbland</p>	4.2 ha 0.8%	HER01	Poor to Very Good	
<p>P2: <i>Acacia synchronicia</i> tall open shrubland over *<i>Cenchrus ciliaris</i> closed tussock grassland with <i>Salsola australis</i> and <i>Ptilotus xerophilus</i> isolated herbs</p>	37.4 ha 7.0%	HER02	Degraded to Good	

Vegetation Unit and Description*	Total Area, Proportion of the Survey Area	Sites	Vegetation Condition	Photograph
<p>P3: <i>Corymbia hamersleyana</i> low isolated trees over <i>Triodia epactia</i> isolated hummock grasses with <i>*Cenchrus ciliaris</i> tussock grassland and <i>Swainsona pterostylis</i> and mixed herbs open herbland</p>	36.5 ha 6.8%	HER04	Degraded to Very Good	
<p>P4: <i>Acacia synchronicia</i>, <i>Acacia bivenosa</i> and <i>Eremophila longifolia</i> tall open shrubland over <i>Triodia epactia</i> open hummock grassland with <i>*Cenchrus ciliaris</i> sparse tussock grassland and <i>Swainsona pterostylis</i> sparse herbland</p>	10.2 ha 1.9%	HER05	Poor to Good	

Vegetation Unit and Description*	Total Area, Proportion of the Survey Area	Sites	Vegetation Condition	Photograph
<p>P5: <i>Acacia tetragonophylla</i>, <i>Exocarpos aphyllus</i> and <i>Acacia bivenosa</i> low to mid sparse shrubland over <i>Ptilotus obovatus</i> low sparse shrubland over <i>Triodia epactia</i> (and/or <i>Triodia glabra</i>) open hummock grassland with *<i>Cenchrus ciliaris</i> and <i>Eriachne mucronata</i> sparse tussock grassland and <i>Goodenia tenuiloba</i> and <i>Ptilotus helipteroides</i> sparse herbland</p>	97.1 ha 18.1%	HER11	Poor to Very Good	
<p>P6: <i>Atriplex bunburyana</i>, <i>Frankenia pauciflora</i> and <i>Surreya diandra</i> low open shrubland over *<i>Cenchrus ciliaris</i> sparse tussock grassland with <i>Sclerolaena recurvicauspis</i> isolated herbs</p>	0.1 ha <0.1%	HER12	Good	

Vegetation Unit and Description*	Total Area, Proportion of the Survey Area	Sites	Vegetation Condition	Photograph
<p>P7: <i>Acacia synchronica</i>, <i>Acacia tetragonophylla</i> and <i>Stylobasium spathulatum</i> open shrubland over <i>Frankenia pauciflora</i>, <i>Sclerolaena diacantha</i> and <i>Atriplex bunburyana</i> low open shrubland over <i>Lawrenzia densiflora</i> and <i>Ptilotus exaltatus</i> herbland</p>	<p>29.0 ha 5.4%</p>	<p>Mapping notes</p>	<p>Poor to Very Good</p>	

*Brackets indicate species that may or may not be present, but were observed as dominant at some of the sites and mapping notes that make up the vegetation type

4.2.10 Vegetation of Conservation Significance

Threatened and Priority Ecological Communities

No vegetation considered representative of any TECs or PECs was recorded within the Survey Area.

Vegetation of Other Conservation Significance

Vegetation may be of significance for a range of reasons, other than a listing as a TEC or a PEC, including (Environmental Protection Authority, 2016):

- Vegetation extent being below a threshold level
- Scarcity
- Unusual species
- Novel combinations of species
- A role as a refuge
- A role as a key habitat for threatened species or large populations representing a significant proportion of the local to regional total population of a species
- Being representative of the range of a unit (particularly a good local and/or regional example of a unit in 'prime' habitat, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range); and/or
- A restricted distribution.

Out of the 11 vegetation types, 10 were considered locally significant as they supported Priority flora taxa, taxa representing range extensions, novel taxa, and/or due to their restricted distribution (Table 10).

Table 10: Locally Significant Vegetation Units in the Survey Area

Vegetation Type	Reasoning for Significance
D1	Supports <i>Acacia alexandri</i> [^] (P3), <i>Acanthocarpus rupestris</i> [^] (P2), <i>Brachychiton obtusilobus</i> [^] (P4), <i>Cassytha filiformis</i> [^] (RE), <i>Eremophila forrestii</i> subsp. <i>capensis</i> [^] (P3), <i>Eriachne tenuiculmis</i> ⁺ (RE), <i>Grevillea calcicola</i> [^] (P3), <i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i> [^] (P2), <i>Paspalidium basicladum</i> ⁺ (RE), <i>Phyllanthus exilis</i> ⁺ (RE), <i>Polygala glaucifolia</i> [^] (RE), <i>Santalum lanceolatum</i> ⁺ (RE), <i>Stemodia viscosa</i> [^] (RE), and <i>Tinospora esiangkara</i> [^] (P2)
H1	Supports <i>Eremophila forrestii</i> subsp. <i>capensis</i> [^] (P3) and <i>Eremophila latrobei</i> subsp. <i>latrobei</i> [^] (RE). Vegetation unit H1 extends to the south of Reserve 51970 and therefore it is not considered to be locally restricted, despite its Survey Area cover being 0.6%
H2	Supports <i>Acacia alexandri</i> [^] (P3), <i>Brachychiton obtusilobus</i> [^] (P4), <i>Dactyloctenium radulans</i> ⁺ (RE), <i>Eremophila forrestii</i> subsp. <i>capensis</i> [^] (P3), <i>Euphorbia boophthona</i> ⁺ (RE), <i>Phyllanthus exilis</i> ⁺ (RE), <i>Polygala glaucifolia</i> [^] (RE), <i>Ptilotus auriculifolius</i> ⁺ (RE), <i>Sida</i> sp. <i>Nov</i> [^] (SOI) and <i>Tephrosia supina</i> [^] (RE)

Vegetation Type	Reasoning for Significance
H3	Supports <i>Acacia alexandri</i> [^] (P3), <i>Brachychiton obtusilobus</i> [^] (P4), <i>Eremophila forrestii</i> subsp. <i>capensis</i> [^] (P3), <i>Euphorbia australis</i> var. <i>subtomentosa</i> [^] (RE), <i>Grevillea calcicola</i> [^] (P3), <i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i> [^] (P2), <i>Sesbania cannabina</i> ⁺ (RE), <i>Solanum horridum</i> ⁺ (RE), <i>Stemodia viscosa</i> [^] (RE), and <i>Tinospora esiangkara</i> [^] (P2)
P1	Supports <i>Cullen cinereum</i> [^] (RE). Vegetation unit P1 was restricted, covering 0.8% of the Survey Area. This vegetation type extends east and south of Reserve 51970, however these areas appear to be in Poor condition due to historical clearing, vehicle access tracks and proximity to urban dwellings. The extent of this vegetation type outside of the Survey Area appears to have been reduced due to disturbances. For these reasons, the vegetation unit is considered locally restricted
P2	Supports <i>Euphorbia boophthona</i> ⁺ (RE).
P3	Supports <i>Acacia colei</i> var. <i>colei</i> ⁺ (RE), <i>Cullen cinereum</i> [^] (RE), <i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i> ⁺ (RE), <i>Eremophila forrestii</i> subsp. <i>capensis</i> [^] (P3), <i>Heliotropium diversifolium</i> ⁺ (RE), <i>Heliotropium inexplicitum</i> ⁺ (RE), <i>Notoleptopus decaisnei</i> ⁺ (RE) and <i>Polygala glaucifolia</i> [^] (RE)
P4	Supports <i>Corchorus congener</i> [^] (P3), <i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i> ⁺ (RE), <i>Euphorbia boophthona</i> ⁺ (RE) and <i>Hibiscus sturtii</i> var. <i>grandiflorus</i> ⁺ (RE)
P5	Supports <i>Acacia sibilans</i> [^] (RE), <i>Corchorus congener</i> [^] (P3), <i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i> ⁺ (RE), <i>Euphorbia boophthona</i> ⁺ (RE), <i>Hakea chordophylla</i> ⁺ (RE), <i>Heliotropium inexplicitum</i> ⁺ (RE), <i>Lawrenia densiflora</i> [^] (RE), <i>Polycarpea corymbosa</i> var. <i>corymbosa</i> ⁺ (RE), <i>Polygala glaucifolia</i> [^] (RE), <i>Schizachyrium fragile</i> [^] (RE), <i>Senna glutinosa</i> subsp. <i>xluerssenii</i> ⁺ (RE), <i>Solanum horridum</i> ⁺ (RE), <i>Tephrosia supina</i> [^] (RE), <i>Tinospora esiangkara</i> [^] (P2) and <i>Yakirra australiensis</i> var. <i>australiensis</i> ⁺ (RE)
P6	Vegetation unit P6 was highly restricted as it covered less than 0.1% of the Survey Area. This vegetation type extends to the east of Lot 284 and therefore it is not considered to be locally restricted
P7	Supports <i>Lawrenia densiflora</i> [^] (RE)

[^] Indicates the taxon was collected and identified by a taxonomist of the WAH

⁺ Indicated the taxon was identified in the field

4.2.11 Groundwater Dependent Ecosystems

Most vegetation in the Survey Area comprised xerophytic species, whose dependence on groundwater is virtually negligible. One vadophyte or facultative phreatophyte, *Eucalyptus xerothermica*, was recorded from vegetation type D1. Vadophytes rely on sources of soil moisture such as precipitation, and their dependence on groundwater fluctuates from low to moderate (Onshore Environmental, 2013; Rio Tinto Iron Ore, 2018). *Eucalyptus xerothermica* is drought tolerant but susceptible to decline when groundwater becomes limiting (Muir Environmental, 1995). Occurrence alone does not confirm the presence of a ground water dependent ecosystem (GDE), rather further investigation on groundwater levels will determine whether vegetation type D1 is representative of a potential GDE.

4.3 Vertebrate Fauna

4.3.1 Literature Review

The key findings of the literature review are summarised in Appendix A.

4.3.2 Database Searches

Database searches identified 67 conservation significant terrestrial vertebrate fauna species potentially occurring within the Survey Area, comprising:

- Sixty bird species
- Three mammal species
- Four reptile species
- No amphibian species.

The results of the DBCA Threatened and Priority Fauna database search are mapped in Figure 13. Database searches are displayed in their entirety in Appendix B.

DBCAs records located in the vicinity of each Survey Area are displayed in Table 11.

Table 11: DBCA records located within (x) and within 1 km (+) of each Survey Area.

Taxa	Conservation Status		Survey Area			
	State	Federal	Lot 284	Lot 550	Lot 505	Reserve 51970
Terrestrial Vertebrate Fauna						
<i>Actitis hypoleucos</i> (Common Sandpiper)	IA	MI, MA				+
<i>Chlidonias leucopterus</i> (White-winged Black Tern)	IA	MI, MA				+
<i>Hydroprogne caspia</i> (Caspian Tern)	IA	MI, MA				+
<i>Pandion cristatus</i> (Eastern Osprey)	IA	MI, MA	+			+
<i>Petrogale lateralis lateralis</i> (Black-footed Rock-wallaby)	EN	EN		+		
<i>Phaethon rubricauda</i> (Red-tailed Tropicbird)	P4, IA	MI, MA			+	
<i>Thalasseus bergii</i> (Crested Tern)	IA	MI, MA				+
Invertebrate and Aquatic Fauna						
<i>Indohya damocles</i> (Cameron's Cave Pseudoscorpion)	CR				+	+
<i>Milyeringa veritas</i> (Cave Gudgeon, Blind Gudgeon)	VU	VU		x	+	+
<i>Stygiochiropus isolatus</i> (stygiochiropus millipede (Cape Range))	VU			+		
<i>Stygiochiropus peculiaris</i> (Cameron's Cave Millipede)	CR				+	+

4.3.3 Likelihood of Occurrence

The likelihood of occurrence assessment within the Survey Area for conservation significant fauna species identified by the databases searches found that:

- Three species had a high likelihood of occurrence
- Five species had a medium likelihood of occurrence
- Fifty-nine species had a low likelihood of occurrence.

The results of the likelihood of occurrence assessment are presented in Appendix G.

Species listed as Marine only under the EPBC Act, such as the Black Winged Stilt (*Himantopus himantopus*), Australian Pelican (*Pelecanus conspicillatus*), Rainbow Bee-eater (*Merops ornatus*) etc, as well as marine dependent species including whales, dolphins, turtles, and sea snakes have been excluded from the likelihood of occurrence list as there is no marine habitat present within the Survey Area.

Lot 284

No conservation significant fauna taxa were considered to have a high likelihood of occurrence in Lot 284.

Three fauna taxa were deemed to have a medium likelihood of occurrence in Lot 284:

- *Aprasia rostrata* (Ningaloo Worm Lizard)
- *Falco peregrinus* (Peregrine Falcon)
- *Lerista allochira* (Cape Range Slider).

Lot 550

Three fauna taxa were deemed to have a high likelihood of occurrence in Lot 550:

- *Diplodactylus capensis* (Cape Range Stone Gecko)
- *Glareola maldivarum* (Oriental Pratincole)
- *Petrogale lateralis lateralis* (Black-footed Rock-wallaby).

Three fauna taxa were deemed to have a medium likelihood of occurrence in Lot 550:

- *Charadrius veredus* (Oriental Plover)
- *Falco peregrinus* (Peregrine Falcon)
- *Rhinonictes aurantia* (Pilbara Leaf-nosed Bat).

Lot 505

One fauna taxon, *Glareola maldivarum* (Oriental Pratincole), was deemed to have a high likelihood of occurrence in Lot 505.

Two fauna taxa were deemed to have a medium likelihood of occurrence in Lot 505:

- *Charadrius veredus* (Oriental Plover)
- *Falco peregrinus* (Peregrine Falcon).

Reserve 51970

One fauna taxon, *Glareola maldivarum* (Oriental Pratincole), was deemed to have a high likelihood of occurrence in Reserve 51970.

Two fauna taxa were deemed to have a medium likelihood of occurrence in Reserve 51970:

- *Charadrius veredus* (Oriental Plover)
- *Falco peregrinus* (Peregrine Falcon).

4.3.4 Fauna Habitat

Seven fauna habitats were identified and mapped within the Survey Area (Figure 14). Habitat condition varied from High quality to Disturbed throughout the Survey Area, with the most prolific disturbances being weeds, litter and vehicle tracks.

A description, extent within the Survey Area and a representative photo is provided for each fauna habitat in Table 12. Small discrepancies in fauna habitat extents (i.e., not adding up to the exact area extent of the Survey Area) are due to rounding. Fauna habitat mapping is presented in Figure 14 and site sheets for each habitat assessment are shown in Appendix H.

4.3.4.1 Lot 284

Two fauna habitats were identified and mapped within the Survey Area. Habitat condition was of High quality for the majority of the Survey Area, however, the eastern side had a significant patch of Good and Disturbed quality habitat. Disturbances included weeds, litter and vehicle tracks.

4.3.4.2 Lot 550

Three fauna habitats were identified and mapped within the Survey Area. Habitat was of High quality throughout the majority of the Survey Area. A small patch of Good and Disturbed habitat existed in the northeast corner of the Survey Area, disturbances in this area included weeds, litter and vehicle tracks.



4.3.4.3 Lot 505



Five fauna habitats were identified and mapped within the Survey Area. Habitat condition was of High quality for the majority of the Survey Area, however, the eastern side, closest to existing buildings and infrastructure was of Good and Disturbed quality. Disturbances included weeds, litter and vehicle tracks.



4.3.4.4 Reserve 51970


Four fauna habitats were identified and mapped within the Survey Area. Habitat condition was Disturbed for the majority of the Survey Area, with an area of Good quality to the southwest. Disturbances included weeds, litter and vehicle tracks.

Table 12: Fauna Habitat Type Descriptions with the Survey Area

Fauna Habitat	Total Area, Proportion of the Survey Area	Habitat Description	Representative Photo
Drainage line/Creek	17.0 ha 3.2%	<p>Calcrete and limestone slopes and gullies with thin soils, shallow bedrock and exposed rock faces. Vegetation consists of isolated <i>Corymbia hamersleyana</i> and/or <i>Eucalyptus xerothermica</i> trees over <i>Acacia</i> shrubland and <i>Triodia epactia</i> hummock grassland.</p> <p>Trees, shrubs and grasses provide shelter, refuge and nesting opportunities for birds, mammals, and reptiles. Microhabitats include <i>Triodia</i> hummocks and rock slopes with abundant crevices that provide shelter for a variety of species. Small rock faces containing shallow overhangs were occasionally observed.</p>	
Hills (Open Woodland over Tussock Grassland)	3.4 ha 0.6%	<p>Calcrete and limestone hills with <i>Corymbia hamersleyana</i> open woodland over <i>Acacia</i> and <i>Senna</i> shrubland, <i>Triodia epactia</i> hummock grassland and *<i>Cenchrus ciliaris</i> tussock grassland.</p> <p>Trees, shrubs and grasses provide shelter, refuge and nesting opportunities for birds, mammals, and reptiles. Microhabitats include <i>Triodia</i> hummocks and rock crevices that provide shelter for a variety of species.</p>	

Fauna Habitat	Total Area, Proportion of the Survey Area	Habitat Description	Representative Photo
Hills (Shrubland over Hummock Grassland)	301.0 ha 56.2%	<p>Calcrete and limestone hills with <i>Melaleuca cardiophylla</i> and <i>Acacia</i> shrubland over <i>Triodia epactia</i>, <i>Triodia glabra</i> and/or <i>Triodia wiseana</i> hummock grassland.</p> <p>Shrubs and grasses provide shelter, refuge and nesting opportunities for birds, mammals, and reptiles. Microhabitats include <i>Triodia</i> hummocks and rock crevices that provide shelter for a variety of species.</p>	
Plains (Woodland)	40.7 ha 7.6%	<p><i>Corymbia hamersleyana</i> open woodland over <i>Acacia</i> shrubland or <i>Triodia epactia</i> isolated hummocks, *<i>Cenchrus ciliaris</i> tussock grassland and mixed herbs.</p> <p>Trees, shrubs and grasses provide shelter, refuge and nesting opportunities for birds, mammals, and reptiles. Microhabitats include <i>Triodia</i> hummocks that provide shelter for a variety of small fauna species.</p>	

Fauna Habitat	Total Area, Proportion of the Survey Area	Habitat Description	Representative Photo
Plains (Shrubland over Tussock Grassland)	107.2 ha 20.0%	<p><i>Acacia synchronicia</i> shrubland over *<i>Cenchrus ciliaris</i> tussock grassland.</p> <p>Shrubs and grasses provide shelter, refuge and nesting opportunities for birds, mammals, and reptiles.</p>	
Plains (Shrubland over Hummock Grassland)	37.4 ha 7.0%	<p><i>Acacia</i> shrubland over <i>Triodia epactia</i> and/or <i>Triodia glabra</i> hummock grassland and *<i>Cenchrus ciliaris</i> tussock grassland.</p> <p>Shrubs and grasses provide shelter, refuge and nesting opportunities for birds, mammals, and reptiles. Microhabitats include <i>Triodia</i> hummocks that provide shelter for a variety of small fauna species.</p>	

Fauna Habitat	Total Area, Proportion of the Survey Area	Habitat Description	Representative Photo
Plains (Shrubland with <i>Atriplex</i> and <i>Frankenia</i>)	29.1 ha 5.4%	<p>Shrublands containing <i>Atriplex</i>, <i>Frankenia</i> and <i>Sclerolaena</i>, some <i>Acacia</i> shrubs and *<i>Cenchrus ciliaris</i> tussock grassland in parts.</p> <p>Shrubs and grasses provide shelter, refuge and nesting opportunities for birds, mammals, and reptiles.</p>	

4.3.5 Fauna Records

The terrestrial vertebrate fauna survey recorded a total of 20 fauna taxa from 15 families, summarised in Table 13. A detailed vertebrate fauna inventory is presented in Appendix I.

Table 13: Overview of Vertebrate Fauna Taxa Recorded

Fauna group	Number of taxa	Number of families
Birds	15	12
Mammals	3	2
Reptiles	3	2
Amphibians	0	0
Total	20	15

4.3.5.1 Lot 284

The terrestrial vertebrate fauna survey recorded a total of eight fauna taxa from seven families within Lot 284. The inventory of fauna recorded is summarised in Table 14.

Table 14: Overview of Vertebrate Fauna Taxa Recorded (Lot 284)

Family	Scientific Name	Common Name	Recording Method
Cracticidae	<i>Cracticus nigrogularis</i>	Pied Butcherbird	Sighting
	<i>Gymnorhina tibicen</i>	Australian Magpie	Sighting
Oreoicidae	<i>Oreoica gutturalis</i>	Crested Bellbird	Call
Estrildidae	<i>Taeniopygia guttata</i>	Zebra Finch	Sighting
Meliphagidae	<i>Gavicalis virescens</i>	Singing Honeyeater	Sighting
Phasianidae	<i>Coturnix ypsilophora</i>	Brown Quail	Sighting
Macropodidae	<i>Osphranter</i> sp.	N/A	Scat
Varanidae	<i>Varanus</i> sp.	N/A	Diggings

4.3.5.2 Lot 550

The terrestrial vertebrate fauna survey recorded a total of nine fauna taxa from five families within Lot 550. The inventory of fauna recorded is summarised in Table 15.

Table 15: Overview of Vertebrate Fauna Taxa Recorded (Lot 550)

Family	Scientific Name	Common Name	Recording Method
Accipitridae	<i>Haliastur sphenurus</i>	Whistling Kite	Call, sighting
Cacatuidae	<i>Cacatua sanguinea</i>	Little Corella	Sighting
	<i>Eolophus roseicapilla</i>	Galah	Sighting
Meliphagidae	<i>Gavicalis virescens</i>	Singing Honeyeater	Sighting

Family	Scientific Name	Common Name	Recording Method
Pomatostomidae	<i>Pomatostomus superciliosus</i>	White-browed Babbler	Call
Psittacidae	<i>Barnardius zonarius</i>	Australian Ringneck	Sighting
Macropodidae	<i>Osphranter robustus</i>	Euro	Sighting
	<i>Osphranter</i> sp.	N/A	Scat
Scincidae	<i>Ctenotus</i> sp.	N/A	Sighting

4.3.5.3 Lot 505

The terrestrial vertebrate fauna survey recorded a total of three fauna taxa from three families within Lot 505. The inventory of fauna recorded is summarised in Table 16.

Table 16: Overview of Vertebrate Fauna Taxa Recorded (Lot 505)

Family	Scientific Name	Common Name	Recording Method
Cacatuidae	<i>Eolophus roseicapilla</i>	Galah	Sighting
Columbidae	<i>Ocyphaps lophotes</i>	Crested Pigeon	Sighting
Varanidae	<i>Varanus giganteus</i>	Perentie	Sighting

4.3.5.4 Reserve 51970

The terrestrial vertebrate fauna survey recorded a total of three fauna taxa from three families within Reserve 51970. The inventory of fauna recorded is summarised in Table 17.

Table 17: Overview of Vertebrate Fauna Species Recorded (Reserve 51970)

Family	Scientific Name	Common Name	Recording Method
Equidae	<i>Equus ferus caballus</i>	Horse (Domesticated)	Sighting
Meliphagidae	<i>Gavicalis virescens</i>	Singing Honeyeater	Call
Monarchidae	<i>Grallina cyanoleuca</i>	Magpie-lark	Sighting

4.3.6 Conservation Significant Fauna

No fauna species of conservation significance (Threatened or Priority), or evidence of these species such as tracks, scats, nest, diggings, burrows or direct sightings were recorded within or directly surrounding the Survey Area.

5 Discussion

5.1 Flora and Vegetation

5.1.1 Flora Composition

The suite of flora taxa recorded during the survey is considered typical for the respective areas (Beard 1976) and aligns with the database search results obtained.

Rainfall recorded for the three months prior to the survey was considered within the expected range for the bioregion. Despite the survey being undertaken outside of the recommended primary survey period, many flora taxa were still in flower and could be confidently identified. Floristic diversity was considered high, however additional annual and ephemeral species may be recorded after significant rainfall.

5.1.2 Survey Adequacy

The Survey Area was sampled with 12 relevés and an additional 51 mapping notes. Of the 11 vegetation types defined, two (H3 and P7) were not sampled through relevés and were defined on the basis of mapping notes only; these two vegetation types were accessible on foot, and representative sites could be established with additional survey effort. The flora and vegetation survey effort was in accordance with the scope of works, and in accordance with EPA guidelines for a reconnaissance flora and vegetation survey in the Carnarvon bioregion (Environmental Protection Authority, 2016).

The inventory of vascular flora, and records of conservation significant flora and weed species was compiled using site data and opportunistic observations made while traversing between sites and during targeted searching within potential habitat. The entire Survey Area was not systematically searched, and therefore additional flora taxa, and records of conservation significant flora and weed species may be recorded with additional survey effort.

5.1.3 Flora of Conservation Significance

No Threatened flora species pursuant to the EPBC Act 1999 and/or gazetted as Threatened Flora pursuant to the BC Act 2016 were identified by the database searches or recorded within the Survey Area.

A total of eight Priority flora taxa were recorded within the Survey Area. None of the Priority flora recorded during the survey represented range extensions.

5.1.3.1 Flora of Other Conservation Significance

Thirty-one taxa recorded within the Survey Area represent potential range extensions of >50 km from a known record.

One taxon, *Sida* sp. Nov, recorded within the Survey Area is a potentially novel taxon. This taxon was not identified as conservation significant in the field and therefore it was not targeted throughout the survey. As a result, *Sida* sp. Nov was recorded at a single location within the Survey Area, and more individuals may be recorded with additional survey effort. Although this taxon is novel and carries no state listing, it should be treated as a conservation significant species until confirmed otherwise.

5.1.4 Likelihood of Occurrence

Of the 24 Priority flora identified by the database searches, eight were recorded from the Survey Area. Of the remaining 16 taxa, seven were considered to retain a high likelihood of occurrence:

- *Calandrinia* sp. Cape Range (F. Obbens FO 10/18) (P2) was recorded 6.7 km from the Survey Area, growing in red-brown sandy clay loam on skeletal soils between rocks over limestone. It is possible that this small and cryptic taxon would be present in the low hills between rock crevices.
- *Cucumis* sp. Barrow Island (D.W. Goodall 1264) (P2) is a herbaceous vine that grows on red sandy loams on sandplain swales, footslopes of basalt, limestone plateau and calcrete slopes. It was recorded 8.1 km from the Survey Area, and it is possible that this taxon would occur within the Survey Area, particularly in Lots 505 and 550.
- *Eremophila occidentis* (P2) was recorded 11.8 km from the Survey Area. This taxon is a shrub to 1.5 m tall that flowers between August and September. It grows on orange or red-brown deep sands on limestone ranges, dunes and sandplains. It is possible that this shrub would occur within the Survey Area, particularly in Lot 284 and Reserve 51970.
- *Tephrosia* sp. North West Cape (G. Marsh 81) (P2) is a small herb with orange flowers that occurs on orange sands and red-brown clay loam on limestone outcrops and rocks. This taxon was recorded 1.6 km from the Survey Area, and it is possible that it would occur in the hills and gullies of the Survey Area, particularly in Lot 550.
- *Acacia startii* (P3) is a dense, rounded, much-branched shrub to 2 m high that flowers between July and August. It occurs on calcareous loam with limestone pebbles on stony hills and along watercourses. The taxon was recorded 10.9 km from the Survey Area. It is possible that this taxon would occur within the Survey Area in the drainage and hills landforms.
- *Phyllanthus fuernrohrii* (P3) was recorded 5.4 km from the Survey Area, growing in sand over limestone along a creek bank and on limestone cliffs. This taxon is a low shrub that flowers in February or May to September, and it may occur in the drainage and hills landforms of the Survey Area.
- *Stackhousia umbellata* (P3) is a spreading perennial herb to 0.7 m high that flowers between May and August. The WAH has a total of 21 records of *Stackhousia umbellata*, the nearest approximately 3.7 km from the Survey Area. This taxon grows on sandy soils on limestone, and it may occur across the Survey Area. All *Stackhousia* encountered within the Survey Area were checked, however were all identified as *Stackhousia* sp. Mid west coastal (D & B Bellairs 6561).

A further four taxa were considered to have a medium likelihood of occurrence due to presence of habitat and records within 50 km, and the remaining five were considered to have a low likelihood of occurring due to no habitat within the Survey Area, and/or very distant records. Given the floristic diversity of the drainage lines (vegetation type D1), there is a high likelihood that more species would be recorded with more intense surveys, including some of conservation significance.

5.1.5 Introduced Flora

Fourteen introduced taxa were recorded within the Survey Area (5.4% of recorded taxa); one is listed as a DP, and two are unlisted. The remaining introduced taxa have a legal status of Permitted – s11, and do not have an assigned control category.

Weed species richness and abundance was greatest on vehicle access tracks due to the area being used for recreational four-wheel driving and motorbike use. *Bidens bipinnata* was present in high abundance along every drainage channel surveyed, likely spread by rainfall and fauna. It is expected that any additional surveys and searches through the Survey Area would record more weed locations, particularly along drainage lines, vehicle access tracks and within Lot 284, which was partially accessed due to time constraints.

5.1.6 Vegetation Types

No vegetation representative of any TECs or PECs was recorded in the Survey Area.

Mapping reliability ranged from high in areas where flora sites and mapping notes were completed within intact vegetation, to moderate or low in areas that were not traversed, such as:

- The southern portion of Reserve 51970 was not able to be surveyed due to it being a fenced private property, therefore map notes were completed from the fence line
- Lot 284 was partially traversed due to time constraints; however, aerial imagery indicates the area having vegetation consistent with the mapping notes completed in the field.

Three broad landforms (drainage lines; hills; and plains) were recorded within the Survey Area. Vegetation within the Survey Area was representative of existing broad scale vegetation and soil and land system mapping for the area.

Drainage lines (D1)

This landform was located across Lots 505 and 550, with the majority being in the latter. Drainage lines comprised deep gullies in the central and western portion of Lot 550 and low lying creeklines in Lot 505 and the eastern portion of Lot 550. Drainage lines were characterised by isolated trees of *Corymbia hamersleyana* or *Eucalyptus xerothematica*, various *Acacia* and *Senna* shrubs, *Triodia epactia* hummock grasses, and *Dichanthium sericeum* subsp. *humilius* isolated tussock grasses. This landform comprised limestone and calcrete rocks over brown-red clay loam sand soils.

Hills (H1, H2 and H3)

A large portion of the Survey Area comprised rocky limestone and calcrete hills and slopes, with red-brown clay loam sand. Hills were present on Lots 505 and 550, and on Reserve 51970. Hill tops were characterised by *Acacia bivenosa* and *Melaleuca cardiophylla* shrubs over *Triodia* hummock grassland, dominated by *Triodia glabra* or *Triodia wiseana*. Slopes were dominated by various *Acacia* species and *Triodia epactia* hummock grasses. Trees such as *Corymbia hamersleyana* were present only in vegetation type H1 on a low calcrete rise.

Plains (P1, P2, P3, P4, P5, P6 and P7)

Plains were present across the Survey Area, with the majority being in Reserve 51970. Plains were characterised by the presence of limestone, calcrete, quartz and carbonate sediments over brown-red clay loam sand or red sand soils. The vegetation on the plains of Lots 505, 550 and Reserve 51970 was represented by isolated trees to open woodlands of *Corymbia hamersleyana* (vegetation types P1 and P3) over *Acacia* species and tussock grasslands dominated by *Cenchrus ciliaris*. A portion of the plains on Lot 284 (vegetation types P6 and P7) were represented by chenopods such as *Atriplex bunburyana* and *Sclerolaena diacantha*, and other small shrubs (*Frankenia pauciflora* and *Surreya diandra*).

5.2 Vertebrate Fauna

5.2.1 Fauna Habitat

The fauna habitats that occur within the Survey Area provide a range of values to fauna as refuge, foraging and breeding habitat. All fauna habitats identified in the Survey Area during the field survey are common throughout both the surrounding remnant vegetation areas and the overall bioregion and subregion. The seven broad fauna habitats identified within the Survey Area are typical of the Carnarvon bioregion and consistent with habitats identified by previous studies in the region (GHD, 2016, 2019; 360 Environmental Pty Ltd, 2018; Strategen JBS&G, 2020). At least one fauna habitat assessment was conducted within each habitat type.

The Drainage line/Creek, Hills (Open Woodland over Tussock Grassland) and Hills (Shrubland over Hummock Grassland) habitats are high value to a number of conservation significant fauna. Numerous shallow caves and overhangs provide habitat for the Black-footed Rock-wallaby (Endangered), and potential roosting habitat for bat species such as the Pilbara Leaf-nosed Bat (Vulnerable), although particularly deep caves that offer the necessary microclimate for large Pilbara Leaf-Nosed Bat roosts were not observed within the Survey Area. The tussock grasses on limestone substrate found in these habitats are also preferred by the Cape Range Stone Gecko (Priority 2) and Cape Range Slider (Priority 3). The Peregrine Falcon (Other Specially Protected) may find nesting opportunities in *Eucalyptus* and *Corymbia* trees and larger rocky outcrops.

The Drainage line/Creek habitats are valuable for their role as an ecological linkage, as the habitat provides continuous corridors of vegetation cover that allow fauna to traverse large distances. These habitats may also occasionally flood, providing a temporary water source for fauna species.

Habitat condition varied throughout the Survey Area. Large portions of the Survey Area were of High Quality, but some areas were of Good and Disturbed quality having been impacted by weeds, litter and vehicle tracks.

5.2.2 Conservation Significant Fauna

5.2.2.1 Birds

Oriental Plover (*Charadrius veredus*) – Migratory, Marine

The Oriental Plover typically prefers grasslands and thinly vegetated plains, and open areas such as recently burnt country and heavily grazed pastures. During the hottest times of the day large flocks can be found on areas of wet ground associated with wetlands (Menkhorst *et al.*, 2017). As this species breeds in China and Mongolia, the Survey Area would be used for foraging only.

The Oriental Plover was not recorded during the survey, but database searches show historical records of this species 4 km from Reserve 51970, Lot 505 and Lot 550 Survey Areas. The Plains habitats may be used by the species.

Oriental Pratincole (*Glareola maldivarum*) – Migratory, Marine

The Oriental Pratincole typically prefers plains, shallow wet and dry edges of open bare wetlands and tidal mudflats and beaches for habitat (Pizzey and Knight, 2013). As this species breeds in Pakistan, India and parts of south-east Asia, the Survey Area would be used for foraging only (Pizzey and Knight, 2013).

The Oriental Pratincole was not recorded during the survey, but database searches show several recent records of this species 2 km from Reserve 51970, Lot 505 and Lot 550 Survey Areas, suggesting that it is highly likely to occur in the Survey Area. The Plains habitats may be used by the species.

Peregrine Falcon (*Falco peregrinus*) – Other Specially Protected

The Peregrine Falcon is an uncommon but wide-ranging bird across Australia (Barrett *et al.*, 2003). It occurs mainly along rivers and ranges as well as wooded watercourses and lakes. It nests primarily on cliffs, granite outcrops and quarries, although is also known to occupy existing raptor and corvid stick nests (Menkhorst *et al.*, 2017). The diet of the Peregrine Falcon has been well studied and primarily includes flocking species such as parrots, pigeons and on the east coast, European Starlings (Olsen and Fuentes, 2008).

The Peregrine Falcon typically nests on cliff ledges or in refurbished nests built by other raptors or corvids (Pizzey and Knight, 2013) and may therefore use the Drainage line/Creek habitat for breeding, particularly major drainage lines with steep gullying and rockfaces. All habitats within the Survey Area may be used for hunting.

5.2.2.2 Mammals

Black-footed Rock-wallaby (*Petrogale lateralis lateralis*) – Endangered

The Black-footed Rock-wallaby has widely scattered populations through central and western Australia and some coastal islands of Western and Southern Australia. The species is well known to avoid human interaction and is cryptic in nature, never venturing far from rock shelter and preferring larger gorges and cave systems with little disturbance (Menkhorst and Knight, 2004).

The Black-footed Rock-wallaby was not detected during the survey. The desktop assessment identified records from 2019 approximately 500 m north of the Lot 550 Survey Area. The rock faces, gullies, shallow caves and overhangs identified within the Lot 550 Survey Area are suitable habitat for this species. The Drainage line/Creek, Hills (Open Woodland over Tussock Grassland) and Hills (Shrubland over Hummock Grassland) habitats may be used by the species.

Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia* Pilbara form) – Vulnerable

The Pilbara Leaf-nosed Bat was originally considered to be the same species as the Orange Leaf-nosed Bat, which occurs in the Kimberley, Northern Territory, and northwest Queensland. However, it is now considered to be a separate form based on morphology (Van Dyck and Strahan, 2008). Formal reclassification has been difficult due to the small Pilbara population size (Van Dyck and Strahan, 2008). During the dry season the species roosts in deep, warm, humid caves or mines and forages nearby; in the wet season the species is more widespread and may not require caves for roosting (Menkhorst and Knight, 2004).

The Pilbara Leaf-nosed Bat was not detected during the survey. The desktop assessment identified records approximately 15 km south of the Lot 550, Lot 505 and Reserve 51970 Survey Areas. No deep, complex caves with a suitable microclimate required for maternity roosts. However, shallow caves and overhangs identified within the Lot 550 Survey Area may be used for day roosting. All habitats within the Survey Area may be used for foraging.

5.2.2.3 Reptiles

Cape Range Stone Gecko (*Diplodactylus capensis*) – Priority 2

The Cape Range Stone Gecko is known to prefer the hummock grassland habitats on limestone substrate present on the northern end of the North West Cape (Wilson and Swan, 2017).

The Cape Range Stone Gecko was not detected during the survey. The desktop assessment identified records from 2007 less than 2 km from the Lot 550 Survey Area. The Drainage line/Creek, Hills (Open Woodland over Tussock Grassland) and Hills (Shrubland over Hummock Grassland) habitats may be used by the species.

Ningaloo Worm Lizard (*Aprasia rostrata*) – Priority 3

The Ningaloo Worm Lizard is found on the Monte Bello islands and Northwest Cape south to Yardie Creek and Learmonth and inland to Bullara Station. They are known to occur on white coastal dunes and red Pindan dunes with *Triodia* (Wilson and Swan, 2017).

The Ningaloo Worm Lizard was not detected during the survey. The desktop assessment identified records from 2008 less than 4 km south southwest from the Lot 284 Survey Area. The Plains (Shrubland over Tussock Grassland) and Plains (Shrubland with *Atriplex* and *Frankenia*)

habitat with sandier soils in Lot 284 may be used by the species, however, they prefer the coastal dune habitat just west of Lot 284.

Cape Range Slider (*Lerista allochira*) – Priority 3

The Cape Range Slider is known only from the North West Cape peninsula, inhabiting a known range of approximately 70 km north-south and 20 km east-west (Department of Biodiversity Conservation and Attractions, 2021b). They are found on dissected limestone gorges and plateaus (Wilson and Swan, 2017).

The Cape Range Slider was not detected during the survey. The desktop assessment identified records from 2018 less than 5 km west from the Lot 284 Survey Area. The rockier areas of the Plains (Shrubland over Tussock Grassland) habitat in Lot 284 may be used by the species, however, nearest records are from the western coast of the Northwest Cape.

6 Assessment against the Ten Clearing Principles

The proposed clearing activities have been assessed against the Ten Clearing Principles as defined in the Department of Environment Regulations' (2014) Guide to Assessment: Clearing of Native Vegetation under the *Environmental Protection Act 1986*, taking into account the current extent and condition of the native vegetation within the Survey Area (Table 18).

Table 18: Assessment of the Ten Clearing Principles

Principle	Assessment
Principle (a) – Native vegetation should not be cleared if it comprises a high level of biological diversity	<p>A flora desktop assessment inclusive of NatureMap, PMST and DBCA database searches, and a review of relevant literature was undertaken to identify conservation significant flora taxa that have been recorded within 100 km of the Survey Area. A total of 24 conservation significant flora were identified by the database searches within 40 km of the Survey Area, including one Priority 1 taxa, 11 Priority 2 taxa, 10 Priority 3 taxa and two Priority 4 taxa. One additional taxon (<i>Owenia acidula</i>, P3) was identified by the literature review as occurring within 2 km of the Survey Area. No Threatened flora taxa were identified by the desktop assessment as occurring in the vicinity of the Survey Area.</p> <p>The pre-survey likelihood of occurrence assessment identified 15 conservation significant flora taxa as having a high likelihood of occurrence, five taxa as having a medium likelihood of occurrence, and four as having a low likelihood of occurrence.</p> <p>A total of 257 flora taxa from 153 genera across 58 families were recorded. No Threatened flora taxa pursuant to the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and/or gazetted as Threatened flora pursuant to the Biodiversity Conservation Act 2016 (BC Act) were recorded during the flora and vegetation survey. A total of eight DBCA listed Priority flora taxa were recorded within the Survey Area, comprising three Priority 2 taxa, four Priority 3 taxa, and one Priority 4 taxa. Following the survey, an additional seven taxa of conservation significance were considered have a high likelihood of occurrence within the Survey Area.</p> <p>Four flora specimens collected from the Survey Area could not be identified to taxa level. All but one of these (Herb sp.) have been assigned a confirmed genus and one (<i>Thysanotus ?exfimbriatus</i>) has been tentatively identified to species level. One of the unconfirmed flora taxa, <i>Sida</i> sp. Nov, was considered a species of conservation interest due to potentially representing a novel taxon. The remaining three unconfirmed flora taxa are considered unlikely to represent flora of conservation significance due to lack of features analogous to conservation significant flora considered likely to occur in the area.</p>

Principle	Assessment
	<p>A total of 32 flora taxa may be considered flora of other conservation significance, of which 31 represent range extensions of the species distribution (50 km from known location), and one is a potentially novel taxon.</p> <p>The Survey Area occurs across four broad vegetation associations, Cape Range 662, 663, 664 and 676. The EPA's Guidance Statement No. 33 has identified a threshold of the retention of 30% of pre-European extent of each community and advises that ecological communities with levels below 30% should be fully retained (Environmental Protection Authority, 2008). All broad vegetation units within the Survey Areas well above the 30% threshold, with over 85% of the pre-European extent of each remaining at the state, bioregion, subregion, and local government authority levels (Government of Western Australia, 2019).</p> <p>Two Threatened Ecological Communities (TECs) were identified within 100 km of the Survey Area by the database searches. Neither of these overlap the Survey Area. No DBCA listed PECs were identified within 50 km of the Karratha Survey Area by the database searches.</p> <p>The Survey Area comprises eleven vegetation types. No vegetation considered representative of any TECs or PECs was recorded within the Survey Area.</p> <p>Vegetation condition within the Survey Area ranged from Excellent to Degraded, with the majority considered to be in Very Good condition:</p> <ul style="list-style-type: none"> • Excellent (102.0 ha / 19.0%) • Very Good (306.1 ha / 57.1%) • Good (43.0 ha / 8.0%) • Poor (62.9 ha / 11.7%) • Degraded (22.1 ha / 4.1%). <p>Assessed Outcome: The suite of flora taxa, vegetation and habitat recorded during the survey is considered typical for the area, and widespread beyond the Survey Area. No Threatened flora or Ecological Communities were recorded within the Survey Area. No Priority Ecological Communities were recorded. Eight Priority flora taxa were recorded within the Survey Area, and a further seven Priority flora taxa were considered to have a high likelihood of occurrence. A total of 31 flora taxa may be considered range extensions of the species distribution. One taxon recorded, <i>Sida</i> sp. Nov, potentially represents a novel taxon. Majority of the vegetation of the Survey Area was considered to be in Very Good condition. The proposed clearing may be at variance with this principle.</p>

Principle	Assessment
<p>Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia</p>	<p>Database searches identified 67 conservation significant terrestrial vertebrate fauna species potentially occurring within the Survey Area. The post-survey likelihood of occurrence assessment determined that three conservation significant fauna taxa were considered to have a high likelihood of occurrence, five were considered to have a medium likelihood of occurrence and the remaining 59 taxa were considered to have a low likelihood of occurrence.</p> <p>The three taxa considered to have a high likelihood of occurrence were:</p> <ul style="list-style-type: none"> • <i>Diplodactylus capensis</i> (Cape Range Stone Gecko) • <i>Glareola maldivarum</i> (Oriental Pratincole) • <i>Petrogale lateralis lateralis</i> (Black-footed Rock-wallaby). <p>The five taxa considered to have a medium likelihood of occurrence were:</p> <ul style="list-style-type: none"> • <i>Aprasia rostrata</i> (Ningaloo Worm Lizard) • <i>Charadrius veredus</i> (Oriental Plover) • <i>Falco peregrinus</i> (Peregrine Falcon) • <i>Lerista allochira</i> (Cape Range Slider) • <i>Rhinionictoris aurantia</i> (Pilbara Leaf-nosed Bat). <p>Twenty fauna taxa from 15 families were recorded during the field survey, comprising 15 bird taxa, three mammal taxa and three reptile taxa. No fauna species of conservation significance (Threatened or Priority), or evidence of these species such as tracks, scats, nest, diggings, burrows or direct sightings were recorded within or directly surrounding the Survey Area.</p> <p>Seven fauna habitat types were identified during the survey. These included: Drainage line/Creek, Hills (Open Woodland over Tussock Grassland), Hills (Shrubland over Hummock Grassland), Plains (Woodland), Plains (Shrubland over Tussock Grassland), Plains (Shrubland over Hummock Grassland) and Plains (Shrubland with Atriplex and Frankenia).</p> <p>Assessed Outcome: The Black-footed Rock-wallaby and Cape Range Stone Gecko are considered to be dependent on the Drainage line/Creek, Hills (Open Woodland over Tussock Grassland) and Hills (Shrubland over Hummock Grassland) habitats found on Lot 550. The Cape Range Slider may be dependent on the rockier areas of the Plains (Shrubland over Tussock Grassland) habitat on Lot 284. The Ningaloo Worm Lizard may be dependent on the Plains (Shrubland over Tussock Grassland) and Plains (Shrubland with Atriplex and Frankenia) habitat with sandier soils on Lot 284.</p>

Principle	Assessment
	<p>Due to the reduced range, habitat preferences and shy nature of the Black-footed Rock-wallaby and the small known ranges and habitat preferences of the Cape Range Stone Gecko, disturbance within the Survey Area is likely to significantly impact the taxa.</p> <p>Due to the small known ranges and habitat preferences of the Cape Range Slider and Ningaloo Worm Lizard, disturbance within the Survey Area may significantly impact the taxa, if they are found to occur within the Survey Area.</p> <p>The proposed clearing may be at variance with this principle.</p>
<p>Principle (c) – Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora</p>	<p>No Threatened flora taxa pursuant to the EPBC Act and/or gazetted as Threatened pursuant to the BC Act were identified by database searches or recorded during the survey.</p> <p>Assessed Outcome: Given that no Threatened flora were expected to occur, or recorded, within the Survey Area, the proposed clearing is not considered to be at variance with this principle.</p>
<p>Principle (d) – Native vegetation should not be cleared if it comprises the whole or a part of or is necessary for the maintenance of a Threatened Ecological Community (TEC).</p>	<p>The database search did not identify any TECs and/or their buffers within 100 km of the Survey Area. Furthermore, none of the vegetation recorded during the survey was considered analogous to any TECs.</p> <p>Assessed Outcome: No TECs have been recorded within the Survey Area. The proposed clearing is not considered to be at variance with this principle.</p>
<p>Principle (e) – Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared</p>	<p>The Survey Area occurs across four broad vegetation system associations, Cape Range 662, 663, 664 and 676 (Beard, 1976; Shepherd, Beeston and Hopkins, 2002). The vegetation types within the Survey Area are considered to be broadly representative of the broad vegetation system associations.</p> <p>The EPA’s Guidance Statement No. 33 has identified a threshold of the retention of 30% of pre-European extent of each community, and advises that ecological communities with levels below 30% should be fully retained (Environmental Protection Authority, 2008). All broad vegetation systems associations mapped within the Survey Area remain well above the 30% threshold, each having over 85% of the pre-European extent remaining (Government of Western Australia, 2019).</p> <p>The remnant vegetation is significant to the following threatened fauna taxa that were considered as having high likelihood of occurrence within the Survey Area:</p> <ul style="list-style-type: none"> • <i>Diplodactylus capensis</i> (Cape Range Stone Gecko) • <i>Petrogale lateralis lateralis</i> (Black-footed Rock-wallaby).

Principle	Assessment
	<p>The remnant vegetation is significant to the following threatened fauna taxa that were considered as having medium likelihood of occurrence within the Survey Area:</p> <ul style="list-style-type: none"> • <i>Aprasia rostrata</i> (Ningaloo Worm Lizard) • <i>Lerista allochira</i> (Cape Range Slider). <p>Assessed Outcome: The remnant vegetation contains habitat for four threatened fauna taxa (the Cape Range Stone Gecko, the Black-footed Rock-wallaby, the Ningaloo Worm Lizard, and the Cape Range Slider), however, the broad vegetation system associations mapped across the Survey Area are well above the EPA's 30% retention threshold. The proposed clearing is not considered to be at variance with this principle.</p>
<p>Principle (f) – Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland</p>	<p>The Survey Area does not intersect any major watercourses or water bodies that are mapped by the State Government GIS database (Department of Water and Environmental Regulation, 2018). The closest watercourses are two minor tributaries flowing into the Exmouth Gulf, which are located approximately 100 m north and 360 m south of Lot 505, respectively. Vegetation type D1 occurs within drainage lines that are not formally recognised by the State Government GIS database; however, the vegetation is considered to be representative of riparian vegetation.</p> <p>Assessed Outcome: Vegetation type D1 within the Survey Area is considered representative of riparian vegetation as it occurs within drainage lines. Horizon Power has surveyed an area of land greater than the required to allow for design flexibility based on findings from the environment and heritage surveys. It is recommended that Horizon Power avoid clearing of the vegetation associated with the drainage lines; however, should the final design require the clearing in this area, then the proposed clearing may be at variance with this principle. It is noted that Section 49 c of the <i>Energy Operators (Powers) Act 1979</i> (Minister for Energy, 1979) allows Horizon Power to make or alter, streams or watercourses drainage to establish, maintain, utilise, and operate, any supply system.</p>
<p>Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation</p>	<p>The Department of Water and Environmental Regulation (DWER) has defined land degradation as including the following (DER, 2014):</p> <ul style="list-style-type: none"> • The clearing of vegetation • Decline in vegetation condition • Soil erosion and soil acidity (caused by wind and water erosion due to vegetation clearing) • Salinity or

Principle	Assessment
	<ul style="list-style-type: none"> • Waterlogging/flooding. <p>Vegetation condition within the Karratha Survey Area ranged from Poor to Very Good comprising (rounded to one decimal place):</p> <ul style="list-style-type: none"> • Poor (0.4 ha / 0.3%) • Good (26.8 ha / 18.2%) • Very Good (119.7 ha / 81.5%). <p>Assessed Outcome: During construction, management measures will be put in place to prevent soil erosion from wind and water. As an operational and maintenance requirement (such as the prevention of dust deposition on the solar panels, and minimising disturbance to the environment and the loss of public amenity in the establishment of a wind farm), the final solar and wind farm footprint will not include areas of bare earth. Soil coverings may include a combination of reinstated native vegetation, gravels and/or hardstand (bitumen). Furthermore, the design of the site will include stormwater management. These management measures will reduce land degradation, however if not implemented, clearing may result in appreciable land degradation. Therefore, clearing may be at variance with this principle.</p>
<p>Principle (h) – Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area</p>	<p>The Survey Area overlaps two mapped ESAs, which are correlated to Cape Range National Park and Ningaloo Marine Park (Department of Water and Environmental Regulation, 2021).</p> <p>The Survey Area does not intersect any Conservation Areas (Department of Biodiversity Conservation and Attractions, 2021a). The nearest Conservation Area is the Bundegi Coastal Park (R 40728) vested under the Executive Director Department of CALM and the Shire of Exmouth, which is located 50 m southeast of Lot 284.</p> <p>Assessed Outcome: Lots 284, 505 and 550 are mapped over or are adjacent to ESAs. Lot 284 is adjacent to a Conservation Area. Maintaining native vegetation near conservation reserves provides a buffer to the reserve and protects it from edge effects. The development footprint should be planned to minimise impacts and to provide an adequate buffer size to the conservation areas. The proposed clearing may be at variance with this principle.</p>
<p>Principle (i) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water</p>	<p>The long-term annual average rainfall recorded at the Learmonth Airport WA weather station is 244.7 mm (1991 to 2020) (Bureau of Meteorology, 2021).</p>

Principle	Assessment
	<p>The Survey Area does not intersect any major watercourses or water bodies mapped by the State Government GIS database (Department of Water and Environmental Regulation, 2018). Drainage lines are present in Lots 505 and 550.</p> <p>The drainage lines were mapped as vegetation type D1, which was associated with a vadophyte or facultative phreatophyte, <i>Eucalyptus xerothermica</i>. Further investigation will determine whether vegetation type D1 is representative of a potential GDE.</p> <p>The proposed clearing is adjacent to existing vehicle tracks; therefore, it is not expected to cause deterioration in the quality of surface or underground water.</p> <p>Assessed Outcome: Drainage lines are present within the Survey Area, specifically in Lots 505 and 550. Horizon Power has surveyed an area of land greater than the required to allow for design flexibility based on findings from the environment and heritage surveys. It is recommended that Horizon Power avoid clearing of the vegetation associated with the drainage lines; however, should the final design require the clearing of this native vegetation, then appropriate management of surface and potential underground water flows is required. Furthermore, an investigation on groundwater levels should be conducted prior to clearing of native vegetation that has the potential to represent a GDE. If appropriate management actions are implemented, the proposed clearing is unlikely to be at variance with this principle.</p>
<p>Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding</p>	<p>The Survey Area does not intersect any major watercourses or water bodies mapped by the State Government GIS database (Department of Water and Environmental Regulation, 2018). Drainage lines occur within the Survey Area, which are not mapped by the State Government GIS database.</p> <p>The proposed clearing within the Survey Area could cause, or exacerbate, the incidence of flooding in the local area.</p> <p>Assessed Outcome: If appropriate management actions are implemented the proposed clearing is unlikely to be at variance with this principle.</p>

7 Assessment against Matters of National Environmental Significance

The results obtained from the biological survey have provided information to assess if significant impact is 'likely' and whether a 'referral' action is recommended.

Based on the Significant Impact Criteria from the Matters of National Environmental Significance – Significant Impact Guidelines 1.1 (Department of the Environment, 2013) the following needs to be considered. This assessment assumes the clearing footprint can be flexible and designed to minimise impact.

7.1 Listed Threatened Species and Ecological Communities

7.1.1 Threatened Ecological Communities

No Commonwealth or State listed TECs were identified within the Survey Area by the database searches.

No TECs were recorded within the Survey Area.

7.1.2 Threatened Flora

No Threatened flora species pursuant to the EPBC Act were identified as occurring within 100 km of the Survey Area by the database searches. No Threatened flora were recorded within the Survey Area, and it is considered unlikely that Threatened species are present within the Survey Area.

7.1.3 Threatened Fauna

No Threatened fauna taxa pursuant to the EPBC Act were recorded within the Survey Area.

One Threatened fauna taxon pursuant to the EPBC Act was considered as having a high likelihood of occurrence within the Survey Area, and one taxon was considered as having a medium likelihood of occurrence within the Survey Area.

***Petrogale lateralis lateralis* (Black-footed Rock-wallaby) – Endangered – High Likelihood (Lot 550)**

The Black-footed Rock-wallaby has widely scattered populations through central and western Australia and some coastal islands of Western and Southern Australia. The species is well known to avoid human interaction and is cryptic in nature, never venturing far from rock shelter and preferring larger gorges and cave systems with little disturbance (Menkhorst and Knight, 2004).

The Black-footed Rock-wallaby was not detected during the survey. The desktop assessment identified records from 2019 approximately 500 m north of Lot 550. The rock faces, gullies, shallow caves and overhangs identified within Lot 550 are suitable habitat for this species. The Drainage line/Creek, Hills (Open Woodland over Tussock Grassland) and Hills (Shrubland over Hummock Grassland) habitats may be used by the species.

***Rhinonicteris aurantia* Pilbara form (Pilbara Leaf-nosed Bat) – Vulnerable – Medium Likelihood (Lot 550)**

The Pilbara Leaf-nosed Bat was originally considered to be the same species as the Orange Leaf-nosed Bat, which occurs in the Kimberley, Northern Territory, and northwest Queensland. However, it is now considered to be a separate form based on morphology (Van Dyck and Strahan, 2008). Formal reclassification has been difficult due to the small Pilbara population size (Van Dyck and Strahan, 2008). During the dry season the species roosts in deep, warm, humid caves or mines and forages nearby; in the wet season the species is more widespread and may not require caves for roosting (Menkhorst and Knight, 2004).

The Pilbara Leaf-nosed Bat was not detected during the survey. The desktop assessment identified records approximately 15 km south of Lots 550 and 505, and Reserve 51970. No deep, complex caves with a suitable microclimate required for maternity roosts were recorded within the Survey Area. However, shallow caves and overhangs identified within Lot 550 may be used for day roosting. All habitats within the Survey Area may be used for foraging.

7.2 Listed Migratory Taxa

Migratory shorebirds utilise nearby coastal areas, beaches, and tidal flats, however, no migratory birds were recorded during the survey within the Survey Area and are considered unlikely to be dependent on the habitat within the Survey Area.

One migratory taxon was considered as having a high likelihood of occurrence within the Survey Area, and one migratory taxon was considered as having a medium likelihood of occurrence within the Survey Area.

***Glareola maldivarum* (Oriental Pratincole) – Migratory, Marine – High Likelihood (Lot 550, Lot 505, Reserve 51970)**

The Oriental Pratincole typically prefers plains, shallow wet and dry edges of open bare wetlands and tidal mudflats and beaches for habitat (Pizzey and Knight, 2013). As this species breeds in Pakistan, India and parts of south-east Asia, the Survey Area would be used for foraging only (Pizzey and Knight, 2013).

The Oriental Pratincole was not recorded during the survey, but database searches show several recent records of this species 2 km from Reserve 51970, and Lots 505 and 550, suggesting that it is highly likely to occur in the Survey Area. The Plains habitats may be used by the species.

***Charadrius veredus* (Oriental Plover) – Migratory, Marine – Medium Likelihood (Lot 550, Lot 505, Reserve 51970)**

The Oriental Plover typically prefers grasslands and thinly vegetated plains, and open areas such as recently burnt country and heavily grazed pastures. During the hottest times of the day large flocks can be found on areas of wet ground associated with wetlands (Menkhorst *et al.*, 2017). As this species breeds in China and Mongolia, the Survey Area would be used for foraging only.

The Oriental Plover was not recorded during the survey, but database searches show historical records of this species 4 km from Reserve 51970, and Lots 505 and 550. The Plains habitats may be used by the species.

7.3 Wetlands of International Importance

No Wetlands of International Importance are present within the Survey Area (Department of the Environment and Energy, 2015b).

7.4 Commonwealth Marine Environment

There is no marine environment present within the Survey Area (Department of the Environment and Energy, 2015a).

7.5 World Heritage Properties

There are no world heritage properties present within the Survey Area, however one property, the Ningaloo Coast, is adjacent to Lot 284 (Department of Agriculture Water and the Environment, 2020a). This world heritage property envelops the Cape Range peninsula on the northern and western side, and its boundary is located 50 m southeast of Lot 284.

7.6 Assessment Conclusion

The assessment of significance is dependent on the size and location of the clearing footprint, and on the condition of the vegetation to be cleared. Given the high biological diversity and value of fauna habitat present within the Survey Area, a referral to the Department of the Environment is considered likely.

8 Potential Impact on Flora, Vegetation and Fauna

8.1 Flora and Vegetation

No Threatened flora taxa pursuant to the EPBC Act were recorded during the survey.

No vegetation representative of any Commonwealth listed TECs was recorded within the Survey Areas.

The potential impacts of vegetation clearing within the Survey Areas are:

- Direct impacts of removal of flora taxa and vegetation
- Indirect impacts including construction rubbish drift and dust on remaining vegetation during construction
- Introduction or spread of weeds or disease into the surrounding vegetation
- Indirect impacts of altered hydrological regimes.

8.2 Fauna

No Threatened fauna taxa pursuant to the EPBC Act were recorded within the Survey Area.

The potential impacts of vegetation clearing on fauna within the Survey Areas are:

- Indirect impacts of removal of fauna habitat
- Death or injury to fauna during clearing.

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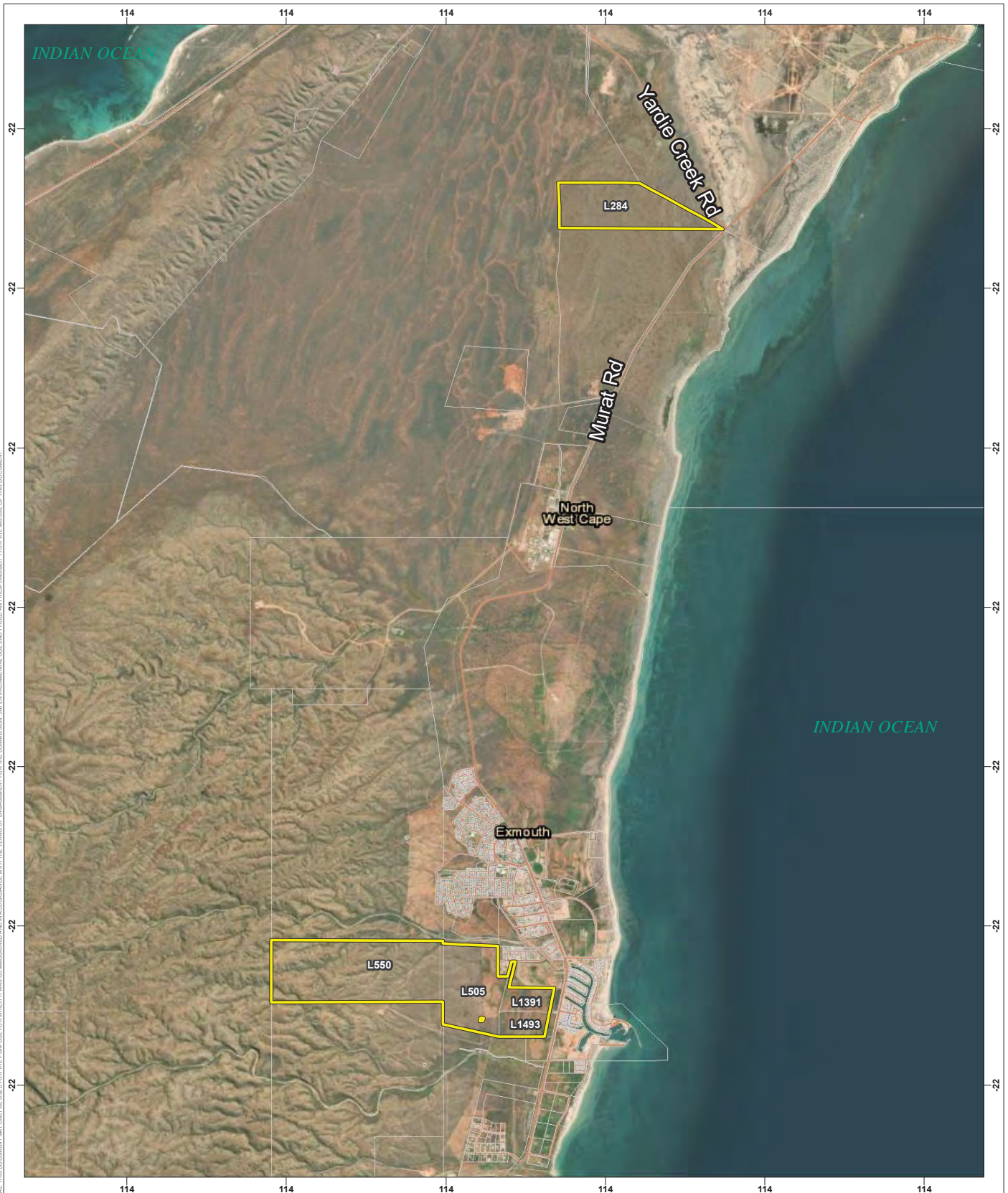
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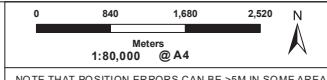
Figures



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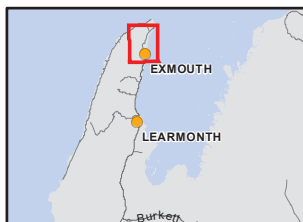
Legend

- Cadastral Lines
- Survey Boundary



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

LOCALITY MAP



SLIP ENABLER

- LOCALITY MAP SOURCED FROM LANDGATE 2021
 - OTHER DATA SOURCED LANDGATE 2021
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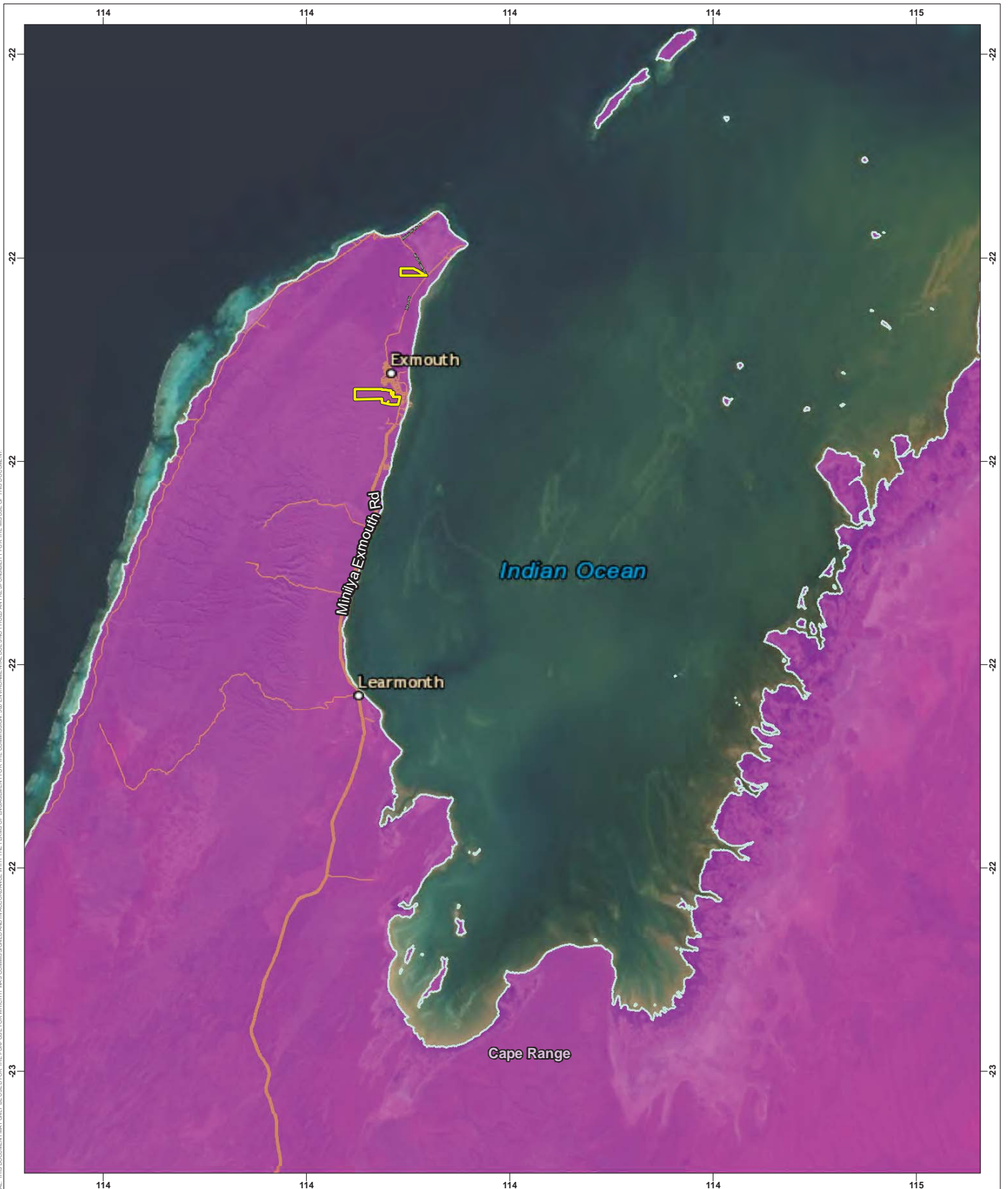
PROJECT ID 4766 **DATE** 29/11/2021

HORIZONTAL DATUM AND PROJECTION
 GCS GDA 1994

CREATED	CHECKED	APPROVED	REVISION
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Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth

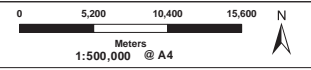
Biological Survey
Figure 1
Site Location



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Legend

- Survey Boundary
- IBRA Regions
- IBRA Subregions
- Cape Range



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

LOCALITY MAP



PROJECT ID 4766		DATE 24/11/2021	
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HORIZONTAL DATUM AND PROJECTION
GCS GDA 1994

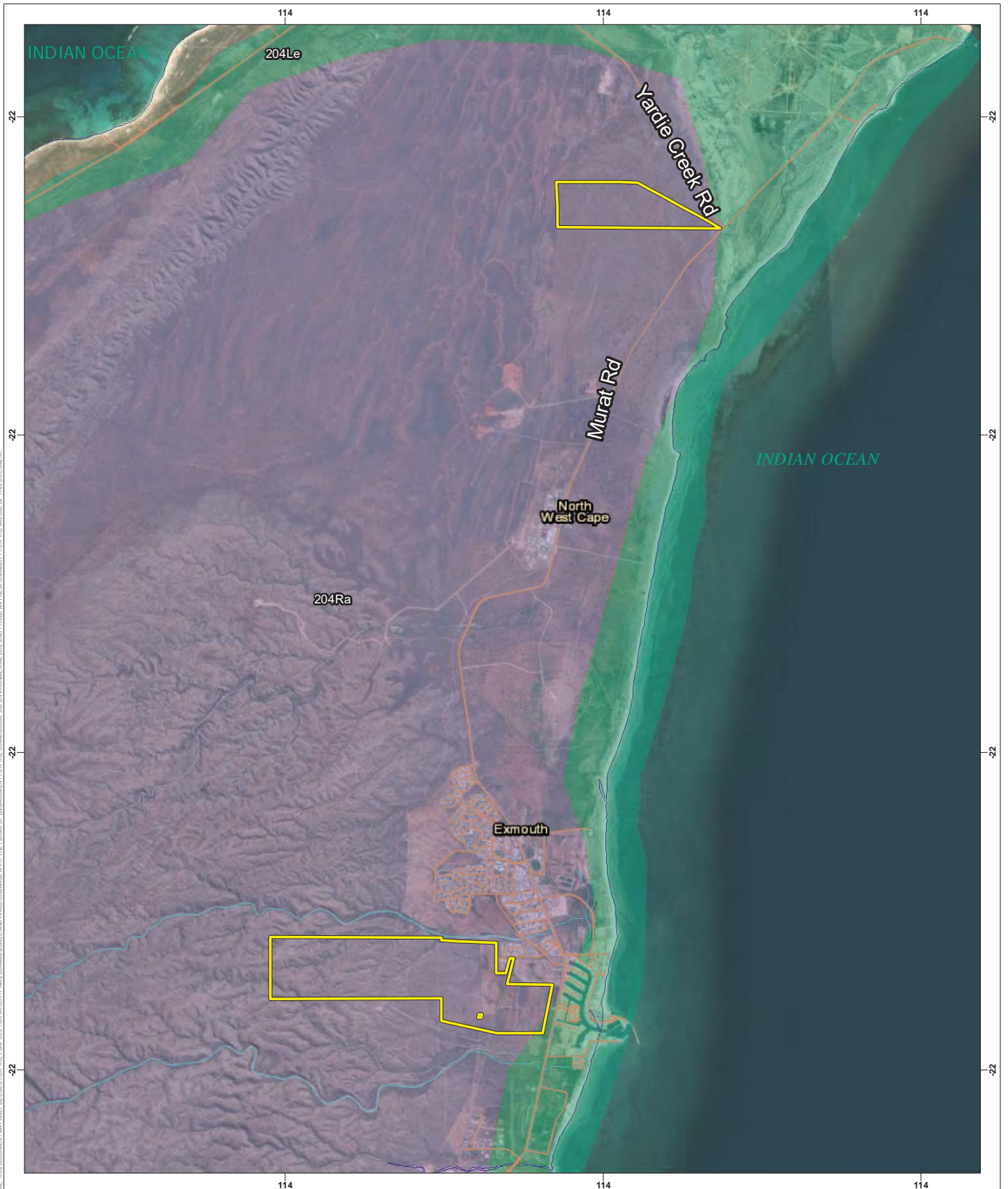
CREATED	CHECKED	APPROVED	REVISION
LF	BD	BD	0

Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth

Biological Survey
Figure 2
IBRA Subregions

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Legend

Survey Boundary

Hydrography

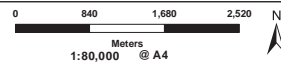
Coastal Waterline
 Minor Tributary

Soil Land System

204Le: Sandy outwash plains marginal to the Cape Range, supporting mainly soft spinifex hummock grasslands with scattered acacia shrubs.
 204Ra: Dissected limestone plateaux, hills and ridges with gorges and steep stony slopes supporting hard spinifex, sparse shrubs and eucalypts.

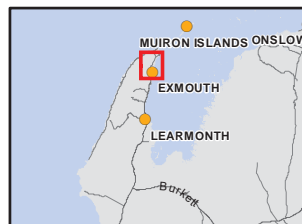
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LOCALITY MAP



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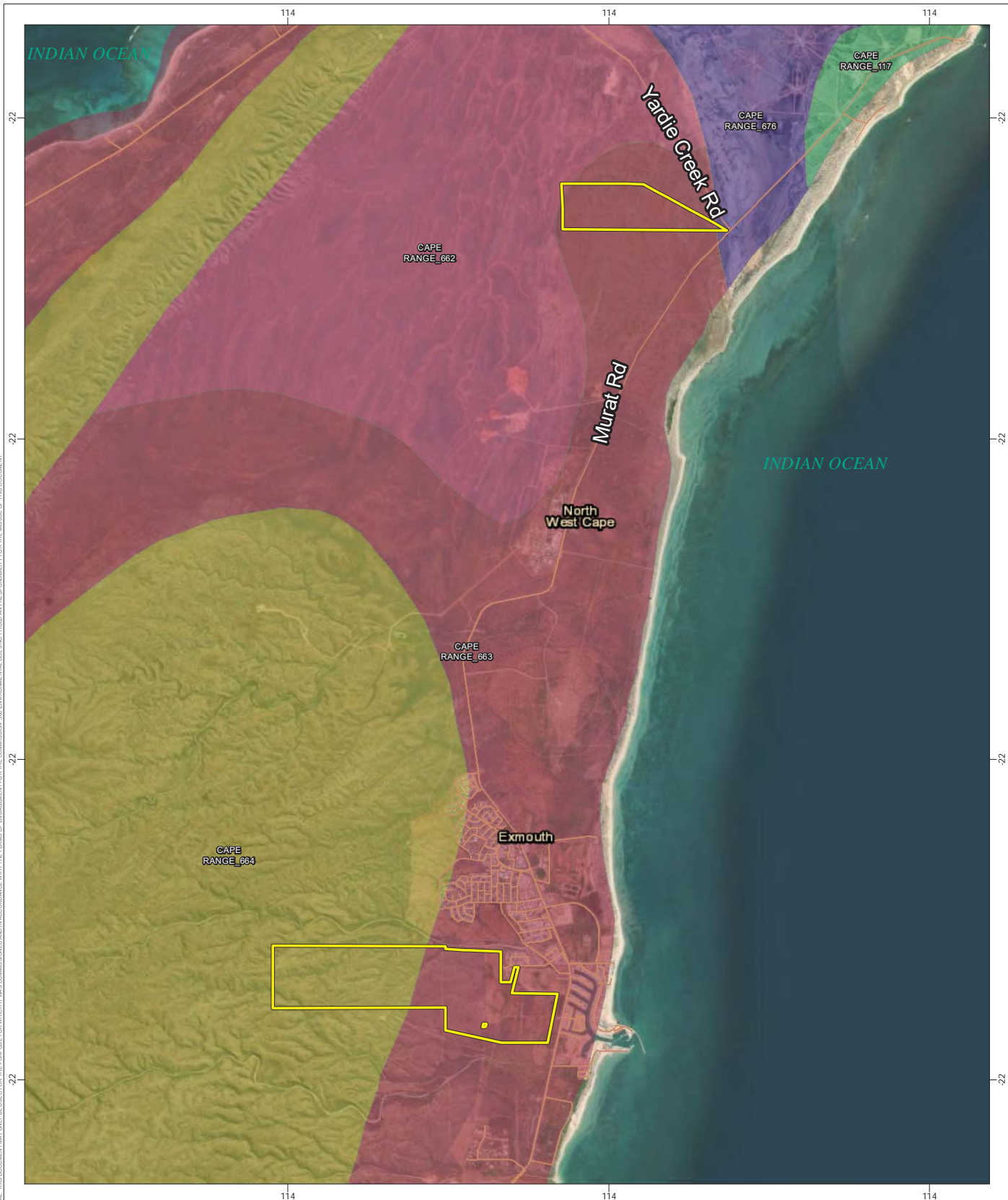
PROJECT ID 4766
DATE 24/11/2021

HORIZONTAL DATUM AND PROJECTION
 GCS GDA 1994

CREATED	CHECKED	APPROVED	REVISION
LF	BD	BD	0

Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth

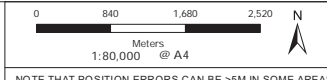
Biological Survey
Figure 3
Soil Land Systems and Hydrography



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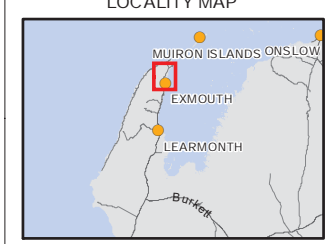
Legend

- Survey Boundary
- Broad Vegetation Types**
- CAPE RANGE_117: Grass-steppe
- CAPE RANGE_662: Spinifex complexes
- CAPE RANGE_663: Shrub-steppe
- CAPE RANGE_664: Sparse low tree-steppe
- CAPE RANGE_676: Samphire



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Horizon power
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 Exmouth

Biological Survey Figure 4 Broad Vegetation Types

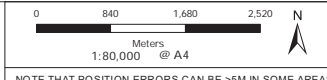
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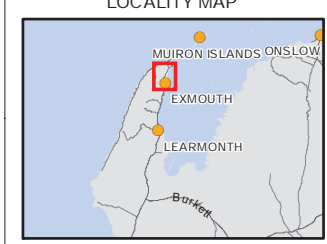
- Survey Boundary
- Environmentally Sensitive Areas
- DBCA Managed Lands and Waters
- DBCA Managed Land
- DBCA Managed Marine



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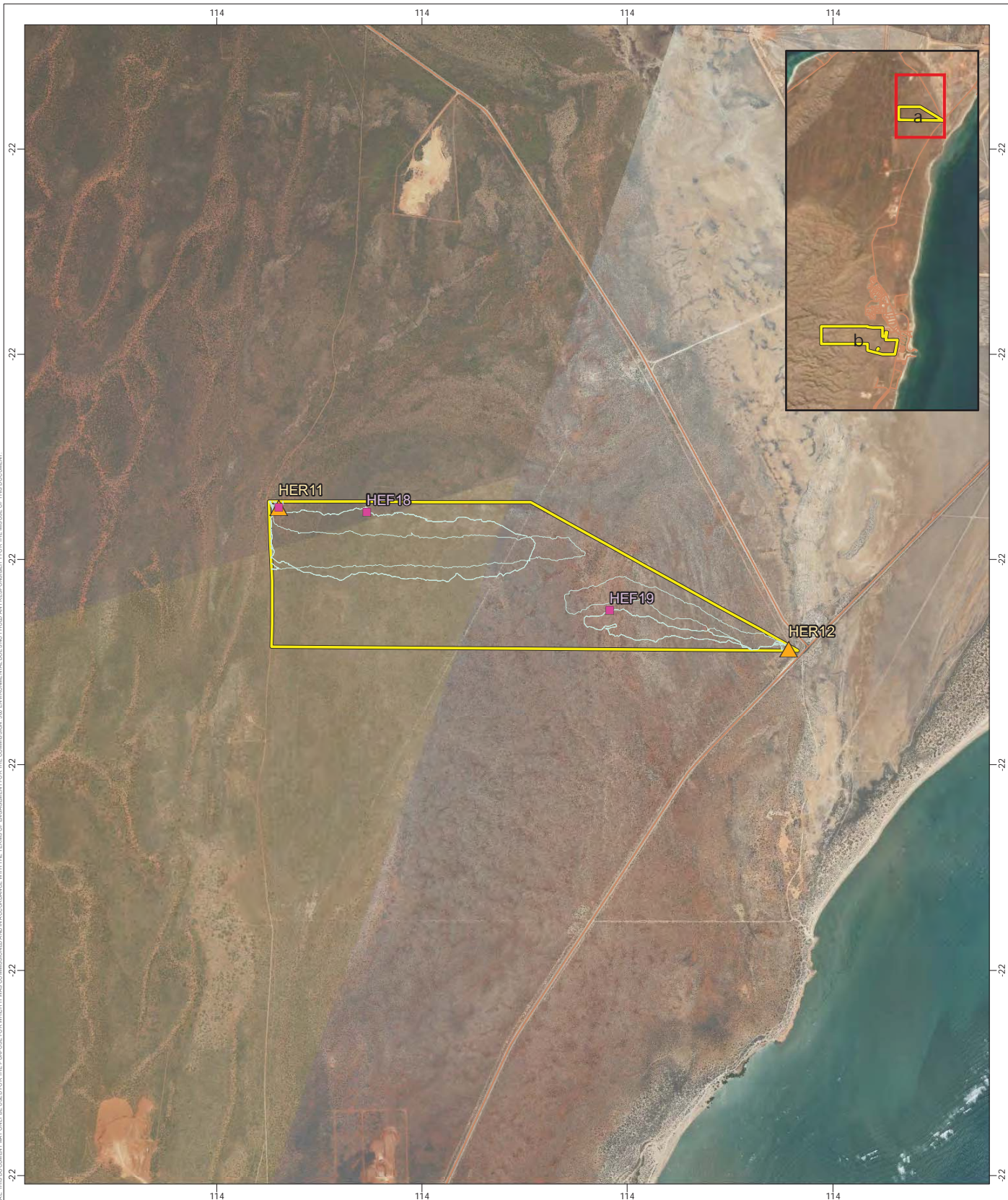
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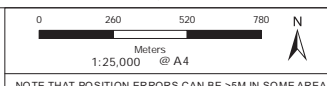


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Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey
Figure 5
 Conservation and
 Environmentally Sensitive Areas

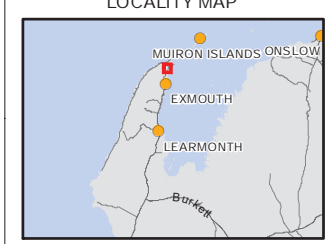


- Legend**
- Survey Boundary
 - GPS Tracks
 - Relieves
 - Fauna Habitat Assessment



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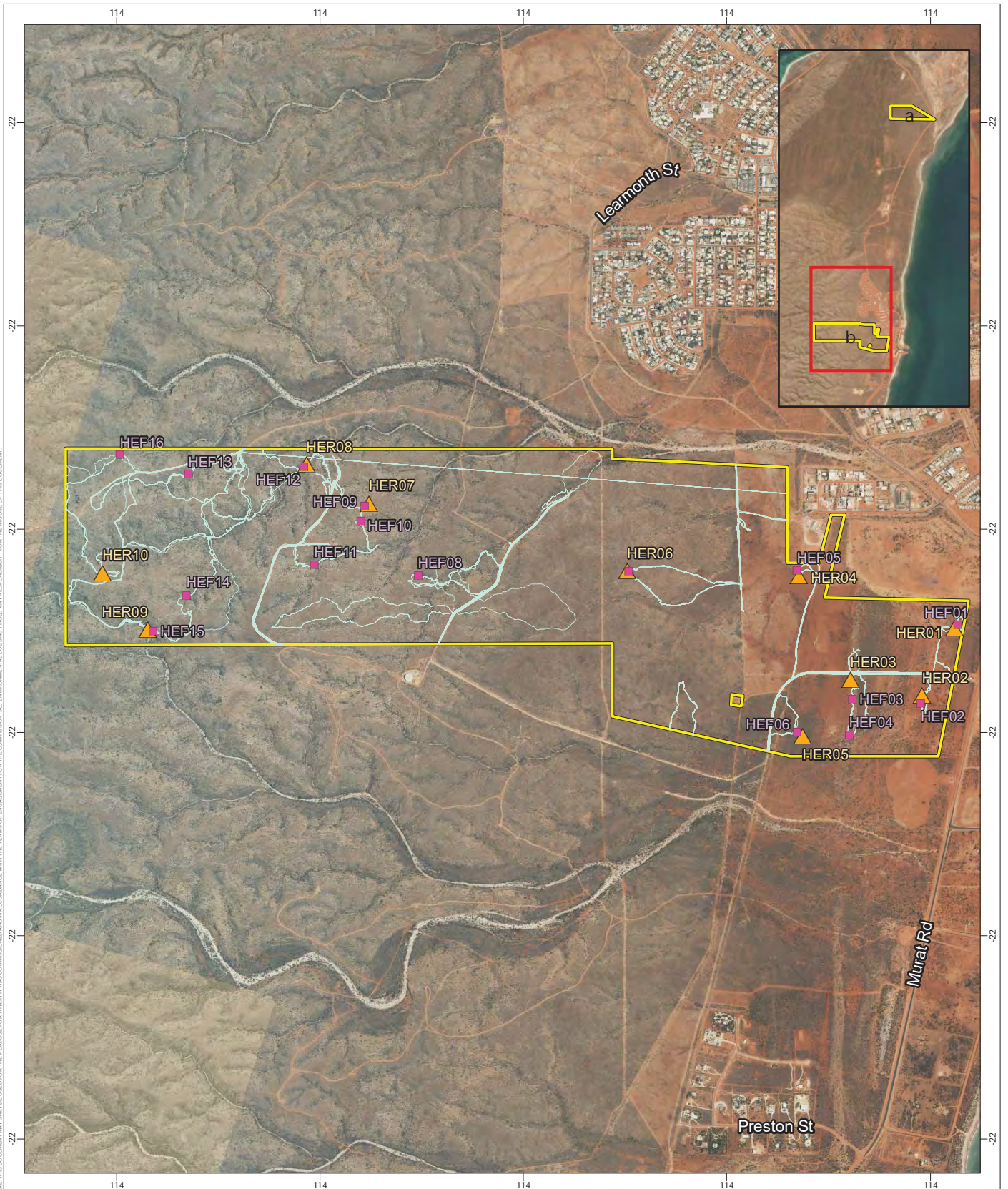
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HORIZONTAL DATUM AND PROJECTION GCS GDA 1994			
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Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

Figure 6a
 Survey Effort

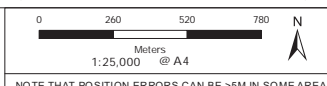
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- Legend**
- Survey Boundary
 - GPS Tracks
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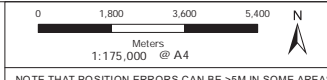
Horizon power
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Figure 6b
 Survey Effort

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- Legend**
- Survey Boundary
 - DBCAs Threatened and Priority Flora**
 - *Acacia alexandri* (P3)
 - *Acanthocarpus rupestris* (P2)
 - *Brachychiton obtusilobus* (P4)
 - *Corchorus congener* (P3)
 - *Cucumis* sp. Barrow Island (D.W. Goodall 1264) (P2)
 - *Daviesia pleurophylla* (P2)
 - *Eremophila forrestii* subsp. *capensis* (P3)
 - *Eremophila youngii* subsp. *lepidota* (P2)
 - *Grevillea calcicola* (P3)
 - *Gymnanthera cunninghamii* (P3)
 - *Stackhousia umbellata* (P2)
 - *Tephrosia* sp. North West Cape (G. Marsh 81) (P2)
 - *Tinospora esiangkara* (P2)



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Horizon power
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Biological Survey
Figure 7
 DBCA Threatened and
 Priority Flora Locations

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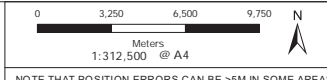
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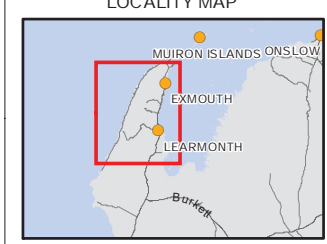
Legend

- Survey Boundary
- Threatened and Priority Ecological Communities
- Camerons Cave Troglitic Community
- Cape Range Remipede Community (Bundera Sinkhole)



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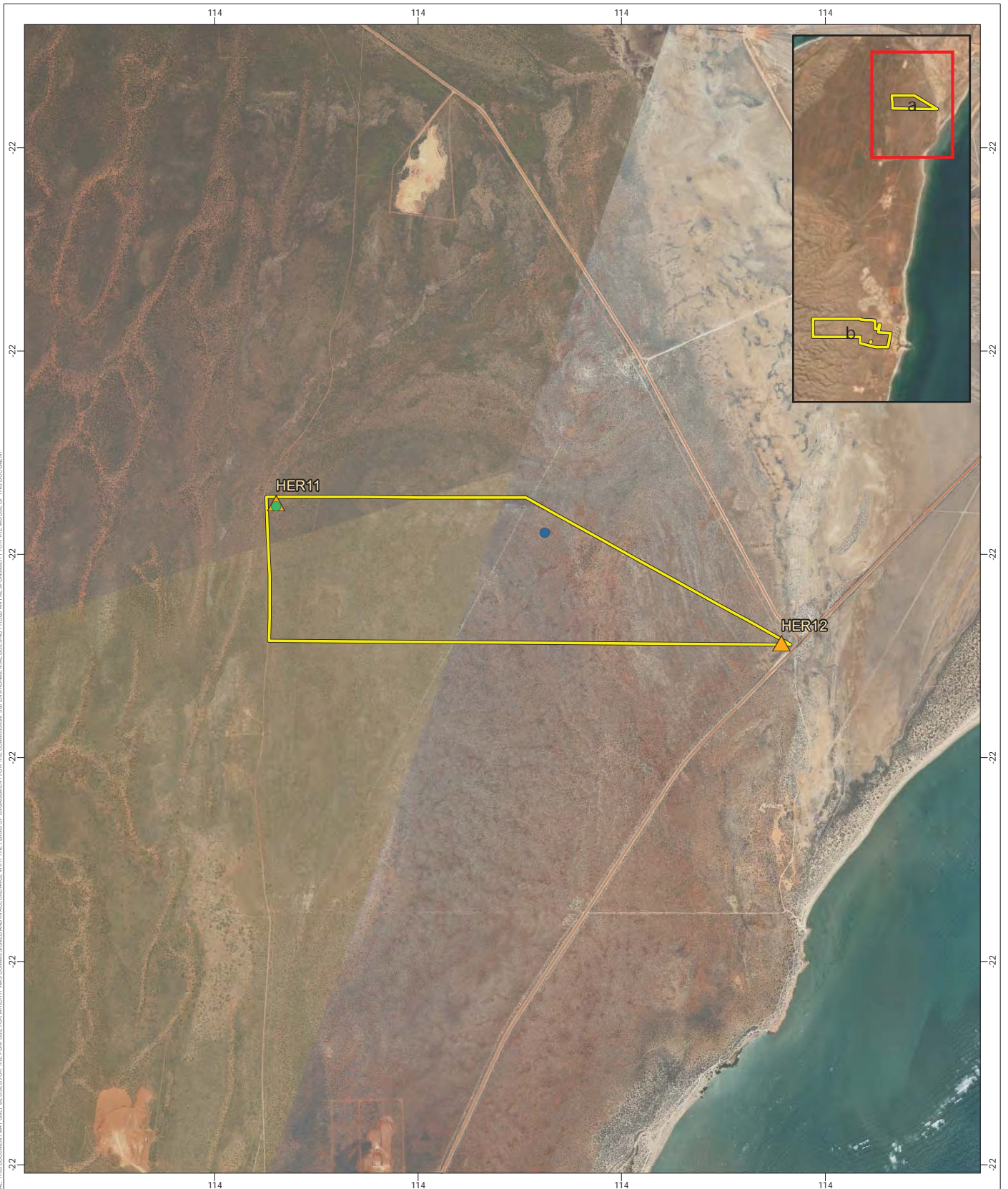
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Horizon power
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 Exmouth
 Biological Survey

Figure 8
 DBCA Threatened and Priority
 Ecological Communities

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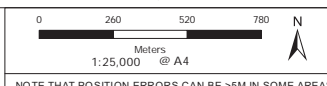
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- Legend**
- Survey Boundary
 - ▲ Relevés

- Flora of Conservation Significance**
- *Corchorus congener* (P3)
 - *Tinospora esiangkara* (P2)



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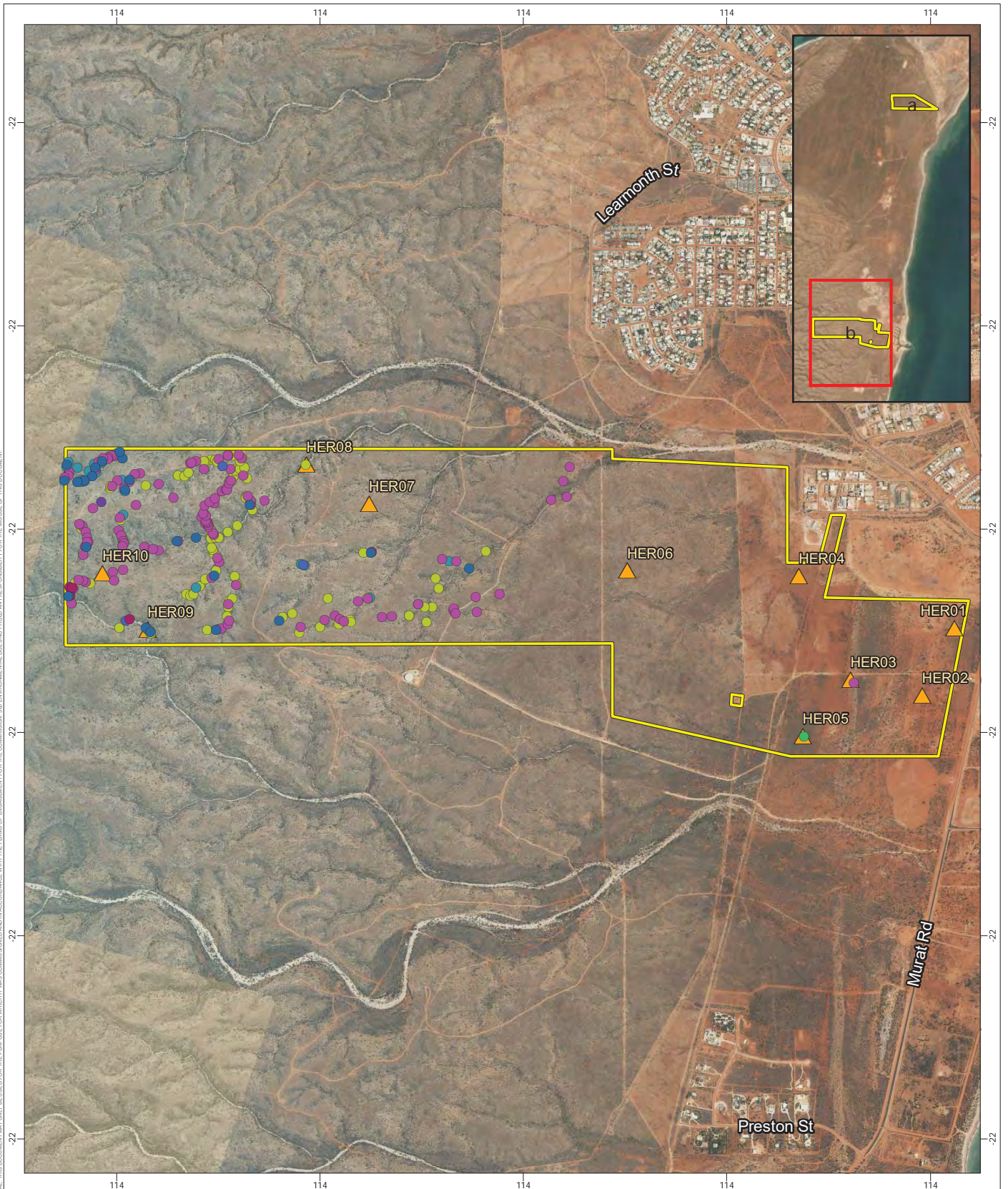
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 GCS GDA 1994

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Horizon power
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 Exmouth
 Biological Survey

Figure 9a
 Flora of Conservation Significance

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Legend

Survey Boundary

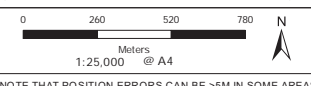
▲ Relieves

Flora of Conservation Significance

- *Acacia alexandri* (P3)
- *Acanthocarpus rupestris* (P2)
- *Brachychiton obtusilobus* (P4)
- *Corchorus congener* (P3)
- *Eremophila forrestii* subsp. *capensis* (P3)
- *Grevillea calcicola* (P3)
- *Hamieria kempeana* subsp. *rhadinophylla* (P2)
- *Sida* sp. (SO1)
- *Tinospora esiangkara* (P2)

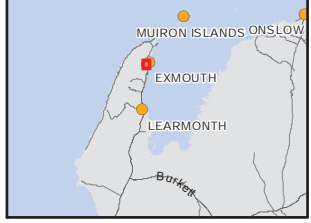
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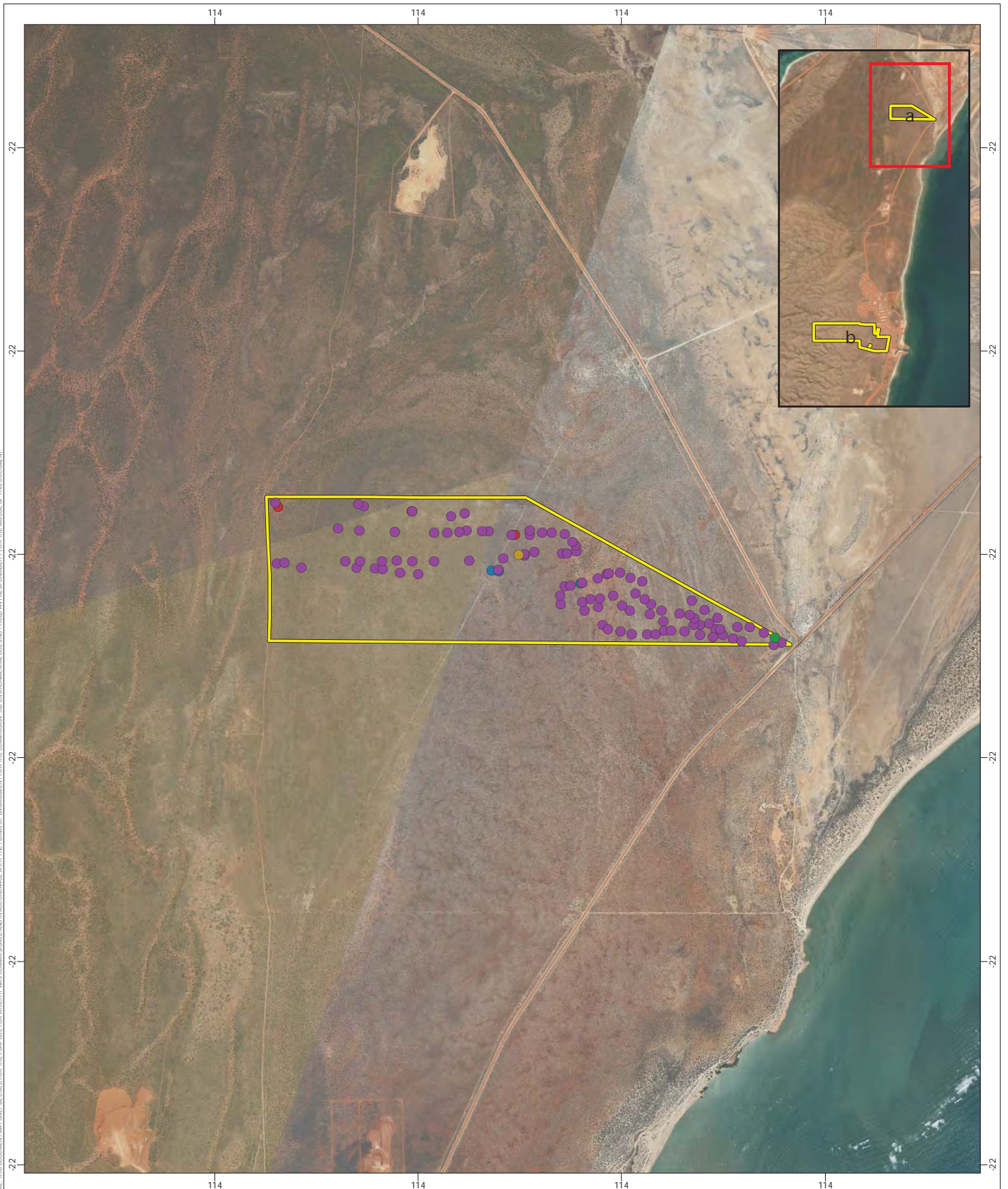
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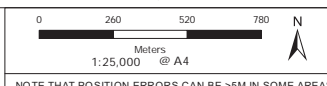
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Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

Figure 9b
 Flora of Conservation Significance



- Legend**
- Survey Boundary
 - Introduced Flora**
 - **Aerva javanica*
 - **Cenchrus ciliaris*
 - **Bidens bipinnata*
 - **Cenchrus setiger*
 - **Setaria verticillata*

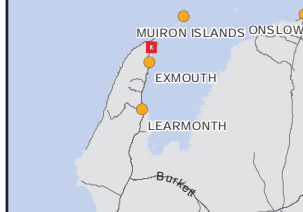


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LOCALITY MAP



HORIZONTAL DATUM AND PROJECTION
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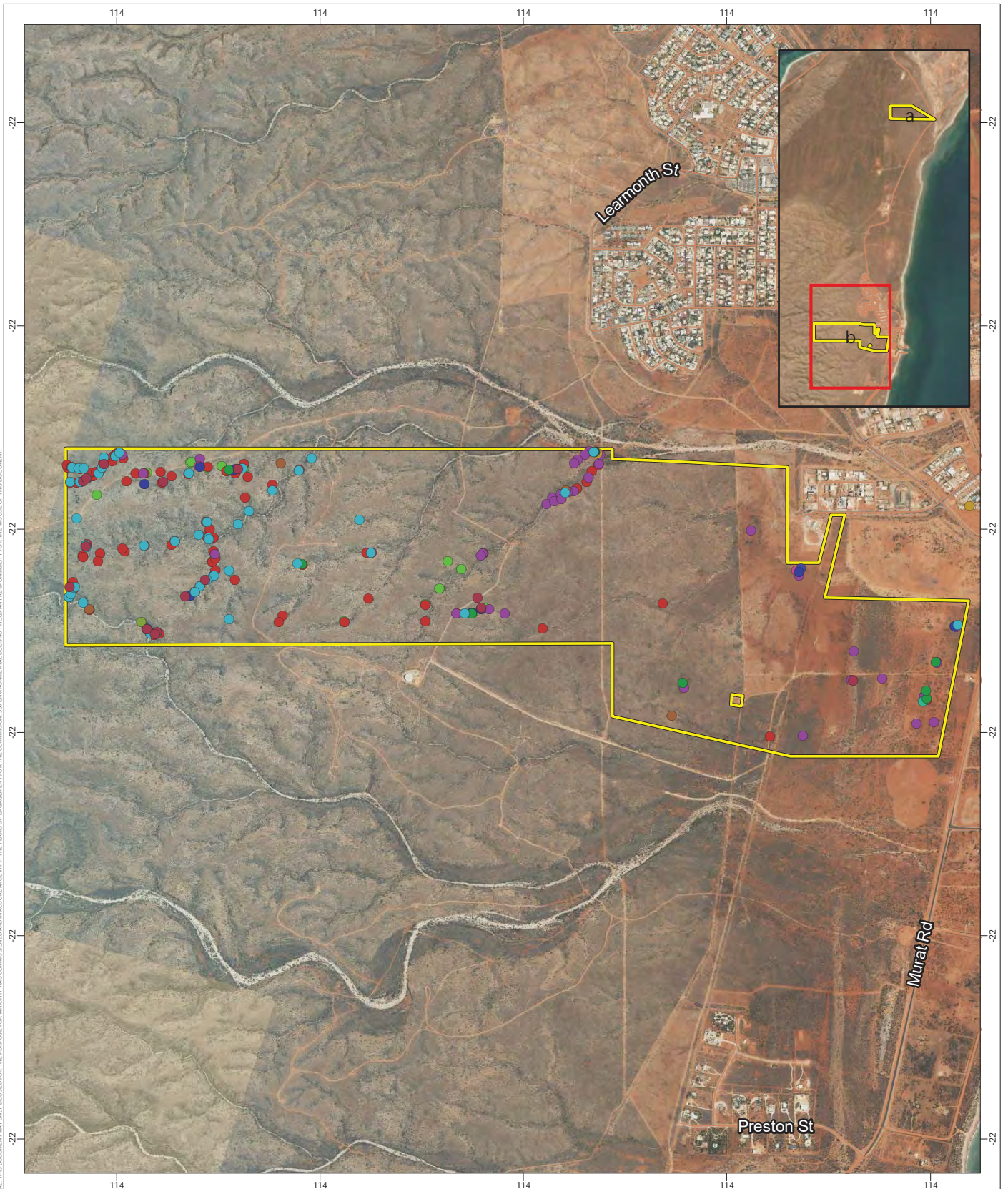
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 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
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Figure 10a
 Introduced Flora Recorded

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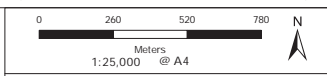
Survey Boundary

Introduced Flora

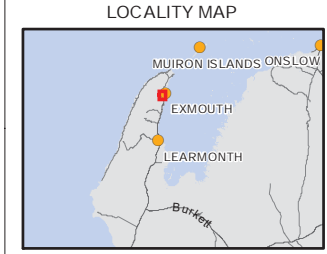
- *Aerva javanica
- *Asphodelus fistulosus
- *Bidens bipinnata
- *Cenchrus ciliaris
- *Cenchrus setiger
- *Chloris pumilio
- *Crotalaria incana subsp. incana
- *Datura leichhardtii subsp. leichhardtii
- *Flaveria trinervia
- *Malvastrum americanum
- *Rumex vesicarius
- *Setaria verticillata
- *Sigesbeckia orientalis
- *Sonchus oleraceus

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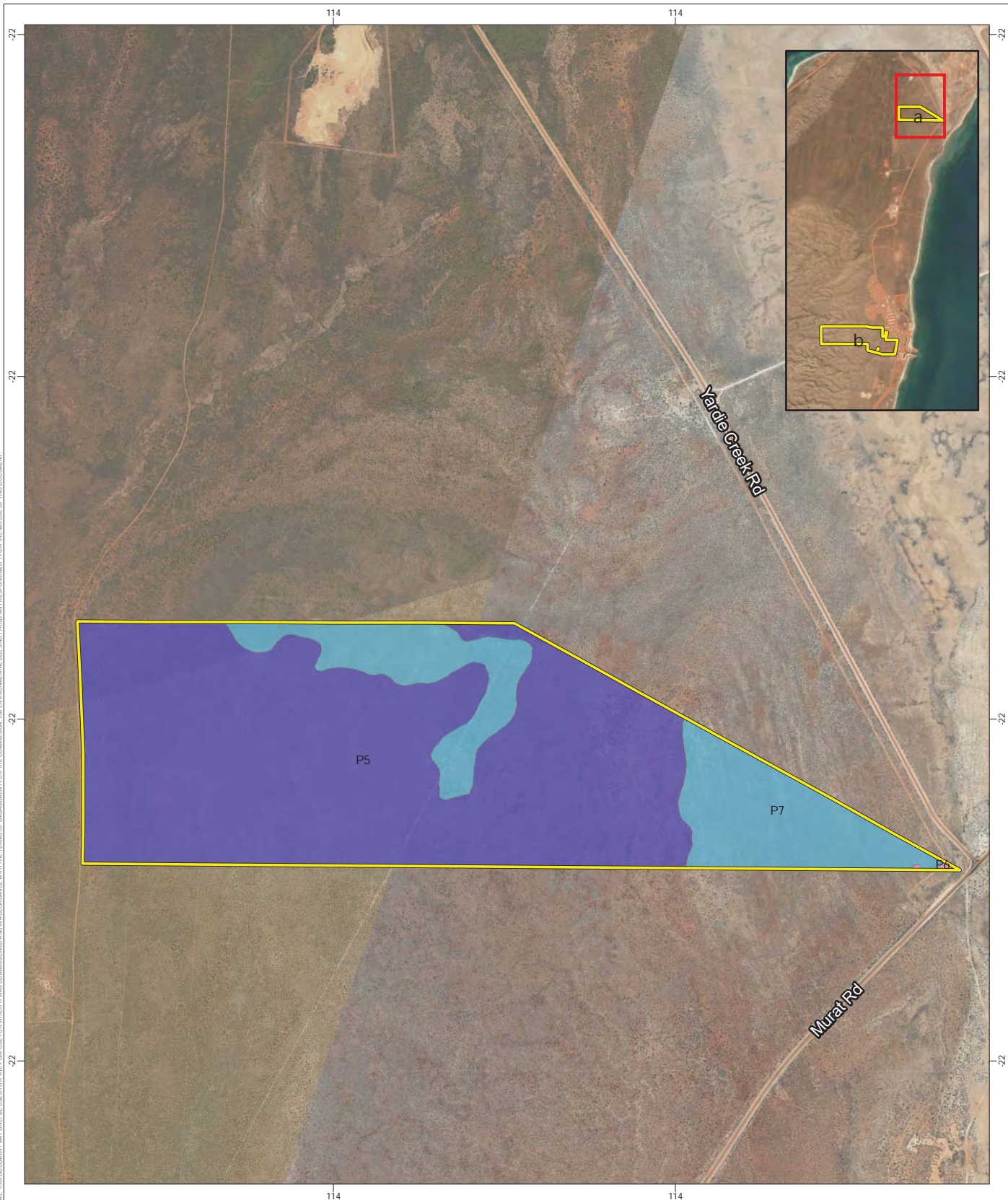
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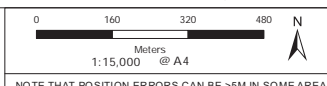
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LF	BD	BD	0

Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

Figure 10b
 Introduced Flora Recorded



- Legend**
- Survey Boundary
 - Vegetation Types**
 - P5
 - P6
 - P7



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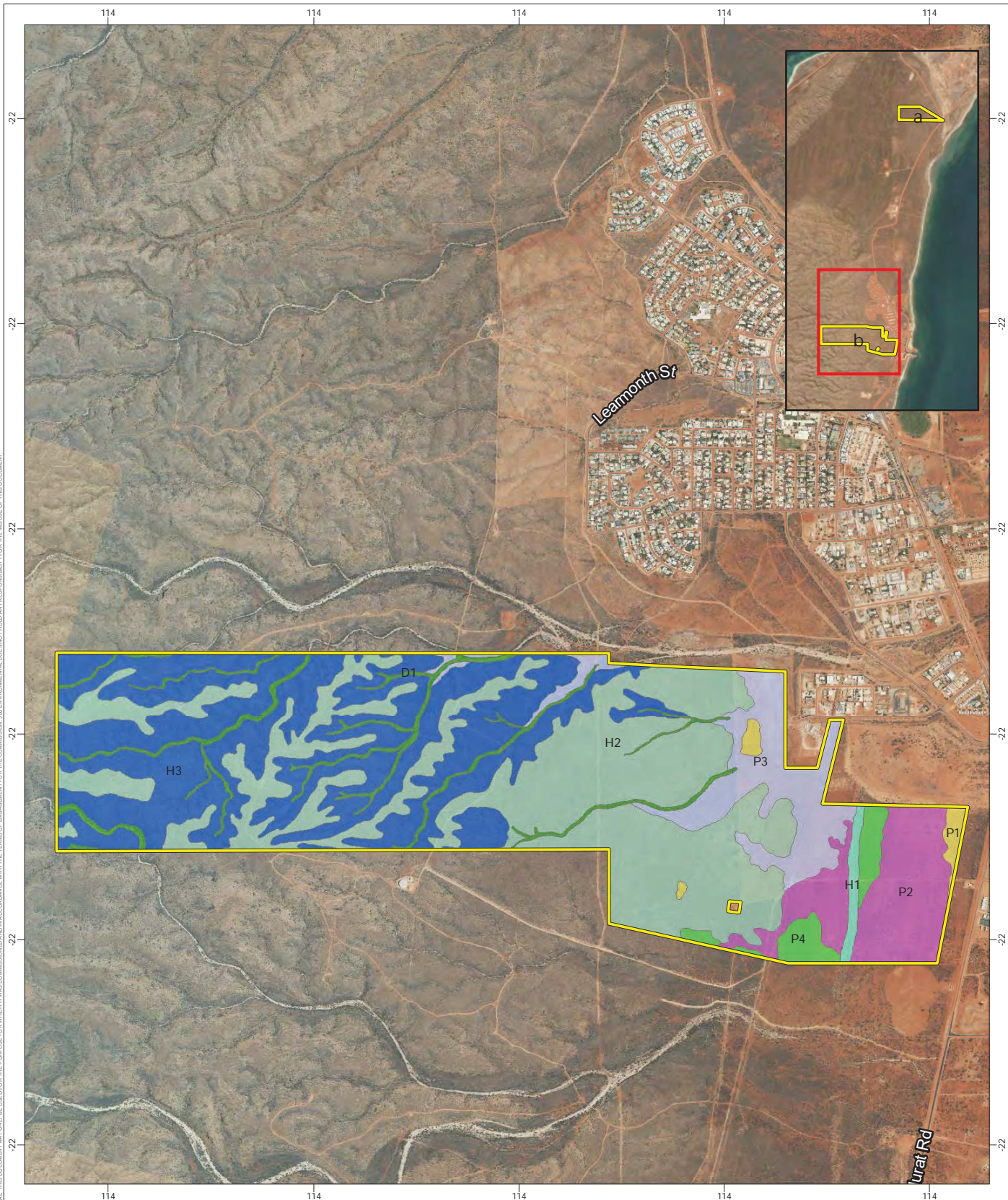
Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

Figure 11a
 Vegetation Types

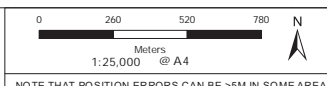
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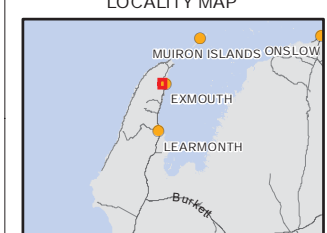
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- Legend**
- Survey Boundary
 - Vegetation Types**
 - D1
 - H1
 - H2
 - H3
 - P1
 - P2
 - P3
 - P4



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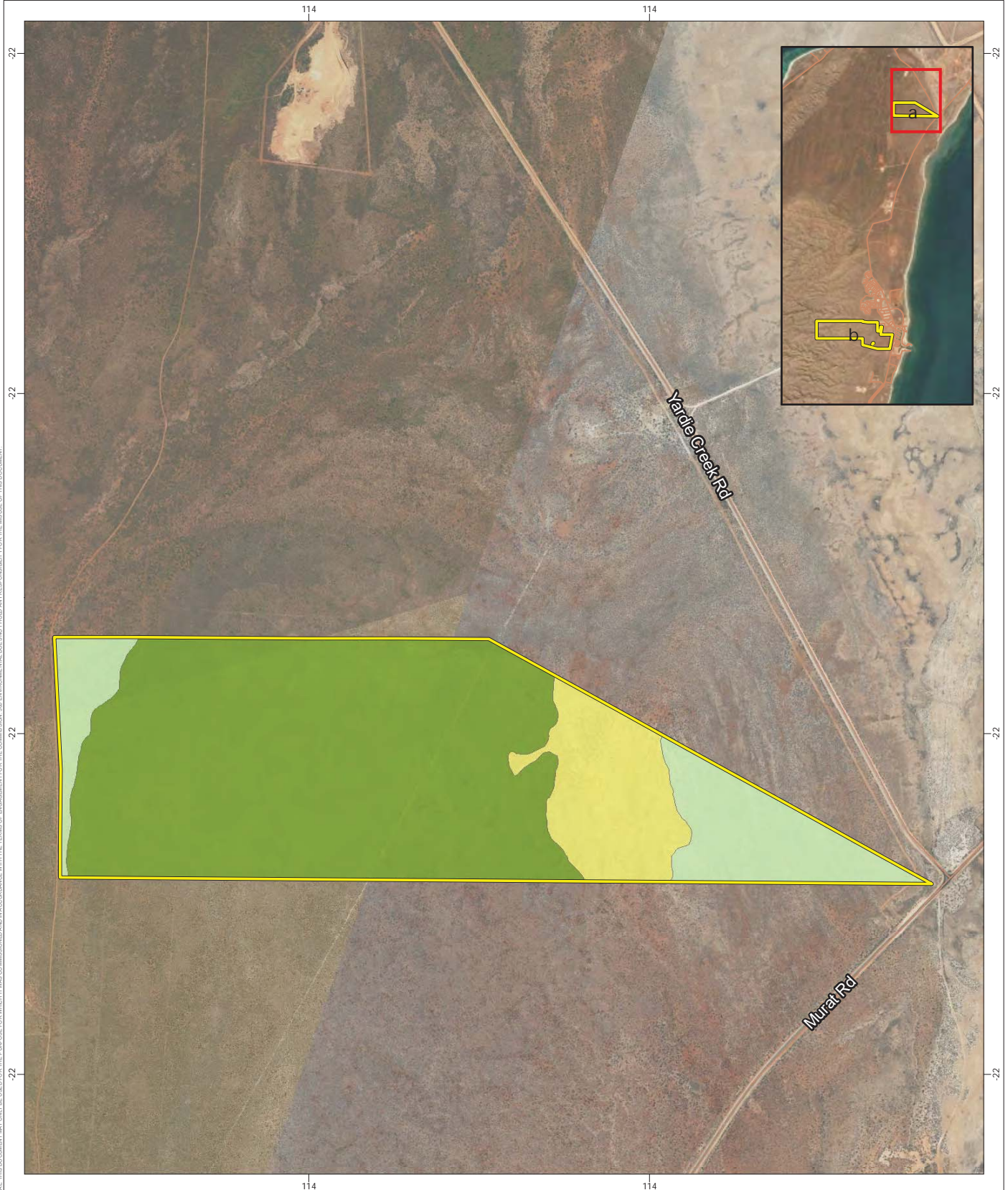
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Horizon power
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 Exmouth
 Biological Survey

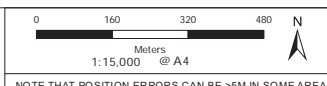
Figure 11b
 Vegetation Types

SLIP ENABLER
 - LOCALITY MAP SOURCED FROM LANDGATE 2021
 - OTHER DATA SOURCED LANDGATE 2021
 - AERIAL PHOTOGRAPHY SOURCED LANDGATE 2021
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- Legend**
- Survey Boundary
 - Vegetation Condition**
 - Very Good
 - Good
 - Poor



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

PROJECT ID 4766		DATE 25/11/2021	
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HORIZONTAL DATUM AND PROJECTION
 GCS GDA 1994

CREATED	CHECKED	APPROVED	REVISION
LF	BD	BD	0

Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

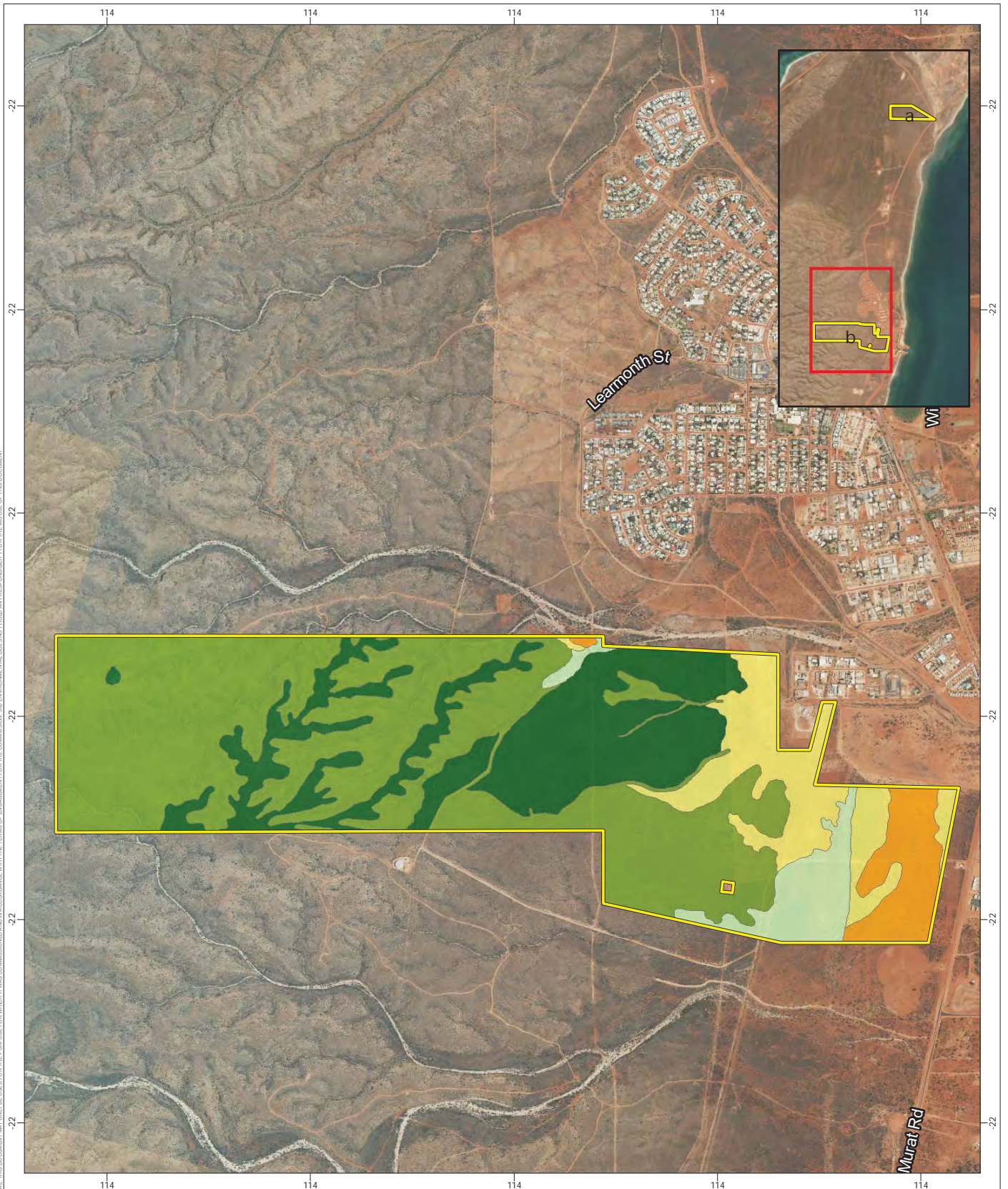


SLIP ENABLER

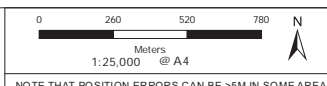
- LOCALITY MAP SOURCED FROM LANDGATE 2021
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Figure 12a
 Vegetation Condition

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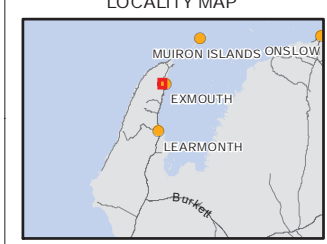


- Legend**
- Survey Boundary
 - Vegetation Condition**
 - Excellent
 - Very Good
 - Good
 - Poor
 - Degraded



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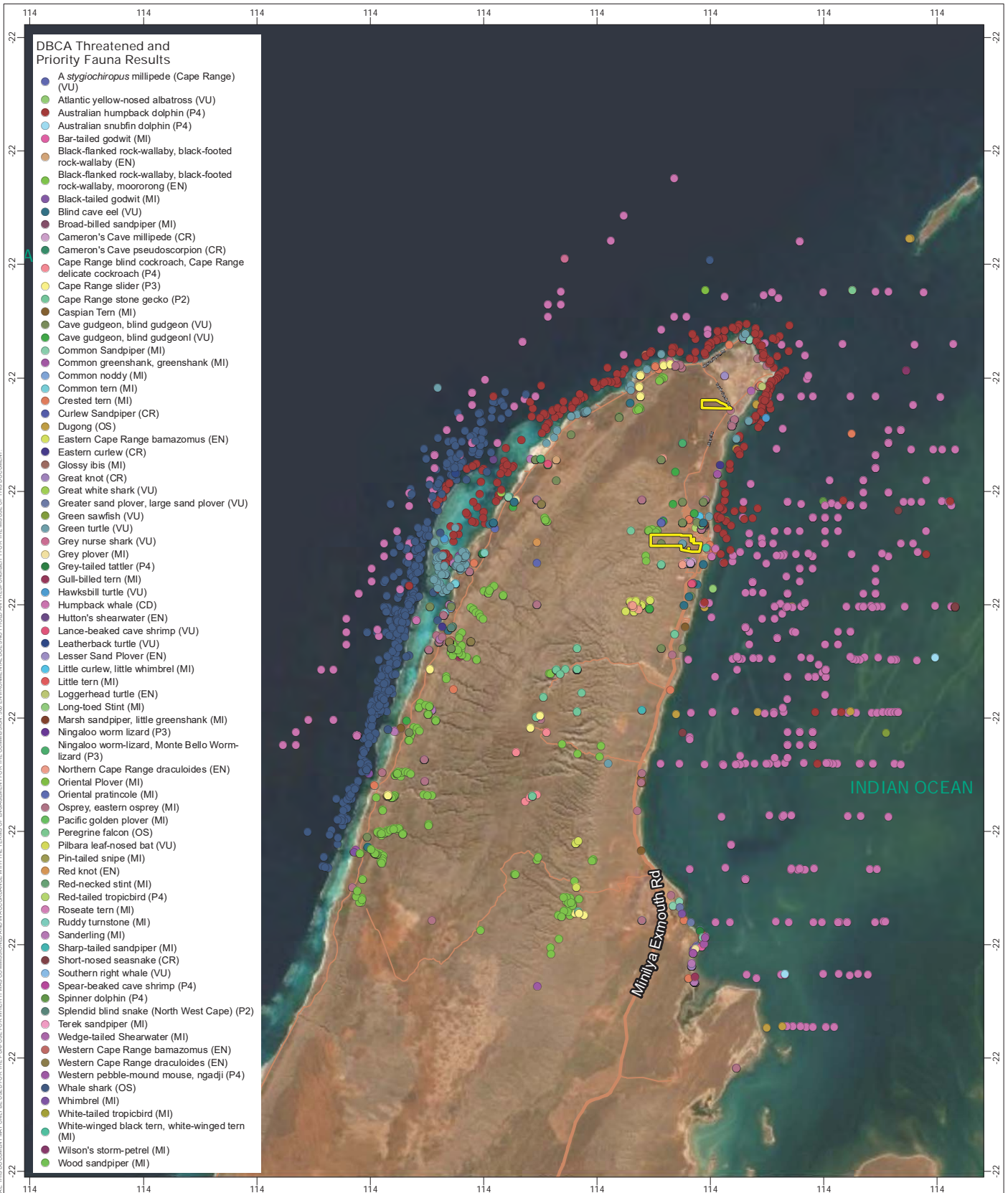
PROJECT ID 4766		DATE 25/11/2021	
HORIZONTAL DATUM AND PROJECTION GCS GDA 1994			
CREATED LF	CHECKED BD	APPROVED BD	REVISION 0

Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

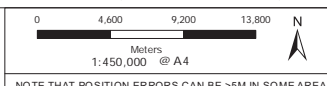
Figure 12b
 Vegetation Condition

SLIP ENABLER
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 - OTHER DATA SOURCED LANDGATE 2021
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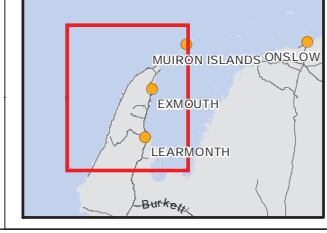
Legend
 Survey Boundary



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LOCALITY MAP



HORIZONTAL DATUM AND PROJECTION
 GCS GDA 1994

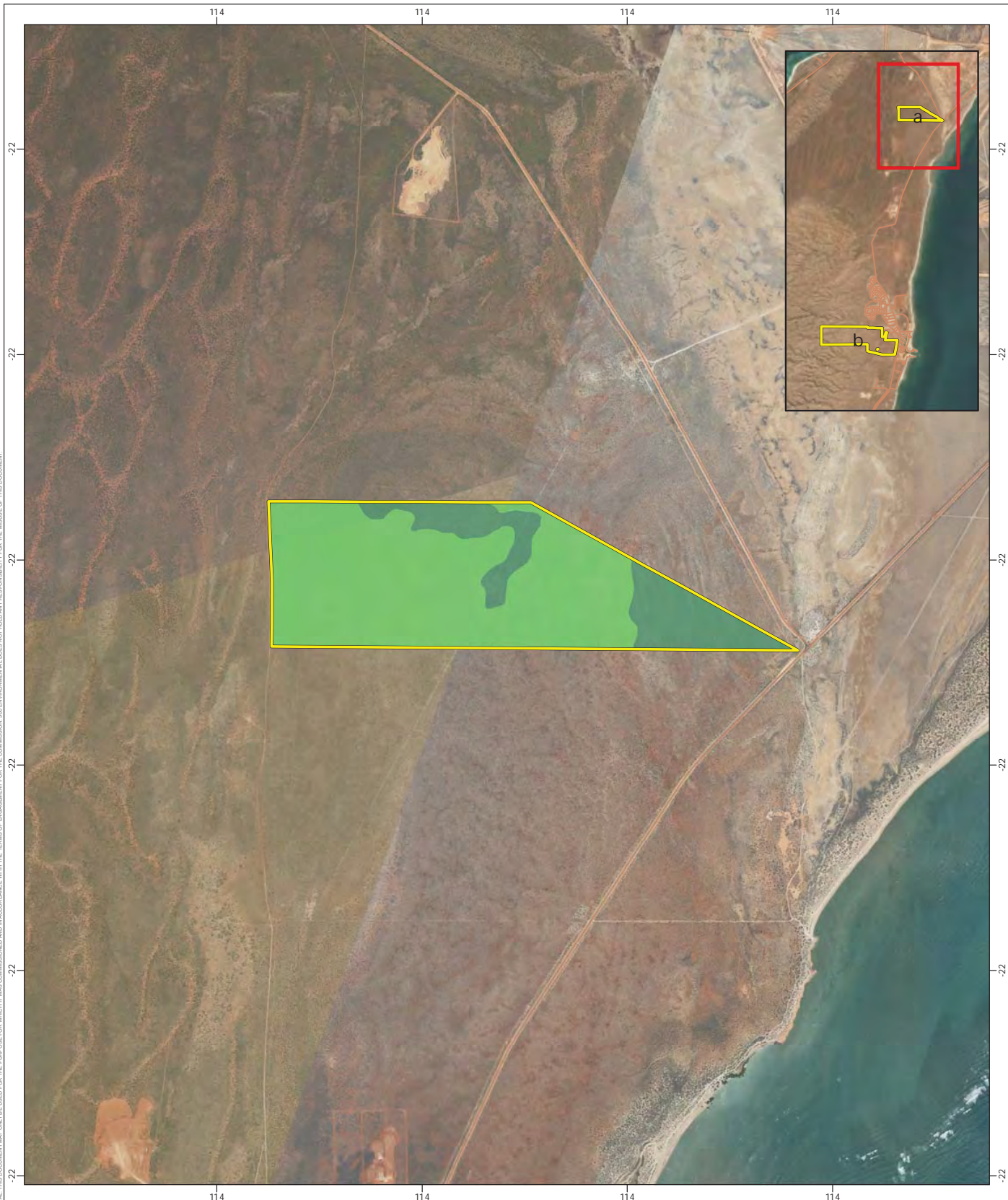
CREATED	CHECKED	APPROVED	REVISION
LF	BD	BD	0

Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

Figure 13
 DBCA Threatened and
 Priority Flora Locations

SLIP ENABLER

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 - OTHER DATA SOURCED LANDGATE 2021
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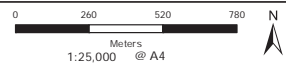
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Legend

- Survey Boundary
- FaunaHab**
- Plains (Shrubland over Tussock Grassland)
- Plains (Shrubland with Atriplex and Frankenia)

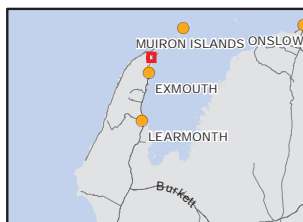


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LOCALITY MAP



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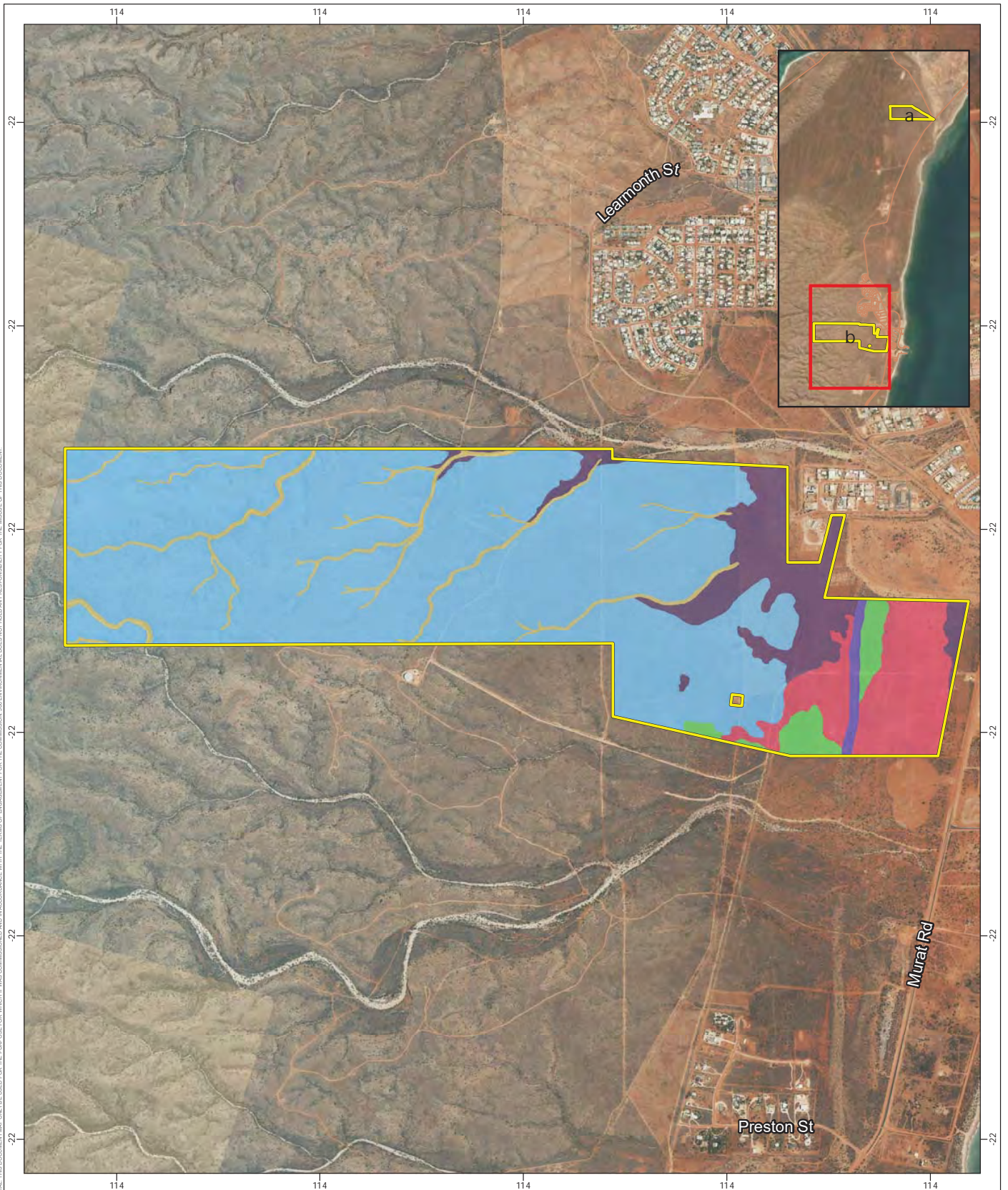
PROJECT ID: 4766 DATE: 22/12/2021

HORIZONTAL DATUM AND PROJECTION: GCS GDA 1994

CREATED	CHECKED	APPROVED	REVISION
LF	BD	BD	0

Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

Figure 14a
 Fauna Habitat

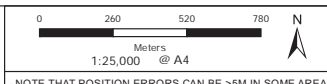


Legend

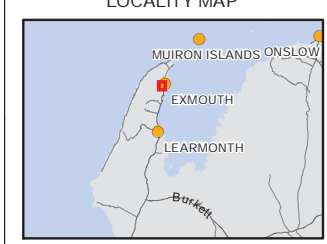
- Survey Boundary
- FaunaHab**
- Drainage line/Creek
- Hills (Open Woodland over Tussock Grassland)
- Hills (Shrubland over Hummock Grassland)
- Plains (Shrubland over Hummock Grassland)
- Plains (Shrubland over Tussock Grassland)
- Plains (Woodland)

SLIP ENABLER

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PROJECT ID: 4766
 DATE: 22/12/2021

HORIZONTAL DATUM AND PROJECTION: GCS GDA 1994

CREATED	CHECKED	APPROVED	REVISION
LF	BD	BD	0

Horizon power
 Lot 284, Lot 505, Lot 550, Reserve 51970,
 Exmouth
 Biological Survey

Figure 14b
 Fauna Habitat

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Appendices

Appendix A Literature Review

Report	Project Area	Survey Timing	Survey Effort	Conservation Significant Ecological Communities	Conservation Significant Flora	Introduced Flora
Exmouth Lighthouse Resort Borefield – Ecological Survey Report (Strategen JBS&G, 2020)	2.8 km west of Lot 284	June 2020	Reconnaissance flora and vegetation survey: <ul style="list-style-type: none"> • Seven relevés 	None recorded.	<ul style="list-style-type: none"> • <i>Daviesia pleurophylla</i> (P2) • <i>Brachychiton obtusilobus</i> (P4) 	None recorded.
Learmonth (Exmouth) Line Rebuild Flora and Fauna Survey (GHD, 2019)	Partially overlapping with Lot 505 and Reserve 51970	May 2019	<ul style="list-style-type: none"> • Reconnaissance flora and vegetation survey (23 relevés) • Walking traverses 	None recorded.	<ul style="list-style-type: none"> • <i>Tephrosia</i> sp. North West Cape (G. Marsh 81) (P2) • <i>Tinospora esiangkara</i> (P2) • <i>Corchorus congener</i> (P3) • <i>Eremophila forrestii</i> subsp. <i>capensis</i> (P3) 	<ul style="list-style-type: none"> • <i>*Cenchrus ciliaris</i> • <i>*Chloris barbata</i>
Minilya-Exmouth Road Biological Survey, Main Roads WA (GHD, 2016)	2.0 km south of Reserve 51970	October 2015	Detailed flora and vegetation survey: <ul style="list-style-type: none"> • Twenty-nine quadrats 	None recorded	<ul style="list-style-type: none"> • <i>Acacia alexandri</i> (P3) • <i>Corchorus congener</i> (P3) • <i>Owenia acidula</i> (P3) 	<ul style="list-style-type: none"> • <i>*Aerva javanica</i> • <i>*Asphodelus fistulosus</i> • <i>*Avena sativa</i> • <i>*Bidens bipinnata</i> • <i>*Cenchrus ciliaris</i> • <i>*Chenopodium murale</i> • <i>*Chloris barbata</i> • <i>*Citrullus lanatus</i> • <i>*Crotalaria incana</i> subsp. <i>incana</i> • <i>*Cynodon dactylon</i> • <i>*Flaveria trinervia</i> • <i>*Lactuca serriola</i> • <i>*Malvastrum americanum</i> • <i>*Momordica balsamma</i> • <i>*Passiflora foetida</i> • <i>*Salvia verbenaca</i> • <i>*Sigesbeckia orientalis</i> • <i>*Solanum nigrum</i>

Report	Project Area	Survey Timing	Survey Effort	Conservation Significant Ecological Communities	Conservation Significant Flora	Introduced Flora
						<ul style="list-style-type: none"> • <i>*Sonchus asper</i> • <i>*Tamarix aphylla</i> (Declared Pest, WoNS) • <i>*Vachellia farnesiana</i>
Learmonth Pipeline Fabrication Facility - Detailed Flora, Vegetation and Targeted Survey (360 Environmental Pty Ltd, 2018)	33.9 km south of Reserve 51970	May 2017 September 2017 August 2018	<ul style="list-style-type: none"> • Detailed flora and vegetation survey (46 quadrats) • Targeted flora survey 	None recorded.	<ul style="list-style-type: none"> • <i>Corchorus congener</i> (P3) 	<ul style="list-style-type: none"> • <i>*Aerva javanica</i> • <i>*Bidens subalternans</i> var. <i>simulans</i> • <i>*Cenchrus ciliaris</i> • <i>*Chenopodium murale</i> • <i>*Solanum nigrum</i> • <i>*Sonchus oleraceus</i> • <i>*Sisymbrium orientale</i> • <i>*Vachellia farnesiana</i>

Conservation significant flora or vegetation	(Stratagen JBS&G, 2020)	(GHD, 2019)	(GHD, 2016)	(360 Environmental Pty Ltd, 2018)
	2.8 km west of Lot 284	Partially overlapping with Lot 505 and Reserve 51970	2.0 km south of Reserve 51970	33.0 km south of Reserve 51970
P1				
<i>Calytrix</i> sp. Learmonth (S. Fox EMopp 1)		★		✓
P2				
<i>Acacia ryaniana</i>		★		
<i>Acanthocarpus rupestris</i>	★	★		
<i>Calandrinia</i> sp. Cape Range (F. Obbens FO 10/18)	★	★		
<i>Crinum flaccidum</i>			★	
<i>Daviesia pleurophylla</i>	✓	★		
<i>Eremophila occidens</i>	★	★		
<i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i>	★	★		
<i>Tephrosia</i> sp. North West Cape (G. Marsh 81)	★	✓		
<i>Tinospora esiangkara</i>	★	✓	★	
<i>Verticordia serotina</i>	★	★		
P3				
<i>Acacia alexandri</i>	★	★	✓	
<i>Acacia startii</i>	★	★		
<i>Corchorus congener</i>	★	✓	✓	✓

Conservation significant flora or vegetation	(Strategen JBS&G, 2020)	(GHD, 2019)	(GHD, 2016)	(360 Environmental Pty Ltd, 2018)
	2.8 km west of Lot 284	Partially overlapping with Lot 505 and Reserve 51970	2.0 km south of Reserve 51970	33.0 km south of Reserve 51970
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	★	✓		
<i>Grevillea calcicola</i>	★	★		
<i>Gymnanthera cunninghamii</i>		★		
<i>Helminthostachys zeylanica</i>		★		
<i>Owenia acidula</i>			✓	
<i>Phyllanthus fuernrohrii</i>	★	★		
<i>Stackhousia umbellata</i>	★	★		
P4				
<i>Brachychiton obtusilobus</i>	✓	★		
<i>Eremophila youngii</i> subsp. <i>lepidota</i>	★	★		
Threatened and Priority Ecological Communities				
Camerons Cave Troglotic Community (CR)	★	★		
Tussock grasslands or grassy tall or low shrublands of the Yarcowie Land System (Carnarvon Basin) (P1)			★	
Lake Mcleod invertebrate assemblages (P3)			★	

✓ Denotes species was found during survey

★ Denotes species was identified by database searches during desktop assessment, which typically include an additional buffer around the Project Area, but were not found during survey

Report	Project Area	Survey Timing	Survey Effort	Conservation Significant Fauna	Fauna Habitats
Exmouth Lighthouse Resort Borefield – Ecological Survey Report (Strategen JBS&G, 2020)	2.8 km west of Lot 284	June 2020	Desktop Assessment	N/A	N/A
Learmonth (Exmouth) Line Rebuild Flora and Fauna Survey (GHD, 2019)	Partially overlapping with Lot 505 and Reserve 51970	May 2019	Basic fauna survey	<ul style="list-style-type: none"> • <i>Falco peregrinus</i> (OS) • <i>Pandion haliaetus</i> (MI) 	<ul style="list-style-type: none"> • Rocky plains • Creeklines and minor drainage lines • Mixed shrublands on sandy loam plains • Clay flats
Minilya-Exmouth Road Biological Survey, Main Roads WA (GHD, 2016)	2.0 km south of Reserve 51970	October 2015	Basic fauna survey	<ul style="list-style-type: none"> • <i>Pandion haliaetus</i> (MI) • <i>Merops ornatus</i> (MI) 	<ul style="list-style-type: none"> • Mosaic plains • Low rocky outcrop • Creekline • Flats • Pebbly dune • Dune system • Calcareous shield • Mixed scrub on stony slope • Drainage line • Open grass plains with emergent <i>Acacia</i> shrubs • Chenopod plains • Claypan • Scrub on rolling dune • Floodplain

Appendix B Database Searches

Threatened and Priority Flora DBCA Database Search Results

Taxon	ConsStatus	WABank	PopNumber	Location	District	Vesting	Purpose1	Purpose2	CountDate	Inflower	Notes	SoilCond	Landform	RockType	SoilType	SoilColor	Aspect	AssSpecies	Veg_domA1	Veg_domE1	Veg_domC1	Veg_domO1	
<i>Acacia alwoodii</i>	3		1.000000	0.3 km west of Eamouth-Mintyia Road on Charles Knife Road, 22.5 km south of Eamouth, North West Cape. Crown Lease L 3114 996 Lyndon Lot 164.	EMMOUTH	PLB	PAS		29/08/1988	Y	Raid formation. Rocky. With Triodia.		SLOPE					<i>Acacia bivenosa</i>	<i>Acacia bivenosa</i>				
<i>Acacia alwoodii</i>	3		3.000000	Charles Knife Road, 3.8 km west of T junction with Mintyia Eamouth Road, ca 14 km west-north-west of Eamouth. Crown Lease L 3114 996 Lyndon Lot 164.	EMMOUTH	PLB	PAS		05/08/1986	N	Range. Massive outcropping. Open low scrub <i>Ficus</i> , <i>Cassia</i> , <i>Eoacarpus</i> over spinifex.		SLOPE	LIMESTN			E	<i>Eucalyptus opaca</i> , <i>Acacia pyrifolia</i> , <i>Acacia anida</i> , <i>Acacia bivenosa</i>	<i>Eucalyptus opaca</i>	<i>Acacia pyrifolia</i>	<i>Acacia bivenosa</i>	<i>Acacia anida</i>	
<i>Acacia alwoodii</i>	3		4.000000	Charles Knife Road, 2.2 km west of T junction with Mintyia Eamouth Road, ca 15.5 km north-north-west of Eamouth. Crown Lease L 3114 996 Lyndon Lot 164.	EMMOUTH	PLB	PAS		05/08/1986	N	Gravel pit. Freeway soil. White limestone. <i>Leptosoma</i> sp. over spinifex.			LIMESTN	LOAM	PINK		<i>Eucalyptus leucosticta</i> , <i>Mitrasacme cordophylla</i> , <i>Hibbertia leucosticta</i> , <i>Grewia calycata</i>	<i>Eucalyptus foeniculoides</i>	<i>Mitrasacme cordophylla</i>	<i>Grewia calycata</i>	<i>Hibbertia leucosticta</i>	
<i>Acacia alwoodii</i>	3		7.000000	About 8 km south of Eamouth, extending from Cape Range [limestone Mine, ca 3 km west of Eamouth Mintyia Road, through to the coast (4.6 km)]	EMMOUTH	NON	UCL		24/11/1997	N	Shrub stagepe with <i>Acacia pyrifolia</i> , <i>Senna artemisioides</i> sp. <i>calophylla</i> .	DRY		LIMESTN	SAND	RED		<i>Acacia bivenosa</i> , <i>Triodia basendani</i> , <i>Triodia pungens</i> , <i>Mitrasacme cordophylla</i>	<i>Acacia bivenosa</i>	<i>Triodia basendani</i>	<i>Mitrasacme cordophylla</i>	<i>Triodia pungens</i>	
<i>Acrothocarpus rugosus</i>	2		2.000000	UCL. 3.5 miles (5.6 km) south of Eamouth township.	EMMOUTH	NON	UCL		11/05/1965	Y		OD. CREEK	LIMESTN	SAND	RED								
<i>Davidsonia pleurophylla</i>	2		1.000000	In dune ca 150 m north of northern fence of Harold North Naval Base, Eamouth. 8th Range. Lot 284 Murat Road. Crown Reserve 37664.	EMMOUTH	LGA	FIR		12/10/2001	Y	Low island dune running north-south with loosely sorted sand. Shrubland.		R. DUNE		SAND	RED. BROWN		<i>Myoporum montanum</i> , <i>Acacia coriacea</i> , <i>Grewia stenobotrya</i>	<i>Myoporum montanum</i>	<i>Acacia coriacea</i>	<i>Grewia stenobotrya</i>		
<i>Grewia calycata</i>	3		1.000000	Cape Range National Park (Crown Reserve 27288). Egn. UCL. 1817th Penning, Basaltic outcrop(s) 7 km from main road (Mintyia Eamouth Road), on Charles Knife Road.	EMMOUTH	CC	NP		30/08/1964	N													
<i>Grewia calycata</i>	3		4.000000	Freshhold, 1 Yards Creek Road, North West Cape. Lighthouse Hill, northernmost edge of Cape Range. [700 m south from Vlamings Head]	EMMOUTH	PHI			17/06/1995	N	Soil Condition - Skeletal; Exposed. Low coastal heath with <i>Triodia</i> sp., <i>Argemone</i> sp., <i>Sarcocolla</i> sp., and <i>Sarcodroma</i> sp.		CREST	LIMESTN		RED		<i>Ficus platyphloa</i>	<i>Ficus platyphloa</i>				
<i>Trochoceros estinglora</i>	2		2.000000	UCL. North West Cape, ca 20 km south of Eamouth centre in creek south of Mowbawa Creek, 150 to 200 m west of powerline parallel to main road.	EMMOUTH	NON	UCL		24/07/1995	Y	Low creek bank near end of low spur. Calcareous.		OUTCROP	LIMESTN	LOAM	ORANGE	E	<i>Commersonia australis</i> , <i>Enchlyana tomentosa</i> , <i>Ficoides olivoides</i>	<i>Commersonia australis</i>	<i>Enchlyana tomentosa</i>	<i>Ficoides olivoides</i>		

Western Australian Herbarium Database Search Results

Taxon	Cons. Code	Plant Desc.	Site	Vegetation	Locality	Date
<i>Acacia alexandri</i>	3	Open bush to 1.5 m.			Shothole Canyon, Exmouth	28/10/1983
<i>Acacia alexandri</i>	3	Spreading shrub 2 m tall; canopy erect, yellow green as are branches; phyllodes 10 cm x 5 mm, soft, fleshy, subtended by paired spiny stipules.	E slope of range, massive outcropping limestone.	Open mallee Eucalyptus opaca (glossy leaves), over very open low scrub Acacia pyrifolia, Ficus, Cassia, Exocarpos spp. with Acacia arida, A. bivenosa over tall spinifex.	On Charles Knife Road 3.8 km W of T-junction with Murat Road (main road), ca 14 km WNW of Learmonth	5/08/1986
<i>Acacia alexandri</i>	3	Open bush to 1.5 m.			Shothole Canyon, Exmouth	9/09/1983
<i>Acacia alexandri</i>	3	Glabrous shrub 2.5 m tall; stems slender, erect; smooth grey bark, becoming greenish brown then dull reddish yellow-green on branchlets; phyllodes erect, dull, fleshy, yellow green, subtended by 2 dark brown spiny stipules; infli. paired, spreading away f	Gradual slope NW aspect, near foot of subdued stony ridge on crest of range, pale pinkish brown loam and surface limestone, some massive pavements.	Open shrub mallee of Eucalyptus aff. opaca over scrub of Acacia bivenosa, A. pyrifolia, Hibiscus sp., Ipomæa costata and Exocarpos sp.	On Charles Knife Road, 11.1 km W of T-junction with Murat Road (main road), ca 20 km NW of Learmonth	5/08/1986
<i>Acacia alexandri</i>	3	Sterile, spreading shrub to 1.5 m x 1.5 m; basal bark dark grey, fissured irregularly; moderately dense canopy; phyllodes erect fleshy, olive green; branchlets red brown then greenish brown as they mature.	Gravel pit, pink powdery loam and white limestone.	Eucalyptus aff. foecunda OSM over low scrub with Melaleuca ? cardiophylla, Hibbertia spicata, Leptosema sp., Grevillea calcicola over spinifex.	On Charles Knife Road 6.2 km W of T-junction with Murat Road (main road), ca 15.5 km NNW of Learmonth	5/08/1986
<i>Brachychiton obtusilobus</i>	4	Tree ca 5 m tall. Bark smooth, pale grey. Leaves glossy green. Fruits mainly dry, empty. Pods matte black, in clusters of up to 5.	Limestone ridge.	With low tree and shrub vegetation.	Charles Knife Road, Cape Range National Park, ca 10 km from the Exmouth main road	2/05/1977
<i>Brachychiton obtusilobus</i>	4	Tree 15 ft. In pod.	Sandy plain.	Spinifex and scrub.	Between Exmouth township and U.S. Base at North West Cape	21/07/1964
<i>Brachychiton obtusilobus</i>	4	Spreading tree to 25 ft. Flowers greenish; fruit black.	On hill top at base of gorge.		Cape Range, 9 miles N of Learmonth	30/08/1960
<i>Brachychiton obtusilobus</i>	4	Tree 5 m.	In rocky, limestone soil.		Charles Knife Road, Cape Range National Park,	3/05/1977
<i>Corchorus congener</i>	3				Hall Street, Exmouth townsite	26/07/2011
<i>Corchorus congener</i>	3				2 km E of Lighthouse, Exmouth, Cape Range	18/09/1964
<i>Corchorus congener</i>	3	Spreading shrub 35 cm; flowers yellow.	In red loam with limestone.		5-6 miles S of Exmouth	25/05/1965
<i>Corchorus congener</i>	3	Shrub.	Pleistocene deep red sandplains with an adjacent small limestone rise.	Sparse shrubland of Acacia bivenosa, Senna glutinosa subsp. pruinosa over low dense shrubland of A. gregorii and mid-dense hummock grassland of Triodia epactia and T. basedowii. As the limestone rise progresses S, the vegetation grades into shrubland of	Unallocated Crown Land, ca. 12.04 km N (8 degrees) of Exmouth and ca. 45.46 km SE (129 degrees) of Vlaming Head Lighthouse	1/10/2009
<i>Corchorus congener</i>	3	Shrub.	Coastal plain. Red-brown sandy loam.	Shrubland of Acacia bivenosa and A. sychronica over hummock grassland of Triodia epactia.	Unallocated Crown Land, located on Shothole Canyon Road, ca. 13.05 km SSW (199 degrees) of Exmouth and ca. 27.41 km S (184 degrees) of Vlaming Head Lighthouse	25/09/2009
<i>Cucumis</i> sp. Barrow Island (D.W. Goodall 1264)	2	Herbaceous perennial vine with up to 5 flower fascicles per leaf axil, growing up to 2 m tall.	Wide, 3m deep wash in a limestone landscape.	Tussock grassland of Cenchrus ciliaris and a tall shrub overstorey of Acacia tetragonophylla.	E side of North West Cape and 11.1 from Exmouth on a bearing of 190 degrees on main road to Learmonth, Pilbara Region	1/05/2017
<i>Daviesia pleuraphylla</i>	2	Broom-like, single or few stemmed, to 3 m. Petals yellow and dark red.	N-S sand dune, summit of dune. Deep red sand.	Shrubland dominated by this species.	Exmouth, Harold Holt Naval Base, c. 150 m N of northern fence of base.	12/10/2001
<i>Eremophila forrestii</i> subsp. capensis	3	Shrubs to 1 m. Unusually few stemmed, rarely much branched, corolla pale carmine on both surfaces unspotted or spotted deep carmine in the tube and on the base of the lower lip but very variable, new growth often lemon yellow.	On limestone slopes.	Amongst Mallee over spinifex.	2.9 km E of No 2 Oil Well, Charles Knife Road, Cape Range	24/08/1986
<i>Eremophila forrestii</i> subsp. capensis	3	Shrub.	Pleistocene deep red sandplains with an adjacent small limestone rise.	Sparse shrubland of Acacia bivenosa, Senna glutinosa subsp. pruinosa over low dense shrubland of A. gregorii and mid-dense hummock grassland of Triodia epactia and T. basedowii. As the limestone rise progresses S, the vegetation grades into shrubland of	Unallocated Crown Land, ca. 12.04 km N (8 degrees) of Exmouth and ca. 45.46 km SE (129 degrees) of Vlaming Head Lighthouse	1/10/2009
<i>Eremophila youngii</i> subsp. lepidota	4	Straggly shrub, 2-2.5 m. Flowers red-pink; leaves narrow, lanceolate, grey.	Red soil.		56 km on Exmouth Road	21/08/1986
<i>Grevillea calcicola</i>	3	Shrub 3-4 m high. Flowers cream.			Cape Range, N of Learmonth	30/08/1960
<i>Grevillea calcicola</i>	3	Shrub 3-4 m high with cream flowers.			Cape Range, N of Learmonth	30/08/1960
<i>Gymnanthera cunninghamii</i>	3	Perennial shrub, 2 m high x 1 m wide. White flowers.	Drainage line and nearby floodplain. Red-brown clay loam over limestone.	Corymbia hamersleyana over Triodia epactia, Triodia angusta and Cenchrus ciliaris.	Within 100 m of Minilya-Exmouth Road, Exmouth	31/10/2016
<i>Stackhousia umbellata</i>	3	Petals bright yellow.	Creek bed in canyon. Limestone rubble.		Shothole Canyon Road	/08/1978
<i>Stackhousia umbellata</i>	3	Shrub.		Shrubland of Hibbertia spicata subsp. spicata over hummock grassland of Triodia wiseana. Acacia tetragonophylla and A. sychronica tall shrubland over Triodia epactia and Cenchrus ciliaris grasslands.	Unallocated Crown Land, ca. 13.57 km N (357 degrees) of Exmouth and ca. 1.53 km SE (143 degrees) of Vlaming Head Lighthouse	27/09/2009
<i>Tephrosia</i> sp. North West Cape (G. Marsh 81)	2	Low perennial shrub, 0.3 m high x 0.1 m wide.	Plain. Red brown clay-loam over limestone.		Within 100 m of Minilya-Exmouth Road, Exmouth	31/10/2016
<i>Tephrosia</i> sp. North West Cape (G. Marsh 81)	2	Herb 5 cm x 20 cm. Flowers peach.	Limestone rise. Orange pindal soil over exposed limestone rock. Burnt c. 3 years ago.	Low shrubs. Associated species: Acacia bivenosa, A. gregorii, Triodia sp., Solanum lasiophyllum, S. diversiflorum, Indigofera monophylla, Melaleuca, Senna artemisioides subsp. oligophylla, Corymbia hamersleyana, Eremophila forrestii.	Stokes-Hughes Road at the back (western edge) of Exmouth township	27/06/2019

Threatened and Priority Ecological Communities Database Search Results

COM_ID	COM_NAME	STATE_CATG	COMM_CATG	BUFFER	HECTARES
Bundera	Cape Range Remipede Community (Bundera Sinkhole)	Critically Endangered		2000	0.2844000000
Camerons Cave	Camerons Cave Troglobitic Community	Critically Endangered		500	11.1804000000

Conservation Significant Fauna DBCA Database Search Results

SCI_NAME	COM_NAME	CLASS	WA_LISTING	WA_status	EPBCstatus
<i>Actitis hypoleucos</i>	Common Sandpiper	BIRD	Specially Protected - migratory	MI	MI
<i>Anous stolidus</i>	common noddy	BIRD	Specially Protected - migratory	MI	MI
<i>Ardenna pacifica</i>	Wedge-tailed Shearwater	BIRD	Specially Protected - migratory	MI	MI
<i>Arenaria interpres</i>	Ruddy turnstone	BIRD	Specially Protected - migratory	MI	MI
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	BIRD	Specially Protected - migratory	MI	MI
<i>Calidris alba</i>	Sanderling	BIRD	Specially Protected - migratory	MI	MI
<i>Calidris canutus</i>	Red knot	BIRD	Threatened - Endangered	EN	EN
<i>Calidris ferruginea</i>	Curlew Sandpiper	BIRD	Threatened - Critically endangered	CR	CR
<i>Calidris ruficollis</i>	Red-necked stint	BIRD	Specially Protected - migratory	MI	MI
<i>Calidris subminuta</i>	Long-toed Stint	BIRD	Specially Protected - migratory	MI	MI
<i>Calidris tenuirostris</i>	Great knot	BIRD	Threatened - Critically endangered	CR	CR
<i>Charadrius leschenaultii</i>	Greater sand plover, large sand plover	BIRD	Threatened - Vulnerable	VU	MI
<i>Charadrius mongolus</i>	Lesser Sand Plover	BIRD	Threatened - Endangered	EN	EN
<i>Charadrius veredus</i>	Oriental Plover	BIRD	Specially Protected - migratory	MI	MI
<i>Chlidonias leucopterus</i>	White-winged black tern, white-winged tern	BIRD	Specially Protected - migratory	MI	MI
<i>Falco peregrinus</i>	Peregrine falcon	BIRD	Specially Protected - other specially protected	OS	
<i>Gallinago stenura</i>	Pin-tailed snipe	BIRD	Specially Protected - migratory	MI	MI
<i>Gelochelidon nilotica</i>	Gull-billed tern	BIRD	Specially Protected - migratory	MI	MI
<i>Glareola maldivarum</i>	Oriental pratincole	BIRD	Specially Protected - migratory	MI	MI
<i>Hydroprogne caspia</i>	Caspian Tern	BIRD	Specially Protected - migratory	MI	MI
<i>Limicola falcinellus</i>	Broad-billed sandpiper	BIRD	Specially Protected - migratory	MI	MI
<i>Limosa lapponica</i>	Bar-tailed godwit	BIRD	Specially Protected - migratory	MI	MI
<i>Limosa limosa</i>	Black-tailed godwit	BIRD	Specially Protected - migratory	MI	MI
<i>Numenius madagascariensis</i>	Eastern curlew	BIRD	Threatened - Critically endangered	CR	CR
<i>Numenius minutus</i>	Little curlew, little whimbrel	BIRD	Specially Protected - migratory	MI	MI
<i>Numenius phaeopus</i>	Whimbrel	BIRD	Specially Protected - migratory	MI	MI
<i>Oceanites oceanicus</i>	Wilson's storm-petrel	BIRD	Specially Protected - migratory	MI	MI
<i>Pandion cristatus</i>	Osprey, eastern osprey	BIRD	Specially Protected - migratory	MI	MI
<i>Phaethon lepturus</i>	White-tailed tropicbird	BIRD	Specially Protected - migratory	MI	MI
<i>Phaethon rubricauda</i>	Red-tailed tropicbird	BIRD	Priority	P4	MI
<i>Plegadis falcinellus</i>	Glossy ibis	BIRD	Specially Protected - migratory	MI	MI
<i>Pluvialis fulva</i>	Pacific golden plover	BIRD	Specially Protected - migratory	MI	MI
<i>Pluvialis squatarola</i>	Grey plover	BIRD	Specially Protected - migratory	MI	MI
<i>Puffinus huttoni</i>	Hutton's shearwater	BIRD	Threatened - Endangered	EN	
<i>Sterna dougallii</i>	Roseate tern	BIRD	Specially Protected - migratory	MI	MI
<i>Sterna hirundo</i>	Common tern	BIRD	Specially Protected - migratory	MI	MI
<i>Sternula albifrons</i>	Little tern	BIRD	Specially Protected - migratory	MI	MI
<i>Thalassarche chlororhynchos</i>	Atlantic yellow-nosed albatross	BIRD	Threatened - Vulnerable	VU	MI
<i>Thalasseus bergii</i>	Crested tern	BIRD	Specially Protected - migratory	MI	MI
<i>Tringa brevipes</i>	Grey-tailed tattler	BIRD	Priority	P4	MI
<i>Tringa glareola</i>	Wood sandpiper	BIRD	Specially Protected - migratory	MI	MI
<i>Tringa nebularia</i>	Common greenshank, greenshank	BIRD	Specially Protected - migratory	MI	MI
<i>Tringa stagnatilis</i>	Marsh sandpiper, little greenshank	BIRD	Specially Protected - migratory	MI	MI
<i>Xenus cinereus</i>	Terek sandpiper	BIRD	Specially Protected - migratory	MI	MI

Conservation Significant Fauna DBCA Database Search Results

SCI_NAME	COM_NAME	CLASS	WA_LISTING	WA_status	EPBCstatus
<i>Dugong dugon</i>	Dugong	MAMMAL	Specially Protected - other specially protected	OS	
<i>Eubalaena australis</i>	Southern right whale	MAMMAL	Threatened - Vulnerable	VU	EN
<i>Megaptera novaeangliae</i>	Humpback whale	MAMMAL	Specially Protected - conservation dependent	CD	VU
<i>Orcaella heinsohni</i>	Australian snubfin dolphin	MAMMAL	Priority	P4	MI
<i>Petrogale lateralis lateralis</i>	black-flanked rock-wallaby, black-footed rock-wallaby, moororong	MAMMAL	Threatened - Endangered	EN	EN
<i>Pseudomys chapmani</i>	Western pebble-mound mouse, ngadji	MAMMAL	Priority	P4	
<i>Rhinonictes aurantia</i> (Pilbara)	Pilbara leaf-nosed bat	MAMMAL	Threatened - Vulnerable	VU	VU
<i>Sousa sahalensis</i>	Australian humpback dolphin	MAMMAL	Priority	P4	MI
<i>Stenella longirostris</i>	Spinner dolphin	MAMMAL	Priority	P4	MI
<i>Aipysurus apraefrontalis</i>	Short-nosed seasnake	REPTILE	Threatened - Critically endangered	CR	CR
<i>Anilius splendidus</i>	splendid blind snake (North West Cape)	REPTILE	Priority	P2	
<i>Aprasia rostrata</i>	Ningaloo worm lizard	REPTILE	Priority	P3	
<i>Caretta caretta</i>	loggerhead turtle	REPTILE	Threatened - Endangered	EN	EN
<i>Chelonia mydas</i>	Green turtle	REPTILE	Threatened - Vulnerable	VU	VU
<i>Dermochelys coriacea</i>	leatherback turtle	REPTILE	Threatened - Vulnerable	VU	EN
<i>Diplodactylus capensis</i>	Cape Range stone gecko	REPTILE	Priority	P2	
<i>Eretmochelys imbricata</i>	Hawksbill turtle	REPTILE	Threatened - Vulnerable	VU	VU
<i>Lerista allochira</i>	Cape Range slider	REPTILE	Priority	P3	

NatureMap Species Report

Created By Guest user on 06/08/2021

Kingdom	Plantae
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	114° 07' 16" E, 21° 56' 45" S
Buffer	40km
Group By	Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	569	2115
Priority 1	1	1
Priority 2	10	44
Priority 3	10	78
Priority 4	2	12
TOTAL	592	2250

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Priority 1				
1.	49009 <i>Calytrix</i> sp. Learmonth (S. Fox EMopp 1)		P1	Y
Priority 2				
2.	13071 <i>Acacia ryaniana</i>		P2	
3.	1210 <i>Acanthocarpus rupestris</i>		P2	
4.	49022 <i>Calandrinia</i> sp. Cape Range (F. Obbens FO 10/18)		P2	
5.	1491 <i>Crinum flaccidum</i> (Native Crinum)		P2	
6.	14375 <i>Daviesia pleurophylla</i>		P2	
7.	15032 <i>Eremophila occidentis</i>		P2	
8.	17327 <i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i>		P2	Y
9.	46053 <i>Tephrosia</i> sp. North West Cape (G. Marsh 81)		P2	
10.	17345 <i>Tinospora esiangkara</i>		P2	Y
11.	12457 <i>Verticordia serotina</i>		P2	
Priority 3				
12.	13074 <i>Acacia alexandri</i>		P3	
13.	13076 <i>Acacia startii</i>		P3	
14.	18411 <i>Corchorus congener</i>		P3	
15.	29715 <i>Eremophila forrestii</i> subsp. <i>capensis</i>		P3	
16.	1972 <i>Grevillea calcicola</i>		P3	
17.	12832 <i>Gymnanthera cunninghamii</i>		P3	
18.	16 <i>Helminthostachys zeylanica</i>		P3	
19.	19 <i>Lygodium flexuosum</i>		P3	
20.	4677 <i>Phyllanthus fuemrohrii</i> (Sand Sponge)		P3	
21.	4736 <i>Stackhousia umbellata</i>		P3	
Priority 4				
22.	12714 <i>Brachychiton obtusilobus</i>		P4	
23.	16040 <i>Eremophila youngii</i> subsp. <i>lepidota</i>		P4	
Non-conservation taxon				
24.	9080 <i>Abutilon cunninghamii</i>			
25.	4891 <i>Abutilon fraseri</i> (Lantern Bush)			
26.	11325 <i>Abutilon indicum</i> var. <i>australiense</i>			
27.	4895 <i>Abutilon lepidum</i>			
28.	4901 <i>Abutilon otocarpum</i> (Desert Chinese Lantern)			
29.	<i>Abutilon</i> sp.			
30.	14115 <i>Abutilon</i> sp. Cape Range (A.S. George 1312)			
31.	42920 <i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618)			
32.	3223 <i>Acacia arida</i>			
33.	3241 <i>Acacia bivenosa</i>			
34.	3270 <i>Acacia coriacea</i> (Wirewood)			
35.	13500 <i>Acacia coriacea</i> subsp. <i>coriacea</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
36.	3356 <i>Acacia gregorii</i> (Gregory's Wattle)			
37.	29015 <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>			
38.	3534 <i>Acacia sclerosperma</i> (Limestone Wattle)			
39.	13078 <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>			
40.	29135 <i>Acacia sericophylla</i>			
41.	3549 <i>Acacia spathulifolia</i>			
42.	19456 <i>Acacia stellaticeps</i>			
43.	13070 <i>Acacia synchronicia</i>			
44.	3577 <i>Acacia tetragonophylla</i> (Kurara, Wakalpuka)			
45.	3606 <i>Acacia xiphophylla</i>			
46.	1208 <i>Acanthocarpus preissii</i>			
47.	1209 <i>Acanthocarpus robustus</i>			
48.	1211 <i>Acanthocarpus verticillatus</i>			
49.	48409 <i>Acetabularia caliculus</i>			
50.	2645 <i>Achyranthes aspera</i> (Chaff Flower)			
51.	7817 <i>Actinobole uliginosum</i> (Flannel Cudweed)			
52.	4583 <i>Adriana tomentosa</i>			
53.	17422 <i>Adriana tomentosa</i> var. <i>tomentosa</i>			
54.	2646 <i>Aerva javanica</i> (Kapok Bush)	Y		
55.	4739 <i>Alectryon oleifolius</i>			
56.	11487 <i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>			
57.	2653 <i>Alternanthera pungens</i> (Khaki Weed)	Y		
58.	4904 <i>Alyogyne cuneiformis</i> (Coastal Hibiscus)			
59.	4907 <i>Alyogyne pinoniana</i> (Sand Hibiscus)			
60.	26453 <i>Amansia rhodantha</i>			
61.	2657 <i>Amaranthus clementii</i>			
62.	20018 <i>Amaranthus undulatus</i>			
63.	126 <i>Amphibolis antarctica</i> (Sea Nymph)			
64.	2369 <i>Amyema benthamii</i>			
65.	2372 <i>Amyema fitzgeraldii</i> (Pincushion Mistletoe)			
66.	2380 <i>Amyema miquelii</i> (Stalked Mistletoe)			
67.	13266 <i>Amyema miraculosa</i> subsp. <i>miraculosa</i>			
68.	2383 <i>Amyema preissii</i> (Wireleaf Mistletoe)			
69.	11874 <i>Amyema sanguinea</i> var. <i>sanguinea</i>			
70.	35872 <i>Anadyomene plicata</i>			
71.	35858 <i>Anadyomene wrightii</i>			
72.	40910 <i>Androcalva luteiflora</i> (Yellow-flowered Rulingia)			
73.	7822 <i>Angianthus acrohyalinus</i> (Hook-leaf Angianthus)			
74.	7827 <i>Angianthus cunninghamii</i> (Coast Angianthus)			
75.	26469 <i>Anotrichium tenue</i>			
76.	7838 <i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y		
77.	207 <i>Aristida contorta</i> (Bunched Kerosene Grass)			
78.	210 <i>Aristida holathera</i>			
79.	12063 <i>Aristida holathera</i> var. <i>holathera</i>			
80.	217 <i>Aristida nitidula</i> (Flat-awned Threawn)			
81.	26486 <i>Asparagopsis taxiformis</i>			
82.	1364 <i>Asphodelus fistulosus</i> (Onion Weed)	Y		
83.	2451 <i>Atriplex bunburyana</i> (Silver Saltbush)			
84.	2453 <i>Atriplex codonocarpa</i> (Flat-topped Saltbush)			
85.	2463 <i>Atriplex isatidea</i> (Coast Saltbush)			
86.	2476 <i>Atriplex semilunaris</i> (Annual Saltbush)			
87.	235 <i>Avena sativa</i> (Common Oat)	Y		
88.	6828 <i>Avicennia marina</i> (White Mangrove)			
89.	26498 <i>Avrainvillea obscura</i>			
90.	1799 <i>Banksia ashbyi</i> (Ashby's Banksia)			
91.	33400 <i>Banksia ashbyi</i> subsp. <i>boreoscaia</i>			
92.	7854 <i>Bidens bipinnata</i> (Bipinnate Beggartick)	Y		
93.	46338 <i>Bidens subalternans</i> var. <i>simulans</i>	Y		
94.	26507 <i>Boergesenia forbesii</i>			
95.	2769 <i>Boerhavia burbridgeana</i>			
96.	2770 <i>Boerhavia coccinea</i> (Tar Vine, Wituka)			
97.	2775 <i>Boerhavia schomburgkiana</i>			
98.	<i>Boerhavia</i> sp.			
99.	11167 <i>Bonamia erecta</i>			
100.	26509 <i>Borometella oligospora</i>			
101.	240 <i>Bothriochloa ewartiana</i> (Desert Bluegrass)			
102.	7871 <i>Brachyscome ciliaris</i>			
103.	<i>Breynia desorii</i>			
104.	750 <i>Bulbostylis barbata</i>			
105.	2860 <i>Calandrinia polyandra</i> (Parakeelya)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
106.	2864 <i>Calandrinia ptychosperma</i>			
107.	7906 <i>Calotis plumulifera</i>			
108.	5484 <i>Calytrix truncatifolia</i>			
109.	3749 <i>Canavalia rosea</i> (Wild Jack Bean)			
110.	2976 <i>Capparis lasiantha</i> (Split Jack, Balqarda)			
111.	2978 <i>Capparis mitchellii</i> (Wild Orange)			
112.	<i>Capparis</i> sp.			
113.	2981 <i>Capparis spinosa</i>			
114.	48291 <i>Capparis spinosa</i> subsp. <i>nummularia</i>			
115.	2797 <i>Carpobrotus rossii</i> (Karkalla)			
116.	<i>Carpobrotus</i> sp. subsp. <i>Thevenard Island (M. White 050)</i>			
117.	2948 <i>Cassytha aurea</i>			
118.	12073 <i>Cassytha aurea</i> var. <i>aurea</i>			
119.	2949 <i>Cassytha capillaris</i>			
120.	11242 <i>Cassytha racemosa</i> forma <i>pilosa</i>			
121.	6569 <i>Catharanthus roseus</i> (Pink Periwinkle)	Y		
122.	26554 <i>Caulerpa brachypus</i>			
123.	26556 <i>Caulerpa cactoides</i>			
124.	42620 <i>Caulerpa chemnitzia</i>			
125.	35158 <i>Caulerpa corynephora</i>			
126.	26559 <i>Caulerpa cupressoides</i>			
127.	27378 <i>Caulerpa cupressoides</i> var. <i>lycopodium</i>			
128.	44547 <i>Caulerpa lamourouxii</i>			
129.	26568 <i>Caulerpa lentillifera</i>			
130.	44551 <i>Caulerpa macrodisca</i>			
131.	26576 <i>Caulerpa serrulata</i>			
132.	26577 <i>Caulerpa sertularioides</i>			
133.	258 <i>Cenchrus ciliaris</i> (Buffel Grass)	Y		
134.	26606 <i>Ceratodictyon spongiosum</i>			
135.	26618 <i>Champia parvula</i>			
136.	26619 <i>Champia stipitata</i>			
137.	12796 <i>Cheilanthes adiantoides</i>			
138.	31 <i>Cheilanthes austrotenuifolia</i>			
139.	37 <i>Cheilanthes lasiophylla</i> (Woolly Cloak Fern)			
140.	2489 <i>Chenopodium gaudichaudianum</i> (Cottony Saltbush)			
141.	266 <i>Chloris barbata</i> (Purpletop Chloris)	Y		
142.	272 <i>Chloris virgata</i> (Feathertop Rhodes Grass)	Y		
143.	26628 <i>Chondria armata</i>			
144.	13114 <i>Chorizema racemosum</i>			
145.	47174 <i>Chrysocephalum apiculatum</i> subsp. <i>pilbarensis</i>			
146.	273 <i>Chrysopogon fallax</i> (Golden Beard Grass)			
147.	26658 <i>Cladophora vagabunda</i>			
148.	44726 <i>Cladophoropsis vaucheriiformis</i>			
149.	2988 <i>Cleome viscosa</i> (Tickweed, Tjinduwadhu)			
150.	6732 <i>Clerodendrum tomentosum</i>			
151.	13689 <i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i>			
152.	13690 <i>Clerodendrum tomentosum</i> var. <i>tomentosum</i>			
153.	35917 <i>Codium arabicum</i>			
154.	26686 <i>Coelarthrum opuntia</i>			
155.	1165 <i>Commelina ensifolia</i> (Wandering Jew, Buargu)			
156.	2776 <i>Commicarpus australis</i> (Perennial Tar Vine)			
157.	19880 <i>Convolvulus angustissimus</i>			
158.	<i>Corchorus</i> Scholl			
159.	18410 <i>Corchorus carmarvonensis</i>			
160.	13560 <i>Corchorus crozophorifolius</i>			
161.	4862 <i>Corchorus parviflorus</i>			
162.	<i>Corchorus</i> sp.			
163.	4865 <i>Corchorus tridens</i>			
164.	17093 <i>Corymbia hamersleyana</i>			
165.	17092 <i>Corymbia opaca</i>			
166.	17084 <i>Corymbia zygophylla</i>			
167.	1284 <i>Corynotheca flexuosissima</i>			
168.	1286 <i>Corynotheca pungens</i>			
169.	3137 <i>Crassula colorata</i> (Dense Stonecrop)			
170.	11563 <i>Crassula colorata</i> var. <i>colorata</i>			
171.	3774 <i>Crotalaria cunninghamii</i> (Green Birdflower, Bilbun)			
172.	18147 <i>Crotalaria incana</i> subsp. <i>incana</i>	Y		
173.	3783 <i>Crotalaria medicaginea</i>			
174.	20179 <i>Crotalaria medicaginea</i> var. <i>neglecta</i>			
175.	17439 <i>Cullen lachnostachys</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
176.	17118 <i>Cullen leucanthum</i>			
177.	17120 <i>Cullen pogonocarpum</i>			
178.	6662 <i>Cuscuta australis</i> (Australian Dodder)			
179.	279 <i>Cymbopogon ambiguus</i> (Scentgrass)			
180.	128 <i>Cymodocea angustata</i>			
181.	13730 <i>Cymodocea rotundata</i>			
182.	129 <i>Cymodocea serrulata</i>			
183.	6584 <i>Cynanchum floribundum</i> (Dumara Bush, Tjipa)			
184.	48280 <i>Cynanchum viminalis</i> subsp. <i>australe</i>			
185.	6680 <i>Cynoglossum australe</i> (Australian Hound's-tongue)			
186.	777 <i>Cyperus bulbosus</i> (Bush Onion, Tjanmata)			
187.	814 <i>Cyperus squarrosus</i>			
188.	818 <i>Cyperus vaginatus</i> (Stiffleaf Sedge)			
189.	290 <i>Dactyloctenium radulans</i> (Button Grass)			
190.	7448 <i>Dampiera incana</i> (Hoary Dampiera)			
191.	11723 <i>Dampiera incana</i> var. <i>incana</i>			
192.	26740 <i>Dasya frutescens</i>			
193.	47241 <i>Datura leichhardtii</i> subsp. <i>leichhardtii</i>	Y		
194.	6218 <i>Daucus glochidiatus</i> (Australian Carrot)			
195.	7958 <i>Decazesia hecatoccephala</i>			
196.	13741 <i>Dichanthium sericeum</i> subsp. <i>humilius</i>			
197.	29616 <i>Dichotomaria marginata</i>			
198.	29615 <i>Dichotomaria obtusata</i>			
199.	7164 <i>Dicladantha forrestii</i>			
200.	6754 <i>Dicrastyli cordifolia</i>			
201.	313 <i>Digitaria ctenantha</i> (Comb Finger Grass)			
202.	4456 <i>Diploaena grandiflora</i> (Wild Rose)			
203.	4745 <i>Diplopeltis eriocarpa</i> (Hairy Pepperflower)			
204.	4747 <i>Diplopeltis intermedia</i>			
205.	11669 <i>Diplopeltis intermedia</i> var. <i>intermedia</i>			
206.	7169 <i>Dipteracanthus australasicus</i>			
207.	11320 <i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>			
208.	11746 <i>Dipteracanthus australasicus</i> subsp. <i>corynothecus</i>			
209.	2499 <i>Dissocarpus paradoxus</i> (Curious Saltbush)			
210.	6966 <i>Duboisia hopwoodii</i> (Pituri, Kundugu)			
211.	31274 <i>Duperreya commixta</i>			
212.	33501 <i>Dysphania cristata</i> (Crested Goosefoot)			
213.	2504 <i>Dysphania plantaginella</i>			
214.	328 <i>Echinochloa colona</i> (Awnless Barnyard Grass)	Y		
215.	2989 <i>Emblingia calceoliflora</i>			
216.	2511 <i>Enchylaena tomentosa</i> (Barrier Saltbush)			
217.	12064 <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Barrier Saltbush)			
218.	357 <i>Enneapogon caeruleascens</i> (Limestone Grass)			
219.	360 <i>Enneapogon lindleyanus</i> (Wiry Nineawn, Purple-head Nineawn)			
220.	375 <i>Eragrostis cumingii</i> (Cuming's Love Grass)			
221.	378 <i>Eragrostis dielsii</i> (Mallee Lovegrass)			
222.	380 <i>Eragrostis eriopoda</i> (Woollybutt Grass, Wangurnu)			
223.	381 <i>Eragrostis falcata</i> (Sickle Lovegrass)			
224.	389 <i>Eragrostis minor</i> (Smaller Stinkgrass)	Y		
225.	2513 <i>Eremophea spinosa</i>			
226.	7198 <i>Eremophila deserti</i>			
227.	15052 <i>Eremophila forrestii</i> subsp. <i>forrestii</i>			
228.	7215 <i>Eremophila glabra</i> (Tar Bush)			
229.	7234 <i>Eremophila longifolia</i> (Berrigan, Tulypurpa)			
230.	16363 <i>Eremophila maculata</i> subsp. <i>brevifolia</i> (Native Fuchsia)			
231.	16733 <i>Eremophila setacea</i>			
232.	23997 <i>Eremophila tietkensii</i>			
233.	400 <i>Eriachne aristidea</i>			
234.	411 <i>Eriachne helmsii</i> (Buck Wanderrie Grass)			
235.	413 <i>Eriachne mucronata</i> (Mountain Wanderrie Grass)			
236.	414 <i>Eriachne obtusa</i> (Northern Wanderrie Grass)			
237.	4332 <i>Erodium botrys</i> (Long Storksbill)	Y		
238.	4335 <i>Erodium cygnorum</i> (Blue Heronsbill)			
239.	3871 <i>Erythrina vespertilio</i> (Yulbah)			
240.	26821 <i>Erythroclonium muelleri</i>			
241.	33519 <i>Eucalyptus baiophylla</i>			
242.	35345 <i>Eucalyptus camaldulensis</i> subsp. <i>obtusata</i> (Blunt-budded River Red Gum)			
243.	5752 <i>Eucalyptus prominens</i>			
244.	15597 <i>Eucalyptus ultima</i>			
245.	14548 <i>Eucalyptus victrix</i>			

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246.	15592 <i>Eucalyptus xerothermica</i>			
247.	26827 <i>Eucheuma denticulatum</i>			
248.	11011 <i>Eulalia aurea</i>			
249.	4617 <i>Euphorbia australis</i> (Namana)			
250.	35307 <i>Euphorbia australis</i> var. <i>australis</i>			
251.	4619 <i>Euphorbia biconvexa</i>			
252.	4623 <i>Euphorbia coghlanii</i> (Namana)			
253.	4626 <i>Euphorbia drummondii</i> (Caustic Weed, Piwi)			
254.	4635 <i>Euphorbia myrtoides</i>			
255.	4644 <i>Euphorbia shakoensis</i>			
256.	4647 <i>Euphorbia tannensis</i>			
257.	12097 <i>Euphorbia tannensis</i> subsp. <i>eremophila</i> (Desert Spurge)			
258.	42879 <i>Euphorbia trigonosperma</i>			
259.	11416 <i>Evolvulus alsinoides</i> var. <i>decumbens</i>			
260.	11200 <i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>			
261.	10977 <i>Exocarpos aphyllus</i> (Leafless Ballart)			
262.	10765 <i>Exocarpos sparteus</i> (Broom Ballart, Djuk)			
263.	19648 <i>Ficus brachypoda</i>			
264.	1753 <i>Ficus platypoda</i> (Native Fig, Makartu)			
265.	12096 <i>Ficus virens</i> var. <i>virens</i>			
266.	35558 <i>Flaveria trinervia</i> (Speedy Weed)	Y		
267.	5209 <i>Frankenia pauciflora</i> (Seaheath)			
268.	26835 <i>Galaxaura rugosa</i>			
269.	26837 <i>Ganonema farinosum</i>			
270.	26841 <i>Gayralia oxysperma</i>			
271.	35913 <i>Gelidiopsis scoparia</i>			
272.	3938 <i>Glycine canescens</i> (Silky Glycine)			
273.	3941 <i>Glycine tabacina</i> (Glycine Pea)			
274.	2677 <i>Gomphrena celosioides</i> (Gomphrena Weed)	Y		
275.	7509 <i>Goodenia forrestii</i>			
276.	7526 <i>Goodenia microptera</i>			
277.	12574 <i>Goodenia prostrata</i>			
278.	7556 <i>Goodenia tenuiloba</i>			
279.	4918 <i>Gossypium robinsonii</i> (Wild Cotton)			
280.	4919 <i>Gossypium sturtianum</i> (Sturt's Desert Rose)			
281.	11559 <i>Gossypium sturtianum</i> var. <i>sturtianum</i>			
282.	35899 <i>Gracilaria canaliculata</i>			
283.	2001 <i>Grevillea eriostachya</i> (Flame Grevillea, Kaliny-kalinypa)			
284.	2012 <i>Grevillea gordoniana</i>			
285.	2096 <i>Grevillea stenobotrya</i>			
286.	2117 <i>Grevillea variifolia</i> (Cape Range Grevillea)			Y
287.	15686 <i>Grevillea variifolia</i> subsp. <i>bundera</i>			
288.	15685 <i>Grevillea variifolia</i> subsp. <i>variifolia</i>			
289.	2784 <i>Gyrostemon ramulosus</i> (Corkybark)			
290.	2207 <i>Hakea stenophylla</i>			
291.	16897 <i>Hakea stenophylla</i> subsp. <i>stenophylla</i>			
292.	29840 <i>Halgania cyanea</i> var. <i>Allambi Stn</i> (B.W. Strong 676)			
293.	26891 <i>Halimeda cylindracea</i>			
294.	26892 <i>Halimeda discoidea</i>			
295.	26894 <i>Halimeda macroloba</i>			
296.	26898 <i>Halimeda velasquezii</i>			
297.	47213 <i>Halimeda versatilis</i>			
298.	130 <i>Halodule pinifolia</i>			
299.	131 <i>Halodule uninervis</i>			
300.	164 <i>Halophila ovalis</i> (Sea Wrack)			
301.	165 <i>Halophila spinulosa</i>			
302.	6174 <i>Haloragis gossei</i>			
303.	23464 <i>Haloragis gossei</i> var. <i>inflata</i>			
304.	6180 <i>Haloragis trigonocarpa</i>			
305.	17782 <i>Hannafordia quadrivalvis</i> subsp. <i>recurva</i>			
306.	6705 <i>Heliotropium crispatum</i>			
307.	17305 <i>Heliotropium glanduliferum</i>			
308.	6713 <i>Heliotropium ovalifolium</i>			
309.	26912 <i>Helminthocladia australis</i>			
310.	5171 <i>Hibbertia spicata</i>			
311.	11481 <i>Hibbertia spicata</i> subsp. <i>spicata</i>			
312.	4925 <i>Hibiscus coatesii</i>			
313.	4930 <i>Hibiscus goldsworthii</i>			
314.	4933 <i>Hibiscus leptocladus</i>			
315.	4942 <i>Hibiscus sturtii</i> (Sturt's Hibiscus)			

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316.	5215 <i>Hybanthus aurantiacus</i>			
317.	5219 <i>Hybanthus enneaspermus</i>			
318.	35905 <i>Hydropuntia eucheumatoides</i>			
319.	8086 <i>Hypochaeris glabra</i> (Smooth Catsear)	Y		
320.	17113 <i>Indigofera bovipерda</i> subsp. <i>bovipерda</i>			
321.	45436 <i>Indigofera chamaeclada</i> subsp. <i>pubens</i>			
322.	3973 <i>Indigofera colutea</i> (Sticky Indigo)			
323.	3980 <i>Indigofera linifolia</i>			
324.	3981 <i>Indigofera linnaei</i> (Birdsville Indigo)			
325.	3982 <i>Indigofera monophylla</i>			
326.	3987 <i>Indigofera trita</i>			
327.	6624 <i>Ipomoea costata</i> (Rock Morning Glory, Kanti)			
328.	6633 <i>Ipomoea muelleri</i> (Poison Morning Glory, Yumbu)			
329.	6635 <i>Ipomoea pes-caprae</i>			
330.	11312 <i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i>			
331.	6637 <i>Ipomoea polymorpha</i>			
332.	6641 <i>Ipomoea yardiensis</i> (Yardie Morning Glory)			
333.	458 <i>Iseilema dolichotrichum</i>			
334.	459 <i>Iseilema eremaeum</i>			
335.	11 <i>Isoetes drummondii</i> (Quillwort)			
336.	12 <i>Isoetes inflata</i>			
337.	13 <i>Isoetes mongerensis</i>			
338.	14 <i>Isoetes muelleri</i>			
339.	3989 <i>Isotropis atropurpurea</i> (Poison Sage)			
340.	26983 <i>Jania adhaerens</i>			
341.	6501 <i>Jasminum didymum</i>			
342.	12059 <i>Jasminum didymum</i> subsp. <i>lineare</i> (Desert Jasmine)			
343.	29056 <i>Jasminum</i> sp. <i>Exmouth</i> (G. Marsh 77)			
344.	26992 <i>Kentrophora pectinella</i>			
345.	3664 <i>Labichea cassioides</i>			
346.	6733 <i>Lantana camara</i> (Common Lantana)	Y		
347.	<i>Launaea sarmentosa</i>			
348.	8098 <i>Launaea sarmentosa</i>			
349.	4960 <i>Lawrenxia viridigrisea</i>			
350.	7588 <i>Lechenaultia subcymosa</i> (Wide-branching Leschenaultia)			
351.	48421 <i>Leiomenia lacunata</i>			
352.	3032 <i>Lepidium muelleri-ferdinandii</i>			
353.	3035 <i>Lepidium pedicellosum</i>			
354.	3037 <i>Lepidium phlebopetalum</i> (Veined Peppergrass)			
355.	3039 <i>Lepidium platypetalum</i> (Slender Peppergrass)			
356.	16489 <i>Leptosema macrocarpum</i>			
357.	18351 <i>Leucaena leucocephala</i> subsp. <i>leucocephala</i>	Y		
358.	7403 <i>Lobelia heterophylla</i> (Wing-seeded Lobelia)			
359.	16798 <i>Logania litoralis</i>			
360.	4060 <i>Lotus australis</i> (Austral Trefoil)			
361.	24021 <i>Lotus australis</i> var. <i>australis</i>			
362.	4061 <i>Lotus cruentus</i> (Redflower Lotus)			
363.	2546 <i>Maireana integra</i>			
364.	2556 <i>Maireana planifolia</i> (Low Bluebush)			
365.	2558 <i>Maireana polypterygia</i> (Gascoyne Bluebush)			
366.	11662 <i>Maireana tomentosa</i> subsp. <i>tomentosa</i>			
367.	4658 <i>Mallotus nesophilus</i>			
368.	4962 <i>Malvastrum americanum</i> (Spiked Malvastrum)	Y		
369.	12949 <i>Marsdenia australis</i>			
370.	76 <i>Marsilea hirsuta</i> (Nardoo)			
371.	<i>Marsilea</i> sp.			
372.	5879 <i>Melaleuca bracteata</i> (River Teatree)			
373.	5887 <i>Melaleuca cardiophylla</i> (Tangling Melaleuca)			
374.	5051 <i>Melhania oblongifolia</i>			
375.	27074 <i>Microdictyon umbilicatum</i>			
376.	7082 <i>Mimulus gracilis</i>			
377.	8107 <i>Minuria cunninghamii</i> (Bush Minuria)			
378.	8110 <i>Minuria leptophylla</i> (Minnie Daisy)			
379.	4097 <i>Mirbelia ramulosa</i>			
380.	4105 <i>Mirbelia viminalis</i>			
381.	<i>Monotaxis grandoculis</i>			
382.	6490 <i>Muellerolimon salicorniaceum</i>			
383.	17158 <i>Myoporum montanum</i> (Native Myrtle)			
384.	2573 <i>Neobassia astrocarpa</i>			
385.	6974 <i>Nicotiana glauca</i> (Tree Tobacco)	Y		

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386.	6976 <i>Nicotiana occidentalis</i> (Native Tobacco)			
387.	11331 <i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>			
388.	11856 <i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>			
389.	2364 <i>Olax aurantia</i>			
390.	7338 <i>Oldenlandia crouchiana</i>			
391.	42024 <i>Olearia</i> sp. <i>Kennedy Range</i> (G. Byrne 66)			
392.	18256 <i>Opercularia spermacocea</i>			
393.	12782 <i>Ophioglossum gramineum</i>			
394.	17 <i>Ophioglossum lusitanicum</i> (Adders Tongue)			
395.	18 <i>Ophioglossum polyphyllum</i>			
396.	46834 <i>Osmundaria melvillii</i>			
397.	503 <i>Panicum decompositum</i> (Native Millet, Kaltu-kaltu)			
398.	11232 <i>Paractaenum novae-hollandiae</i> subsp. <i>novae-hollandiae</i>			
399.	12670 <i>Parietaria cardiostegia</i>			
400.	3673 <i>Parkinsonia aculeata</i> (Parkinsonia)	Y		
401.	518 <i>Paspalidium clementii</i> (Clements Paspalidium)			
402.	525 <i>Paspalidium tabulatum</i>			
403.	20611 <i>Pembertonia latisquamea</i>			
404.	27121 <i>Penicillus nodulosus</i>			
405.	34997 <i>Peripleura arida</i>			
406.	35003 <i>Peripleura hispidula</i> var. <i>setosa</i>			
407.	3674 <i>Petalostylis cassioides</i>			
408.	17626 <i>Phyllanthus erwinii</i>			
409.	45696 <i>Phyllanthus hamelinii</i> (Shark Bay Phyllanthus)			
410.	4680 <i>Phyllanthus maderaspatensis</i>			
411.	6010 <i>Pileanthus limacis</i> (Coastal Coppercups)			
412.	5230 <i>Pimelea ammocharis</i>			
413.	11185 <i>Pimelea microcephala</i> subsp. <i>microcephala</i>			
414.	19744 <i>Pittosporum angustifolium</i>			
415.	41300 <i>Pittosporum phillyreoides</i> (Weeping Pittosporum, Yaliti)			
416.	6910 <i>Plectranthus intraterraneus</i>			
417.	35276 <i>Plectranthus scutellarioides</i>			
418.	8167 <i>Pluchea dentex</i>			
419.	17816 <i>Pluchea ferdinandi-muelleri</i>			
420.	43944 <i>Pluchea longiseta</i>			
421.	8168 <i>Pluchea rubelliflora</i>			
422.	6491 <i>Plumbago zeylanica</i> (Native Plumbago)			
423.	45237 <i>Podolepis aristata</i> subsp. <i>aristata</i>			
424.	45242 <i>Podolepis remota</i>			
425.	6653 <i>Polymeria ambigua</i> (Morning Glory)			
426.	27171 <i>Polysiphonia blandii</i>			
427.	27186 <i>Portieria homemannii</i>			
428.	2882 <i>Portulaca intraterranea</i>			
429.	2884 <i>Portulaca oleracea</i> (Purslane, Wakati)			
430.	32415 <i>Pottia scabrifolia</i>			
431.	8189 <i>Pseudognaphalium luteoalbum</i> (Jersey Cudweed)			
432.	8192 <i>Pterocaulon sphacelatum</i> (Apple Bush, Fruit Salad Plant)			
433.	8193 <i>Pterocaulon sphaeranthoides</i>			
434.	15426 <i>Pterostylis aspera</i>			
435.	27204 <i>Ptilocladia vestita</i>			
436.	2696 <i>Ptilotus astrolasius</i>			
437.	2699 <i>Ptilotus axillaris</i> (Mat Mulla Mulla)			
438.	2711 <i>Ptilotus clementii</i> (Tassel Top)			
439.	2717 <i>Ptilotus divaricatus</i> (Climbing Mulla Mulla)			
440.	2721 <i>Ptilotus exaltatus</i> (Tall Mulla Mulla)			
441.	2727 <i>Ptilotus gaudichaudii</i>			
442.	2731 <i>Ptilotus helipteroides</i> (Hairy Mulla Mulla)			
443.	2746 <i>Ptilotus nobilis</i> (Tall Mulla Mulla)			
444.	2747 <i>Ptilotus obovatus</i> (Cotton Bush)			
445.	2751 <i>Ptilotus polystachyus</i> (Prince of Wales Feather)			
446.	2766 <i>Ptilotus villosiflorus</i>			
447.	41063 <i>Quoya loxocarpa</i>			
448.	41061 <i>Quoya paniculata</i>			
449.	3061 <i>Raphanus raphanistrum</i> (Wild Radish)	Y		
450.	2582 <i>Rhagodia eremaea</i> (Thorny Saltbush)			
451.	2583 <i>Rhagodia latifolia</i>			
452.	2584 <i>Rhagodia preissii</i>			
453.	11240 <i>Rhagodia preissii</i> subsp. <i>obovata</i>			
454.	5295 <i>Rhizophora stylosa</i> (Spotted-leaved Red Mangrove)			
455.	13291 <i>Rhodanthe condensata</i>			

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456.	13301 <i>Rhodanthe floribunda</i>			
457.	13246 <i>Rhodanthe humboldtiana</i>			
458.	13297 <i>Rhodanthe psammophila</i>			
459.	13254 <i>Rhodanthe stricta</i>			
460.	4191 <i>Rhynchosia minima</i> (<i>Rhynchosia</i>)			
461.	<i>Riccia bifurca</i>			
462.	<i>Riccia limbata</i>			
463.	<i>Riccia vesiculosa</i>			
464.	45146 <i>Roebuckiella oncocarpa</i>			
465.	48884 <i>Roepera aurantiaca</i>			
466.	48891 <i>Roepera fruticulosa</i>			
467.	48900 <i>Roepera retivalvis</i>			
468.	46434 <i>Rumex hypogaeus</i>	Y		
469.	114 <i>Ruppia maritima</i> (<i>Sea Tassel</i>)			
470.	30434 <i>Salsola australis</i>			
471.	6484 <i>Samolus repens</i> (<i>Creeping Brookweed</i>)			
472.	14026 <i>Samolus</i> sp. Shark Bay (<i>M.E. Trudgen 7410</i>)			
473.	2357 <i>Santalum lanceolatum</i> (<i>Northern Sandalwood, Yarnguli</i>)			
474.	7606 <i>Scaevola crassifolia</i> (<i>Thick-leaved Fan-flower</i>)			
475.	7608 <i>Scaevola cunninghamii</i>			
476.	12584 <i>Scaevola pulchella</i>			
477.	7643 <i>Scaevola sericophylla</i>			
478.	7644 <i>Scaevola spinescens</i> (<i>Currant Bush, Maroon</i>)			
479.	7648 <i>Scaevola tomentosa</i> (<i>Raggedleaf Fanflower</i>)			
480.	41660 <i>Schenkia australis</i>			
481.	41646 <i>Schenkia clementii</i>			
482.	13285 <i>Schoenia ayersii</i>			
483.	2609 <i>Sclerolaena diacantha</i> (<i>Grey Copperburr</i>)			
484.	8877 <i>Sclerolaena gardneri</i>			
485.	2628 <i>Sclerolaena recurvuspis</i>			
486.	2633 <i>Sclerolaena uniflora</i> (<i>Two-spined Saltbush</i>)			
487.	25880 <i>Senecio hamersleyensis</i>			
488.	8213 <i>Senecio magnificus</i> (<i>Showy Groundsel</i>)			
489.	20161 <i>Senecio pinnatifolius</i>			
490.	25883 <i>Senecio pinnatifolius</i> var. <i>pinnatifolius</i>			
491.	12280 <i>Senna artemisioides</i> subsp. <i>oligophylla</i>			
492.	18443 <i>Senna ferraria</i>			
493.	12305 <i>Senna glutinosa</i> subsp. <i>chatelainiana</i>			
494.	12307 <i>Senna glutinosa</i> subsp. <i>glutinosa</i>			
495.	12309 <i>Senna glutinosa</i> subsp. <i>pruinosa</i>			
496.	12312 <i>Senna notabilis</i>			
497.	46818 <i>Seringia hermanniifolia</i> (<i>Crinkle-leaved firebush</i>)			
498.	<i>Sesbania</i> sp.			
499.	2818 <i>Sesuvium portulacastrum</i>			
500.	606 <i>Setaria dielsii</i> (<i>Diels' Pigeon Grass</i>)			
501.	613 <i>Setaria verticillata</i> (<i>Whorled Pigeon Grass</i>)	Y		
502.	4966 <i>Sida arenicola</i>			
503.	4970 <i>Sida calyxhymenia</i> (<i>Tall Sida</i>)			
504.	4977 <i>Sida fibulifera</i> (<i>Silver Sida</i>)			
505.	4982 <i>Sida kingii</i>			
506.	18149 <i>Sida rohlenae</i> subsp. <i>rohlenae</i>			
507.	4989 <i>Sida spinosa</i> (<i>Spiny Sida</i>)			
508.	8223 <i>Sigesbeckia orientalis</i> (<i>Indian Weed</i>)	Y		
509.	27280 <i>Siphonocladus tropicus</i>			
510.	3072 <i>Sisymbrium orientale</i> (<i>Indian Hedge Mustard</i>)	Y		
511.	6998 <i>Solanum cleistogamum</i>			
512.	7002 <i>Solanum diversiflorum</i>			
513.	7018 <i>Solanum lasiophyllum</i> (<i>Flannel Bush, Mindjulu</i>)			
514.	47173 <i>Solanum lycopersicum</i> (<i>Tomato</i>)	Y		
515.	27281 <i>Solieria robusta</i>			
516.	8231 <i>Sonchus oleraceus</i> (<i>Common Sowthistle</i>)	Y		
517.	619 <i>Sorghum plumosum</i> (<i>Plume Canegrass</i>)			
518.	1312 <i>Sowerbaea laxiflora</i> (<i>Purple Tassels</i>)			
519.	625 <i>Spinifex longifolius</i> (<i>Beach Spinifex</i>)			
520.	635 <i>Sporobolus virginicus</i> (<i>Marine Couch</i>)			
521.	27310 <i>Spyridia filamentosa</i>			
522.	4734 <i>Stackhousia muricata</i>			
523.	43601 <i>Stackhousia</i> sp. Mid west coastal (<i>D. & B. Bellairs 6561</i>)			
524.	7098 <i>Stemodia grossa</i> (<i>Marsh Stemodia, Mindjaara</i>)			
525.	48755 <i>Stemodia</i> sp. Carnarvon (<i>W.R. Barker 2154</i>)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
526.	17295 <i>Stemodia</i> sp. Onslow (A.A. Mitchell 76/148)			
527.	8237 <i>Streptoglossa decurrens</i>			
528.	8238 <i>Streptoglossa liatroides</i>			
529.	12492 <i>Striga squamigera</i>			
530.	3182 <i>Stylobasium spathulatum</i> (Pebble Bush)			
531.	12353 <i>Stylosanthes hamata</i> (Verano Stylo)	Y		
532.	43203 <i>Surreya diandra</i>			
533.	13592 <i>Swainsona calcicola</i>			
534.	13596 <i>Swainsona complanata</i>			
535.	12356 <i>Swainsona formosa</i>			
536.	4231 <i>Swainsona kingii</i>			
537.	4233 <i>Swainsona leeana</i>			
538.	4242 <i>Swainsona pterostylis</i>			
539.	13339 <i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>			
540.	132 <i>Syringodium isoetifolium</i>			
541.	36447 <i>Tecoma stans</i> var. <i>stans</i>	Y		
542.	33236 <i>Tecticornia halocnemoides</i> (Shrubby Samphire)			
543.	33238 <i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i>			
544.	33317 <i>Tecticornia indica</i>			
545.	33318 <i>Tecticornia indica</i> subsp. <i>leiostachya</i> (Samphire)			
546.	31618 <i>Tecticornia pruinosa</i>			
547.	33220 <i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i>			
548.	49017 <i>Tephrosia gardneri</i>			
549.	19531 <i>Tephrosia rosea</i> var. <i>clementii</i>			
550.	48603 <i>Teucrium teucriiflorum</i>			
551.	169 <i>Thalassia hemprichii</i>			
552.	133 <i>Thalassodendron ciliatum</i>			
553.	2644 <i>Threlkeldia diffusa</i> (Coast Bonefruit)			
554.	44710 <i>Thryptomene dampieri</i>			
555.	46756 <i>Thysanotus eximbratus</i>			
556.	44305 <i>Trianthema pilosum</i>			
557.	4375 <i>Tribulus cistoides</i>			
558.	4377 <i>Tribulus hirsutus</i>			
559.	4378 <i>Tribulus hystrix</i>			
560.	4379 <i>Tribulus macrocarpus</i>			
561.	4380 <i>Tribulus occidentalis</i> (Perennial Caltrop)			
562.	18072 <i>Tribulus suberosus</i>			
563.	6727 <i>Trichodesma zeylanicum</i> (Camel Bush, Kumbalin)			
564.	1360 <i>Tricoryne corynothecoides</i>			
565.	29477 <i>Tricoryne</i> sp. Mullewa (G.J. Keighery 12080)			
566.	145 <i>Triglochin hexagona</i> (Six-point Arrowgrass)			
567.	679 <i>Triodia angusta</i>			
568.	13131 <i>Triodia epactia</i>			
569.	48467 <i>Triodia glabra</i>			
570.	696 <i>Triodia pungens</i> (Soft Spinifex)			
571.	17873 <i>Triodia schinzii</i>			
572.	704 <i>Triodia wiseana</i> (Limestone Spinifex)			
573.	706 <i>Triraphis mollis</i> (Needle Grass)			
574.	14694 <i>Triumfetta clementii</i>			
575.	13481 <i>Triumfetta ramosa</i>			
576.	17529 <i>Triumfetta tenuiseta</i>			
577.	27348 <i>Udotea argentea</i>			
578.	30716 <i>Vachellia farnesiana</i> (Mimosa Bush)	Y		
579.	36143 <i>Valonia fastigiata</i>			
580.	46438 <i>Valonia ventricosa</i>			
581.	6081 <i>Verticordia forrestii</i> (Forrest's Featherflower)			
582.	4323 <i>Vigna lanceolata</i> (Maloga Vigna, Wega)			
583.	31391 <i>Vigna</i> sp. Hamersley Clay (A.A. Mitchell PRP 113)			
584.	48983 <i>Vincetoxicum cinerascens</i>			
585.	48987 <i>Vincetoxicum flexuosum</i>			
586.	48986 <i>Vincetoxicum lineare</i>			
587.	48829 <i>Wahlenbergia capillaris</i>			
588.	<i>Wahlenbergia</i> sp.			
589.	7393 <i>Wahlenbergia tumidifrutta</i>			
590.	5106 <i>Waltheria indica</i>			
591.	725 <i>Whiteochloa airoides</i>			
592.	1400 <i>Wurmbea odorata</i>			

Conservation Codes
T - Rare or likely to become extinct

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
X	- Presumed extinct			
IA	- Protected under international agreement			
S	- Other specially protected fauna			
1	- Priority 1			
2	- Priority 2			
3	- Priority 3			
4	- Priority 4			
5	- Priority 5			

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.



NatureMap Species Report

Created By Guest user on 06/08/2021

Kingdom	Animalia
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	114° 07' 16" E, 21° 56' 45" S
Buffer	40km
Group By	Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	1078	8470
Other specially protected fauna	5	1027
Presumed extinct	3	4
Priority 2	2	37
Priority 3	2	29
Priority 4	10	211
Protected under international agreement	34	963
Rare or likely to become extinct	33	715
TOTAL	1167	11456

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Rare or likely to become extinct				
1.	25350 <i>Aipysurus apraefrontalis</i> (Short-nosed Seasnake)		T	
2.	33905 <i>Bamazomus subsolanus</i> (Eastern Cape Range Bamazomus)		T	Y
3.	33906 <i>Bamazomus vespertinus</i> (Western Cape Range Bamazomus)		T	Y
4.	24784 <i>Calidris ferruginea</i> (Curlew Sandpiper)		T	
5.	24790 <i>Calidris tenuirostris</i> (Great Knot)		T	
6.	34034 <i>Carcharias taurus</i> (Grey Nurse Shark)		T	
7.	34031 <i>Carcharodon carcharias</i> (Great White Shark)		T	
8.	25335 <i>Caretta caretta</i> (Loggerhead Turtle)		T	
9.	25575 <i>Charadrius leschenaultii</i> (Greater Sand Plover)		T	
10.	25576 <i>Charadrius mongolus</i> (Lesser Sand Plover)		T	
11.	25336 <i>Chelonia mydas</i> (Green Turtle)		T	
12.	25346 <i>Dermochelys coriacea</i> (Leatherback Turtle)		T	
13.	33907 <i>Draculooides brooksi</i> (Northern Cape Range Draculooides)		T	Y
14.	33909 <i>Draculooides julianneae</i> (Western Cape Range Draculooides)		T	Y
15.	25473 <i>Eretmochelys imbricata</i> (Hawksbill Turtle)		T	
16.	25342 <i>Eretmochelys imbricata</i> subsp. <i>bissa</i> (Hawksbill Turtle)		T	
17.	24043 <i>Eubalaena australis</i> (Southern Right Whale)		T	
18.	34145 <i>Indohya damocles</i> (Cameron's Cave Pseudoscorpion)		T	Y
19.	34025 <i>Milyeringa veritas</i> (Cave Gudgeon, Blind Gudgeon)		T	
20.	25344 <i>Natator depressus</i> (Flatback Turtle)		T	
21.	24798 <i>Numenius madagascariensis</i> (Eastern Curlew)		T	
22.	34038 <i>Ophisternon candidum</i> (Blind Cave Eel)		T	
23.	24142 <i>Petrogale lateralis</i> subsp. <i>lateralis</i> (Black-flanked Rock-wallaby, Black-footed Rock-wallaby)		T	
24.	34037 <i>Pristis zijsron</i> (Green Sawfish)		T	
25.	24236 <i>Pseudomys fieldi</i> (Shark Bay Mouse, Djoongari)		T	
26.	24715 <i>Puffinus huttoni</i> (Hutton's Shearwater)		T	
27.	48595 <i>Sternula nereis</i> subsp. <i>nereis</i> (Fairy Tern)		T	
28.	33963 <i>Stygiocaris lancifera</i> (Lance-beaked Cave Shrimp)		T	
29.	33967 <i>Stygiochiropus isolatus</i> (a <i>stygiochiropus</i> millipede (Cape Range), millipede)		T	Y
30.	33968 <i>Stygiochiropus peculiaris</i> (Cameron's Cave Millipede)		T	Y
31.	33969 <i>Stygiochiropus sympatricus</i> (a <i>stygiochiropus</i> millipede (Cape Range), millipede)		T	Y
32.	34007 <i>Thalassarche chlororhynchos</i> (Atlantic Yellow-nosed Albatross)		T	
33.	24249 <i>Zyzomys pedunculatus</i> (Central Rock-rat, Antina)		T	
Presumed extinct				
34.	24161 <i>Bettongia lesueur</i> subsp. <i>graili</i> (Boodie (inland), Burrowing Bettong (inland))		X	
35.	24218 <i>Leporillus apicalis</i> (Lesser Stick-nest Rat)		X	
36.	24164 <i>Potorous platyops</i> (Broad-faced Potoroo)		X	

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Protected under international agreement				
37.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
38.	25634 <i>Anous stolidus</i> (Common Noddy)		IA	
39.	48573 <i>Ardenna pacifica</i> (Wedge-tailed Shearwater)		IA	
40.	25736 <i>Arenaria interpres</i> (Ruddy Turnstone)		IA	
41.	24779 <i>Calidris acuminata</i> (Sharp-tailed Sandpiper)		IA	
42.	24780 <i>Calidris alba</i> (Sanderling)		IA	
43.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)		IA	
44.	24789 <i>Calidris subminuta</i> (Long-toed Stint)		IA	
45.	24378 <i>Charadrius veredus</i> (Oriental Plover)		IA	
46.	41332 <i>Chlidonias leucopterus</i> (White-winged Black Tern, white-winged tern)		IA	
47.	24793 <i>Gallinago stenura</i> (Pin-tailed Snipe)		IA	
48.	47954 <i>Gelochelidon nilotica</i> (Gull-billed Tern)		IA	
49.	24481 <i>Glareola maldivarum</i> (Oriental Pratincole)		IA	
50.	48587 <i>Hydroprogne caspia</i> (Caspian Tern)		IA	
51.	25739 <i>Limicola falcinellus</i> (Broad-billed Sandpiper)		IA	
52.	30932 <i>Limosa lapponica</i> (Bar-tailed Godwit)		IA	
53.	25741 <i>Limosa limosa</i> (Black-tailed Godwit)		IA	
54.	24799 <i>Numenius minutus</i> (Little Curlew, Little Whimbrel)		IA	
55.	25742 <i>Numenius phaeopus</i> (Whimbrel)		IA	
56.	24497 <i>Oceanites oceanicus</i> (Wilson's Storm-petrel)		IA	
57.	41347 <i>Onychoprion anaethetus</i> (Bridled Tern)		IA	
58.	48591 <i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
59.	24662 <i>Phaethon lepturus</i> (White-tailed Tropicbird)		IA	
60.	24382 <i>Pluvialis fulva</i> (Pacific Golden Plover)		IA	
61.	24383 <i>Pluvialis squatarola</i> (Grey Plover)		IA	
62.	24716 <i>Puffinus pacificus</i> (Wedge-tailed Shearwater)		IA	
63.	25640 <i>Sterna dougalli</i> (Roseate Tern)		IA	
64.	25642 <i>Sterna hirundo</i> (Common Tern)		IA	
65.	48593 <i>Sternula albigrons</i> (Little Tern)		IA	
66.	48597 <i>Thalasseus bergii</i> (Crested Tern)		IA	
67.	24806 <i>Tringa glareola</i> (Wood Sandpiper)		IA	
68.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
69.	24809 <i>Tringa stagnatilis</i> (Marsh Sandpiper, little greenshank)		IA	
70.	41351 <i>Xenus cinereus</i> (Terek Sandpiper)		IA	
Other specially protected fauna				
71.	24084 <i>Dugong dugon</i> (Dugong)		S	
72.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
73.	24051 <i>Megaptera novaeangliae</i> (Humpback Whale)		S	
74.	24098 <i>Phascogale calura</i> (Red-tailed Phascogale, Kenngoor)		S	
75.	42358 <i>Rhincodon typus</i> (Whale Shark)		S	
Priority 2				
76.	44647 <i>Anilius splendidus</i> (splendid blind snake (North West Cape), blind snake (Milyering Well))		P2	Y
77.	34146 <i>Diplodactylus capensis</i> (Cape Range Stone Gecko)		P2	Y
Priority 3				
78.	24992 <i>Aprasia rostrata</i> (Ningaloo worm-lizard, Monte Bello Worm-lizard)		P3	
79.	25120 <i>Lerista allochira</i> (Cape Range Slider)		P3	
Priority 4				
80.	24222 <i>Mesembriomys macrurus</i> (Golden-backed Tree-rat)		P4	
81.	33985 <i>Nocticola flabella</i> (Cape Range delicate cockroach, Cape Range Blind Cockroach)		P4	Y
82.	24060 <i>Orcaella heinsohni</i> (Australian Snubfin Dolphin)		P4	
83.	24663 <i>Phaethon rubricauda</i> (Red-tailed Tropicbird)		P4	
84.	24233 <i>Pseudomys chapmani</i> (Western Pebble-mound Mouse, Ngadji)		P4	
85.	43368 <i>Rhinonicteris aurantia</i> (Orange Leaf-nosed bat)		P4	
86.	24115 <i>Sminthopsis longicaudata</i> (Long-tailed Dunnart)		P4	
87.	48107 <i>Sousa sahalensis</i> (Australian humpback dolphin)		P4	
88.	33964 <i>Stygocaris styllifera</i> (Spear-beaked Cave Shrimp)		P4	
89.	24803 <i>Tringa brevipes</i> (Grey-tailed Tattler)		P4	
Non-conservation taxon				
90.	??			
91.	<i>Ablabys taenianotus</i>			
92.	<i>Abudefduf bengalensis</i>			
93.	<i>Abudefduf saxatilis</i>			
94.	<i>Abudefduf sexfasciatus</i>			
95.	<i>Abudefduf sordidus</i>			
96.	<i>Abudefduf vaigiensis</i>			
97.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
98.	<i>Acanthocephala abbreviata</i>			
99.	<i>Acanthopagrus latus</i>			
100.	25332 <i>Acanthopis wellsi</i> (Pilbara Death Adder)			
101.	<i>Acanthurus dussumieri</i>			
102.	<i>Acanthurus nigrofuscus</i>			
103.	<i>Acanthurus triostegus</i>			
104.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
105.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
106.	24282 <i>Accipiter fasciatus</i> subsp. <i>fasciatus</i> (Brown Goshawk)			
107.	<i>Adventor elongatus</i>			
108.	25544 <i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
109.	24301 <i>Aegotheles cristatus</i> subsp. <i>cristatus</i> (Australian Owlet-nightjar)			
110.	25351 <i>Aipysurus duboisii</i> (Dubois' Seasnake)			
111.	25355 <i>Aipysurus laevis</i> (Olive Seasnake)			
112.	42369 <i>Aipysurus mosaicus</i> (Mosaic Seasnake)			
113.	<i>Albula forsteri</i>			
114.	<i>Alectis ciliaris</i>			
115.	<i>Alectis indica</i>			
116.	<i>Alepes apercna</i>			
117.	<i>Aluterus monoceros</i>			
118.	<i>Aluterus scriptus</i>			
119.	<i>Aluterus</i> sp.			Y
120.	<i>Ambassis vachellii</i>			
121.	<i>Amblycirrhitus bimacula</i>			
122.	<i>Amblyeleotris wheeleri</i>			
123.	<i>Amblygaster leiogaster</i>			
124.	<i>Amblygobius phalaena</i>			
125.	<i>Amblyomma triguttatum</i>			
126.	30831 <i>Amphibolurus gilberti</i> (Ta-ta, Gilbert's Dragon)			
127.	30833 <i>Amphibolurus longirostris</i> (Long-nosed Dragon)			
128.	<i>Amphiprion perideraion</i>			
129.	<i>Amphiprion rubrocinctus</i>			
130.	<i>Amphiprion sandaracinos</i>			Y
131.	25647 <i>Amytornis striatus</i> (Striated Grasswren)			
132.	<i>Anacanthus barbatus</i>			
133.	<i>Anampses caeruleopunctatus</i>			
134.	<i>Anampses geographicus</i>			
135.	<i>Anampses meleagrides</i>			
136.	<i>Anapistula troglobia</i>			Y
137.	24312 <i>Anas gracilis</i> (Grey Teal)			
138.	<i>Anas platyrhynchos</i> subsp. <i>domesticus</i>			
139.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
140.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
141.	25318 <i>Antaresia perthensis</i> (Pygmy Python)			
142.	25241 <i>Antaresia stimsoni</i> subsp. <i>stimsoni</i> (Stimson's Python)			
143.	<i>Antennarius nummifer</i>			
144.	25670 <i>Anthus australis</i> (Australian Pipit)			
145.	24599 <i>Anthus australis</i> subsp. <i>australis</i> (Australian Pipit)			
146.	<i>Antichiropus</i> sp.			
147.	<i>Apistus carinatus</i>			
148.	<i>Apogon angustatus</i>			
149.	<i>Apogon argyrogaster</i>			
150.	<i>Apogon aureus</i>			
151.	<i>Apogon breviceudatus</i>			
152.	<i>Apogon chrysotaenia</i>			
153.	<i>Apogon cookii</i>			
154.	<i>Apogon cyanosoma</i>			
155.	<i>Apogon doederleini</i>			
156.	<i>Apogon fasciatus</i>			
157.	<i>Apogon fraenatus</i>			
158.	<i>Apogon kallopterus</i>			
159.	<i>Apogon moluccensis</i>			
160.	<i>Apogon multilineatus</i>			Y
161.	<i>Apogon nigripinnis</i>			
162.	<i>Apogon pallidofasciatus</i>			
163.	<i>Apogon poecilopterus</i>			
164.	<i>Apogon rueppellii</i>			
165.	<i>Apogon semiornatus</i>			
166.	<i>Apogon septemstriatus</i>			
167.	<i>Apogon</i> sp.			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
168.	<i>Apogon taeniophorus</i>			
169.	<i>Apogon timorensis</i>			
170.	<i>Apogon trimaculatus</i>			
171.	<i>Apolemichthys trimaculatus</i>			
172.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
173.	<i>Archamia fucata</i>			
174.	25558 <i>Ardea ibis</i> (Cattle Egret)			
175.	25559 <i>Ardea intermedia</i> (Intermediate Egret)			
176.	41324 <i>Ardea modesta</i> (great egret, white egret)			
177.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
178.	25560 <i>Ardea sacra</i> (Eastern Reef Egret, Eastern Reef Heron)			
179.	24343 <i>Ardea sacra</i> subsp. <i>sacra</i> (Eastern Reef Egret, Eastern Reef Heron)			
180.	24610 <i>Ardeotis australis</i> (Australian Bustard)			
181.	<i>Argiope protensa</i>			
182.	<i>Argiope trifasciata</i>			
183.	<i>Argyrosomus japonicus</i>			
184.	<i>Arius thalassinus</i>			
185.	<i>Arothron manilensis</i>			
186.	<i>Arothron stellatus</i>			
187.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
188.	24352 <i>Artamus cinereus</i> subsp. <i>melanops</i> (Black-faced Woodswallow)			
189.	25567 <i>Artamus leucorhynchus</i> (White-breasted Woodswallow)			
190.	24354 <i>Artamus leucorhynchus</i> subsp. <i>leucopygialis</i> (White-breasted Woodswallow)			
191.	24355 <i>Artamus minor</i> (Little Woodswallow)			
192.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
193.	<i>Artema atlanta</i>			
194.	<i>Asadipus cape</i>			
195.	<i>Aseraggodes</i> sp.			
196.	<i>Aseraggodes whitleyi</i>			
197.	25320 <i>Aspidites melanocephalus</i> (Black-headed Python)			
198.	<i>Aspidontus dussumieri</i>			
199.	<i>Aspidontus taeniatus</i>			
200.	<i>Assiculus punctatus</i>			
201.	<i>Asterropteryx semipunctatus</i>			
202.	<i>Atelomycterus fasciatus</i>			
203.	<i>Atherinomorus lacunosus</i>			
204.	<i>Atherinomorus vaigiensis</i>			
205.	<i>Atrosalarias</i> sp.			
206.	<i>Australoschendyla capensis</i>			Y
207.	<i>Austrochthonius easti</i>			
208.	24318 <i>Aythya australis</i> (Hardhead)			
209.	<i>Backbourkia collina</i>			
210.	24044 <i>Balaenoptera acutorostrata</i> (Dwarf Minke Whale)			
211.	<i>Banjos banjos</i>			
212.	<i>Barnardius zonarius</i>			
213.	<i>Bathygobius cocosensis</i>			
214.	<i>Bathygobius cyclopterus</i>			
215.	<i>Bathygobius fuscus</i>			
216.	<i>Bathygobius laddi</i>			
217.	<i>Batrachomoeus occidentalis</i>			
218.	<i>Batrachomoeus</i> sp.			
219.	<i>Belone</i> sp.			
220.	<i>Belonepterygion fasciolatum</i>			
221.	<i>Bengalla bertmaini</i>			Y
222.	<i>Blenniella chrysospilos</i>			
223.	<i>Blenniid</i> sp.			
224.	<i>Blennodesmus scapularis</i>			
225.	<i>Bodianus axillaris</i>			
226.	<i>Bodianus bilunulatus</i>			
227.	<i>Boreohesperus capensis</i>			
228.	<i>Brachysomophis cirrocheilos</i>			
229.	25331 <i>Brachyurophis approximans</i> (North-western Shovel-nosed Snake)			
230.	<i>Bregmaceros japonicus?</i>			
231.	<i>Bregmaceros</i> sp.			
232.	<i>Brosmophyciops pautzkei</i>			
233.	<i>Brosmophyciops</i> sp.			
234.	<i>Bryaninops loki</i>			
235.	<i>Bulbonaricus brauni</i>			Y
236.	24359 <i>Burhinus grallarius</i> (Bush Stone-curllew)			
237.	47897 <i>Butorides striata</i> (Striated Heron, Mangrove Heron)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
238.	25715 <i>Cacatua roseicapilla</i> (Galah)			
239.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
240.	24727 <i>Cacatua sanguinea</i> subsp. <i>westralensis</i> (Little Corella)			
241.	42307 <i>Cacomantis pallidus</i> (Pallid Cuckoo)			
242.	24269 <i>Calamanthus campestris</i> (Rufous Fieldwren)			
243.	<i>Calamanthus campestris</i> subsp. <i>campestris</i>			Y
244.	<i>Callionymus grossi</i>			
245.	<i>Callionymus sublaevis</i>			
246.	<i>Callipallene novaezealandiae</i>			Y
247.	<i>Callogobius sclateri</i>			
248.	<i>Callogobius</i> sp.6			
249.	<i>Callopleysiops altivelis</i>			
250.	<i>Cantherhines fronticinctus</i>			Y
251.	<i>Cantherhines pardalis</i>			
252.	<i>Canthigaster coronata</i>			
253.	<i>Canthigaster janthinoptera</i>			
254.	<i>Caracanthus unipinna</i>			
255.	<i>Carangoides caeruleopinnatus</i>			
256.	<i>Carangoides chrysophrys</i>			
257.	<i>Carangoides caeruleopinnatus</i>			
258.	<i>Carangoides equula</i>			
259.	<i>Carangoides hedlandensis</i>			
260.	<i>Carangoides humerosus</i>			
261.	<i>Carangoides malabaricus</i>			
262.	<i>Carangoides</i> sp.			
263.	<i>Carangoides talamparoides</i>			
264.	<i>Caranx bucculentus</i>			
265.	<i>Caranx ignobilis</i>			
266.	<i>Caranx sexfasciatus</i>			
267.	<i>Carcharhinus amblyrhynchos</i>			
268.	<i>Carcharhinus brevipinna</i>			
269.	<i>Carcharhinus cautus</i>			
270.	<i>Carcharhinus limbatus</i>			
271.	<i>Carcharhinus melanopterus</i>			
272.	<i>Carcharhinus</i> sp.			
273.	25015 <i>Carlia munda</i> (Shaded-litter Rainbow Skink)			
274.	25017 <i>Carlia triacantha</i> (Desert Rainbow Skink)			
275.	<i>Centriscus cristatus</i>			
276.	<i>Centriscus scutatus</i>			
277.	<i>Centroberyx australis</i>			
278.	<i>Centrogenys vaigiensis</i>			
279.	<i>Centrolophus niger</i>			
280.	25600 <i>Centropus phasianinus</i> (Pheasant Coucal)			
281.	<i>Centropyge eibli</i>			
282.	<i>Centropyge tibicen</i>			
283.	<i>Cephalopholis boenak</i>			
284.	<i>Cephalopholis sonnerati</i>			
285.	<i>Cercamia eremia</i>			
286.	<i>Cercamia</i> sp.			
287.	<i>Cercophoniys granulosus</i>			
288.	24564 <i>Certhionyx variegatus</i> (Pied Honeyeater)			
289.	24181 <i>Chaerephon jobensis</i> (Greater Northern Freetail-bat, Northern Mastiff Bat)			
290.	<i>Chaetodermis penicilligera</i>			
291.	<i>Chaetodon adiergastos</i>			
292.	<i>Chaetodon assarius</i>			
293.	<i>Chaetodon citrinellus</i>			
294.	<i>Chaetodon lunula</i>			
295.	<i>Chaetodon meyeri</i>			
296.	<i>Chaetodon punctatofasciatus</i>			
297.	<i>Chaetodon trifascialis</i>			
298.	<i>Chaetodon unimaculatus</i>			
299.	<i>Chaetodontoplus duboulayi</i>			
300.	<i>Chaetodontoplus personifer</i>			
301.	24186 <i>Chalinolobus gouldii</i> (Gould's Wattled Bat)			
302.	<i>Chanos chanos</i>			
303.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
304.	<i>Cheilinus chlorourus</i>			
305.	<i>Cheilio inermis</i>			
306.	<i>Cheilodipterus macrodon</i>			
307.	<i>Cheilodipterus quinque-lineatus</i>			

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308.	<i>Chelmon marginalis</i>			
309.	<i>Chelonodon patoca</i>			
310.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
311.	47909 <i>Cheramoeca leucosterna</i> (White-backed Swallow)			
312.	<i>Chiloscyllium punctatum</i>			
313.	<i>Chirocentrus dorab</i>			
314.	<i>Chitulia ornata</i>			
315.	<i>Choerodon cauteroma</i>			
316.	<i>Choerodon cephalotes</i>			
317.	<i>Choerodon schoenleinii</i>			
318.	<i>Choerodon</i> sp.			
319.	<i>Choerodon vitta</i>			
320.	<i>Choeroichthys brachysoma</i>			
321.	<i>Choeroichthys latispinosus</i>			
322.	<i>Chroicocephalus novaehollandiae</i>			
323.	<i>Chromis fumea</i>			
324.	<i>Chromis margaritifer</i>			
325.	<i>Chromis weberi</i>			
326.	<i>Chromis westaustralis</i>			
327.	24431 <i>Chrysococcyx basalis</i> (Horsfield's Bronze Cuckoo)			
328.	<i>Cthiononetes tenuis</i>			
329.	24288 <i>Circus approximans</i> (Swamp Harrier)			
330.	24289 <i>Circus assimilis</i> (Spotted Harrier)			
331.	<i>Cirrhilabrus randalli</i>			
332.	<i>Cirrhilabrus</i> sp.			
333.	<i>Cirrhimuraena calamus</i>			
334.	<i>Cirrhitichthys aprinus</i>			
335.	<i>Cirrhitichthys oxycephalus</i>			
336.	<i>Cirrhitis pinnulatus</i>			
337.	<i>Cirripectes filamentosus</i>			
338.	<i>Cirripectes hutchinsi</i>			
339.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
340.	24612 <i>Colluricincla harmonica</i> subsp. <i>kolichisi</i> (Grey Shrike-thrush)			
341.	24613 <i>Colluricincla harmonica</i> subsp. <i>rufiventris</i> (Grey Shrike-thrush)			
342.	24399 <i>Columba livia</i> (Domestic Pigeon)	Y		
343.	<i>Colurodontis paxmani</i>			
344.	<i>Conger cinereus</i>			
345.	<i>Conger</i> sp.			
346.	<i>Congrogadus malayanus</i>			Y
347.	<i>Congrogadus spinifer</i>			
348.	<i>Congrogadus subducens</i>			
349.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
350.	24362 <i>Coracina novaehollandiae</i> subsp. <i>novaehollandiae</i> (Black-faced Cuckoo-shrike)			
351.	24363 <i>Coracina novaehollandiae</i> subsp. <i>subpallida</i> (Black-faced Cuckoo-shrike)			
352.	<i>Coradion chrysozonus</i>			
353.	<i>Coris aygula</i>			
354.	<i>Coris caudimacula</i>			
355.	<i>Cormocephalus aurantiipes</i>			
356.	<i>Cormocephalus strigosus</i>			
357.	24416 <i>Corvus bennetti</i> (Little Crow)			
358.	25593 <i>Corvus orru</i> (Torresian Crow)			
359.	<i>Coryphaena hippurus</i>			
360.	<i>Coryphopterus duospilus</i>			
361.	<i>Coryphopterus</i> sp.			
362.	<i>Coryphopterus</i> sp.4			
363.	<i>Cosmophasis baehrae</i>			
364.	24671 <i>Coturnix pectoralis</i> (Stubble Quail)			
365.	25701 <i>Coturnix ypsilophora</i> (Brown Quail)			
366.	24673 <i>Coturnix ypsilophora</i> subsp. <i>australis</i> (Brown Quail)			
367.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
368.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
369.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
370.	<i>Craterocephalus mugiloides</i>			
371.	<i>Craterocephalus pauciradiatus</i>			
372.	24919 <i>Crenadactylus ocellatus</i> subsp. <i>horni</i> (Clawless Gecko)			
373.	<i>Crossopriza lyoni</i>			
374.	25020 <i>Cryptoblepharus plagiocephalus</i>			
375.	<i>Cryptocentrus</i> sp.			
376.	<i>Cryptoerithus harveyi</i>			
377.	<i>Ctenochaetus strigosus</i>			

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378.	<i>Ctenogobioops pomastictus</i>			
379.	25458 <i>Ctenophorus caudicinctus</i> (Ring-tailed Dragon)			
380.	24865 <i>Ctenophorus caudicinctus</i> subsp. <i>caudicinctus</i> (Ring-tailed Dragon)			
381.	24868 <i>Ctenophorus clayi</i> (Collared Dragon)			
382.	24872 <i>Ctenophorus femoralis</i> (Dune Dragon)			
383.	25459 <i>Ctenophorus isolepis</i> (Crested Dragon, Military Dragon)			
384.	24876 <i>Ctenophorus isolepis</i> subsp. <i>isolepis</i> (Crested Dragon, Military Dragon)			
385.	24882 <i>Ctenophorus nuchalis</i> (Central Netted Dragon)			
386.	30897 <i>Ctenophorus parviceps</i> (Western Heath Dragon, Northern Heath Dragon)			
387.	24886 <i>Ctenophorus reticulatus</i> (Western Netted Dragon)			
388.	25036 <i>Ctenotus duricola</i>			
389.	25043 <i>Ctenotus grandis</i> subsp. <i>titan</i>			
390.	25044 <i>Ctenotus hanloni</i>			
391.	25046 <i>Ctenotus iapetus</i>			
392.	25048 <i>Ctenotus inornatus</i>			
393.	25463 <i>Ctenotus pantherinus</i> (Leopard Ctenotus)			
394.	25064 <i>Ctenotus pantherinus</i> subsp. <i>ocellifer</i> (Leopard Ctenotus)			
395.	25069 <i>Ctenotus rufescens</i>			
396.	25073 <i>Ctenotus saxatilis</i> (Rock Ctenotus)			
397.	25090 <i>Cyclodomorphus melanops</i> subsp. <i>melanops</i> (Slender Blue-tongue)			
398.	<i>Cyclodomorphus</i> sp.			
399.	25375 <i>Cyclorana maini</i> (Sheep Frog)			
400.	<i>Cyclosa camelodes</i>			
401.	24322 <i>Cygnus atratus</i> (Black Swan)			
402.	<i>Cymbacephalus nematophthalmus</i>			
403.	<i>Cymolutes praetextatus</i>			
404.	<i>Cynoglossus</i> sp.			
405.	<i>Cypselurus</i> sp.			
406.	<i>Cyrtobill darwini</i>			
407.	25547 <i>Dacelo leachii</i> (Blue-winged Kookaburra)			
408.	<i>Dactyloptena orientalis</i>			
409.	<i>Dactyloptena papilio</i>			
410.	<i>Dactylopus dactylopus</i>			
411.	<i>Dampetrus isolatus</i>			Y
412.	<i>Dascyllus aruanus</i>			
413.	<i>Dascyllus reticulatus</i>			
414.	<i>Dascyllus trimaculatus</i>			
415.	<i>Dasyatis kuhlii</i>			
416.	24091 <i>Dasykaluta rosamondae</i> (Little Red Kaluta)			
417.	<i>Decapterus macrosoma</i>			
418.	<i>Decapterus russelli</i>			
419.	24995 <i>Delma australis</i>			
420.	25001 <i>Delma nasuta</i>			
421.	25002 <i>Delma pax</i>			
422.	30829 <i>Delma tealei</i>			
423.	25004 <i>Delma tincta</i>			
424.	25292 <i>Demansia calodera</i> (Black-necked Whipsnake)			
425.	25295 <i>Demansia psammophis</i> subsp. <i>cupreiceps</i> (Yellow-faced Whipsnake)			
426.	<i>Dendrochirus brachypterus</i>			
427.	<i>Dendrochirus zebra</i>			
428.	24324 <i>Dendrocygna arcuata</i> (Wandering Whistling Duck, Chestnut Whistling Duck)			
429.	<i>Dentex tumifrons</i>			
430.	<i>Dexillus muelleri</i>			
431.	<i>Diademichthys lineatus</i>			
432.	<i>Diancistrus alleni</i>			
433.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
434.	24441 <i>Dicaeum hirundinaceum</i> subsp. <i>hirundinaceum</i> (Mistletoebird)			
435.	<i>Diodon</i> sp.			
436.	24926 <i>Diplodactylus conspicillatus</i> (Fat-tailed Gecko)			
437.	24938 <i>Diplodactylus ornatus</i>			
438.	24944 <i>Diplodactylus savagei</i> (Southern Pilbara Beak-faced Gecko)			
439.	42400 <i>Diporiphora adductus</i> (Carnarvon Dragon)			
440.	33915 <i>Draculoides vinei</i> (Cape Range Draculoides)			
441.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
442.	<i>Dunedinia occidentalis</i>			Y
443.	<i>Echeneis naucrates</i>			
444.	<i>Ecsenius bicolor</i>			
445.	<i>Ecsenius lineatus</i>			
446.	<i>Ecsenius oculus</i>			
447.	<i>Ecsenius oculus</i>			

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448.	<i>Ecsenius yaeyamaensis</i>			
449.	<i>Egretta garzetta</i>			
450.	<i>Egretta novaehollandiae</i>			
451.	<i>Elanus axillaris</i>			
452.	25540 <i>Elanus caeruleus</i> (Black-shouldered Kite)			
453.	24290 <i>Elanus caeruleus</i> subsp. <i>axillaris</i> (Australian Black-shouldered Kite)			
454.	<i>Elops hawaiiensis</i>			
455.	47937 <i>Elsayornis melanops</i> (Black-fronted Dotterel)			
456.	24631 <i>Emblema pictum</i> (Painted Finch)			
457.	<i>Engyprosopon</i> ? sp.			Y
458.	<i>Engyprosopon</i> sp.			
459.	<i>Enneapterygius gracilis</i>			
460.	<i>Enneapterygius larsonae</i>			
461.	<i>Enneapterygius philippinus</i>			
462.	<i>Enneapterygius tusitalae</i> ?			
463.	<i>Enneapterygius tutuilae</i>			
464.	<i>Entomacrodus decussatus</i>			
465.	<i>Entomacrodus striatus</i>			
466.	<i>Entomacrodus thalassinus</i>			
467.	<i>Eolophus roseicapillus</i>			
468.	24653 <i>Eopsaltria pulverulenta</i> (Mangrove Robin)			
469.	25362 <i>Ephalophis greyae</i>			
470.	25578 <i>Ephippiorhynchus asiaticus</i> (Black-necked Stork)			
471.	<i>Epinephelus areolatus</i>			
472.	<i>Epinephelus bilobatus</i>			
473.	<i>Epinephelus coioides</i>			
474.	<i>Epinephelus fasciatus</i>			
475.	<i>Epinephelus melanostigma</i>			
476.	<i>Epinephelus quoyanus</i>			
477.	<i>Epinephelus rivulatus</i>			
478.	<i>Epinephelus sexfasciatus</i>			
479.	<i>Epinephelus</i> sp.			
480.	24567 <i>Epthianura albifrons</i> (White-fronted Chat)			
481.	24568 <i>Epthianura aurifrons</i> (Orange Chat)			
482.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			
483.	<i>Equulites moretoniensis</i>			
484.	24258 <i>Equus caballus</i> (Horse)	Y		
485.	42404 <i>Eremiascincus isolepis</i>			
486.	43381 <i>Eremiascincus pallidus</i> (Western Narrow-banded Skink, Narrow-banded Sand Swimmer)			
487.	25109 <i>Eremiascincus richardsonii</i> (Broad-banded Sand Swimmer)			
488.	24837 <i>Eremionis carteri</i> (Spinifex-bird)			
489.	24379 <i>Erythrogonys cinctus</i> (Red-kneed Dotterel)			
490.	47938 <i>Esacus magnirostris</i> (Beach Stone-curlew, Beach Thick-knee)			
491.	<i>Ethmostigmus rubripes</i>			
492.	<i>Euasteron ursulae</i>			
493.	<i>Eubalichthys caeruleoguttatus</i>			
494.	<i>Euristhmus nudiceps</i>			
495.	<i>Eusurculus pistillum</i>			
496.	<i>Eviota bipunctata</i>			Y
497.	<i>Eviota melasma</i>			
498.	<i>Eviota sebreei</i>			
499.	<i>Eviota</i> sp.			
500.	<i>Eviota</i> sp. 1			
501.	<i>Exallias brevis</i>			
502.	25621 <i>Falco berigora</i> (Brown Falcon)			
503.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
504.	25623 <i>Falco longipennis</i> (Australian Hobby)			
505.	24041 <i>Felis catus</i> (Cat)	Y		
506.	<i>Feroxodon multistriatus</i>			
507.	<i>Fistularia commersonii</i>			
508.	<i>Fistularia petimba</i>			
509.	<i>Foa fo</i>			
510.	<i>Foa</i> sp.			Y
511.	<i>Fowleria aurita</i>			
512.	<i>Fowleria variegata</i>			
513.	25727 <i>Fulica atra</i> (Eurasian Coot)			
514.	25301 <i>Furina ornata</i> (Moon Snake)			
515.	<i>Fusigobius maximus</i>			Y
516.	25730 <i>Gallirallus philippensis</i> (Buff-banded Rail)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
517.	24765 <i>Gallirallus philippensis</i> subsp. <i>mellori</i> (Buff-banded Rail)			
518.	<i>Gambusia holbrooki</i>			
519.	42314 <i>Gavicalis virescens</i> (Singing Honeyeater)			
520.	<i>Gazza minuta</i>			
521.	24952 <i>Gehyra australis</i>			
522.	24956 <i>Gehyra pilbara</i>			
523.	24958 <i>Gehyra punctata</i>			
524.	24959 <i>Gehyra variegata</i>			
525.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			
526.	24402 <i>Geopelia humeralis</i> (Bar-shouldered Dove)			
527.	25585 <i>Geopelia striata</i> (Zebra Dove)			
528.	24404 <i>Geophaps plumifera</i> (Spinifex Pigeon)			
529.	<i>Gerres filamentosus</i>			
530.	<i>Gerres oblongus?</i>			Y
531.	<i>Gerres</i> sp.			
532.	<i>Gerres subfasciatus</i>			
533.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
534.	24276 <i>Gerygone tenebrosa</i> (Dusky Gerygone)			
535.	<i>Glaucosoma buergeri</i>			
536.	<i>Glaucosoma hebraicum</i>			
537.	<i>Glaucosoma magnificum</i>			
538.	<i>Glennhuntia glennhunti</i>			Y
539.	24054 <i>Globicephala macrorhynchus</i> (Short-finned Pilot Whale)			
540.	<i>Gnathanodon speciosus</i>			
541.	<i>Gnatholepis cauerensis</i>			
542.	<i>Gobiodon axillaris</i>			
543.	<i>Gobiodon citrinus</i>			
544.	<i>Gobiodon histrio</i>			
545.	<i>Gobiodon quinquestrigatus</i>			
546.	<i>Gobiopsis aporia</i>			
547.	<i>Gobiopsis bravoii</i>			Y
548.	<i>Gonorynchus greyi</i>			
549.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
550.	<i>Grammatobothus polyophthalmus</i>			
551.	<i>Grammatorycnus bicarinatus</i>			
552.	<i>Grammistes sexlineatus</i>			
553.	<i>Gymnocranius griseus</i>			
554.	<i>Gymnothorax buroensis</i>			
555.	<i>Gymnothorax eurostus</i>			
556.	<i>Gymnothorax flavimarginatus</i>			
557.	<i>Gymnothorax nudivomer</i>			Y
558.	<i>Gymnothorax pictus</i>			
559.	<i>Gymnothorax pseudothyrsoides</i>			
560.	<i>Gymnothorax</i> sp.			
561.	<i>Gymnothorax undulatus</i>			
562.	<i>Gymnothorax zonipectis</i>			
563.	<i>Gymnura australis</i>			
564.	25627 <i>Haematopus fuliginosus</i> (Sooty Oystercatcher)			
565.	24487 <i>Haematopus longirostris</i> (Pied Oystercatcher)			
566.	24293 <i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)			
567.	25541 <i>Haliastur indus</i> (Brahminy Kite)			
568.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
569.	<i>Halicampus grayi</i>			
570.	<i>Halicampus spirostris</i>			Y
571.	<i>Halichoeres biocellatus</i>			
572.	<i>Halichoeres margaritaceus</i>			
573.	<i>Halichoeres marginatus</i>			
574.	<i>Halichoeres melanochir</i>			
575.	<i>Halichoeres nebulosus</i>			
576.	<i>Haliutaea brevicaudata?</i>			
577.	<i>Haliutaea</i> sp. W1			
578.	<i>Haliutaea</i> sp. W2			
579.	<i>Halophryne diemensis</i>			
580.	<i>Halophryne ocellatus</i>			
581.	24297 <i>Hamirostra melanosternon</i> (Black-breasted Buzzard)			
582.	<i>Helcogramma decurrens</i>			
583.	<i>Helcogramma striata</i>			
584.	<i>Hemigaleus australiensis</i>			
585.	<i>Hemigaleus</i> sp.			
586.	<i>Hemipristis elongata</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
587.	<i>Hemiramphus far</i>			
588.	<i>Heniochus acuminatus</i>			
589.	<i>Herklotsichthys blackburni</i>			
590.	<i>Herklotsichthys koningsbergeri</i>			
591.	24961 <i>Heteronotia binoei</i> (Bynoe's Gecko)			
592.	24962 <i>Heteronotia spelea</i> (Desert Cave Gecko, Pilbara Cave Gecko)			
593.	<i>Heteropoda hermitis</i>			
594.	<i>Heteropriacanthus cruentatus</i>			
595.	<i>Heurodes turrilus</i>			
596.	47965 <i>Hieraetus morphnoides</i> (Little Eagle)			
597.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
598.	<i>Hippocampus montebelloensis</i>			Y
599.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
600.	<i>Histrio histrio</i>			
601.	<i>Hoggicosa snelli</i>			
602.	<i>Hologymnosus annulatus</i>			
603.	<i>Hologymnosus doliatus</i>			Y
604.	<i>Hoplichthys citrinus</i>			
605.	25366 <i>Hydrophis elegans</i> (Elegant Seasnake, Bar-bellied Seasnake)			
606.	44656 <i>Hydrophis major</i> (Olive-headed seasnake, greater seasnake)			
607.	42410 <i>Hydrophis ornatus</i> (Ornate Reef Seasnake, Sea Snake)			
608.	43385 <i>Hydrophis stokesii</i> (Stoke's Seasnake, Sea Snake)			
609.	<i>Hypnos monopterygium</i>			
610.	<i>Hypoatherina temminckii</i>			
611.	<i>Ichthyoscopus insperatus</i>			
612.	<i>Ideoblothrus papillon</i>			Y
613.	<i>Ideoblothrus woodi</i>			Y
614.	<i>Indohya humphreysi</i>			Y
615.	<i>Indolpium</i> sp.			
616.	<i>Inegocia japonica</i>			
617.	<i>Inimicus sinensis</i>			
618.	<i>Isopedella tindalei</i>			
619.	<i>Istiblennius edentulus</i>			
620.	<i>Istiblennius lineatus</i>			
621.	<i>Istiblennius meleagris</i>			
622.	<i>Istigobius decoratus</i>			
623.	<i>Istiophorus platypterus</i>			
624.	<i>Jalmenus clementi</i>			Y
625.	<i>Kyphosus</i> sp.			
626.	<i>Labracinus lineatus</i>			
627.	<i>Labrichthys unilineatus</i>			
628.	<i>Labroides dimidiatus</i>			
629.	<i>Lactoria cornuta</i>			
630.	<i>Lactoria fornasini</i>			
631.	<i>Lagocephalus sceleratus</i>			
632.	24367 <i>Lalage tricolor</i> (White-winged Triller)			
633.	<i>Lampona quinqueplagiata</i>			
634.	<i>Lamponina scutata</i>			
635.	25637 <i>Larus novaehollandiae</i> (Silver Gull)			
636.	24511 <i>Larus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Silver Gull)			
637.	25638 <i>Larus pacificus</i> (Pacific Gull)			
638.	<i>Latrodectus hasseltii</i>			
639.	<i>Leiognathus bindus</i>			
640.	<i>Leiognathus leuciscus</i>			
641.	<i>Leiognathus</i> sp.			
642.	<i>Lepidotrigla</i> sp.			
643.	<i>Leptasteron platyconductor</i>			
644.	<i>Leptoscarus vaigiensis</i>			
645.	<i>Leptus waldockae</i>			Y
646.	25125 <i>Lerista bipes</i>			
647.	30928 <i>Lerista clara</i>			
648.	25133 <i>Lerista elegans</i>			
649.	30929 <i>Lerista jacksoni</i>			
650.	25148 <i>Lerista lineopunctulata</i>			
651.	25482 <i>Lerista macropisthopus</i>			
652.	25151 <i>Lerista macropisthopus</i> subsp. <i>fusciceps</i>			
653.	<i>Lerista miopus</i>			Y
654.	25155 <i>Lerista muelleri</i>			
655.	25484 <i>Lerista planiventralis</i>			
656.	25163 <i>Lerista planiventralis</i> subsp. <i>planiventralis</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
657.	<i>Lethrinus atkinsoni</i>			
658.	<i>Lethrinus genivittatus</i>			
659.	<i>Lethrinus haematopterus</i>			Y
660.	<i>Lethrinus laticaudis</i>			
661.	<i>Lethrinus miniatus</i>			
662.	<i>Lethrinus nebulosus</i>			
663.	<i>Lethrinus olivaceus</i>			
664.	<i>Lethrinus punctulatus</i>			
665.	<i>Lethrinus rubrioperculatus</i>			
666.	<i>Lethrinus</i> sp.			
667.	<i>Liachirus whitleyi</i>			Y
668.	25005 <i>Lialis burtonis</i>			
669.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
670.	24582 <i>Lichmera indistincta</i> subsp. <i>indistincta</i> (Brown Honeyeater)			
671.	<i>Limnichthys fasciatus</i>			
672.	<i>Liocranium praepositum</i>			
673.	<i>Liopropoma susumi</i>			
674.	<i>Liza alata</i>			
675.	<i>Liza</i> sp.			
676.	<i>Liza subviridis</i>			
677.	<i>Lobotes surinamensis</i>			
678.	<i>Lophiocharon trisignatus</i>			
679.	<i>Lophiodes mutilus</i>			Y
680.	30933 <i>Lucasium stenodactylum</i>			
681.	30934 <i>Lucasium wombeyi</i>			
682.	<i>Lutjanid</i> sp.			
683.	<i>Lutjanus carponotatus</i>			
684.	<i>Lutjanus erythropterus</i>			
685.	<i>Lutjanus fulviflamma</i>			
686.	<i>Lutjanus lemniscatus</i>			
687.	<i>Lutjanus lutjanus</i>			
688.	<i>Lutjanus malabaricus</i>			
689.	<i>Lutjanus vitta</i>			
690.	<i>Lychas mjobergi</i>			
691.	<i>Macropharyngodon negrosensis</i>			
692.	<i>Macropharyngodon ornatus</i>			
693.	25489 <i>Macropus robustus</i> (Euro, Biggada)			
694.	24135 <i>Macropus robustus</i> subsp. <i>erubescens</i> (Euro, Biggada)			
695.	24136 <i>Macropus rufus</i> (Red Kangaroo, Marlu)			
696.	<i>Malthopsis</i> n. sp. 8			Y
697.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
698.	25652 <i>Malurus leucopterus</i> (White-winged Fairy-wren)			
699.	24583 <i>Manorina flavigula</i> (Yellow-throated Miner)			
700.	<i>Masasteron gracilis</i>			
701.	<i>Masasteron sampeyae</i>			
702.	<i>Maurolicus javanicus</i>			
703.	<i>Megalaspis cordyla</i>			
704.	<i>Meiacanthus grammistes</i>			
705.	47997 <i>Melanodryas cucullata</i> (Hooded Robin)			
706.	25665 <i>Melithreptus gularis</i> (Black-chinned Honeyeater)			
707.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
708.	<i>Mene maculata</i>			
709.	25184 <i>Menetia greyii</i>			
710.	25491 <i>Menetia surda</i>			
711.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
712.	<i>Metavelifer multiradiatus</i>			
713.	<i>Microcanthus strigatus</i>			
714.	<i>Microcarbo melanoleucos</i>			
715.	25542 <i>Milvus migrans</i> (Black Kite)			
716.	<i>Minous</i> sp.			
717.	<i>Minous versicolor</i>			
718.	25545 <i>Mirafra javanica</i> (Horsfield's Bushlark, Singing Bushlark)			
719.	24213 <i>Mirounga leonina</i> (Southern Elephant Seal)			
720.	<i>Missulena occatoria</i>			
721.	<i>Miturga occidentalis</i>			
722.	24904 <i>Moloch horridus</i> (Thorny Devil)			
723.	<i>Monacanthus chinensis</i>			
724.	<i>Monocentris japonicus</i>			
725.	<i>Monodactylus argenteus</i>			
726.	25191 <i>Morethia lineocellata</i>			

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727.	25495 <i>Morethia ruficauda</i>			
728.	25193 <i>Morethia ruficauda</i> subsp. <i>exquisita</i>			
729.	48008 <i>Morus serrator</i> (Australasian Gannet)			
730.	<i>Mugil cephalus</i>			
731.	<i>Muraenesox cinereus</i>			
732.	<i>Muraenesox</i> sp.			Y
733.	<i>Muraenichthys gymnotus</i>			
734.	24223 <i>Mus musculus</i> (House Mouse)	Y		
735.	<i>Myripristis berndti</i>			
736.	<i>Myripristis kuntee</i>			
737.	<i>Myripristis murdjan</i>			
738.	<i>Myripristis</i> sp.			
739.	<i>Narcine westraliensis</i>			
740.	<i>Naso brevirostris</i>			
741.	<i>Naso unicornis</i>			
742.	<i>Nectamia bandanensis</i>			
743.	<i>Nectamia fusca</i>			
744.	<i>Nectamia savayensis</i>			
745.	<i>Nelusetta ayraudi</i>			
746.	<i>Nemipterus peronii</i>			
747.	25422 <i>Neobatrachus aquilonius</i> (Northern Burrowing Frog)			
748.	25424 <i>Neobatrachus fulvus</i> (Tawny Trilling Frog)			
749.	25427 <i>Neobatrachus sutor</i> (Shoemaker Frog)			
750.	25685 <i>Neochmia ruficauda</i> (Star Finch)			
751.	<i>Neoglyphidodon melas</i>			
752.	<i>Neoglyphidodon nigroris</i>			
753.	<i>Neopomacentrus azysron</i>			
754.	<i>Neopomacentrus cyanomos</i>			
755.	<i>Neosebastes occidentalis</i>			
756.	<i>Nephila edulis</i>			
757.	<i>Nephila plumipes</i>			
758.	25497 <i>Nephurus levis</i>			
759.	24968 <i>Nephurus levis</i> subsp. <i>occidentalis</i>			
760.	24095 <i>Ningauai timealeyi</i> (Pilbara Ningauai)			
761.	25747 <i>Ninox connivens</i> (Barking Owl)			
762.	<i>Nomindra leeuweni</i>			
763.	<i>Norfolkia brachylepis</i>			
764.	<i>Norfolkia</i> sp.			
765.	<i>Notograpus guttatus</i>			
766.	24224 <i>Notomys alexis</i> (Spinifex Hopping-mouse)			
767.	25499 <i>Notoscincus ornatus</i>			
768.	25197 <i>Notoscincus ornatus</i> subsp. <i>ornatus</i>			
769.	<i>Notsodipus bidgemia</i>			
770.	<i>Notsodipus capensis</i>			
771.	25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron)			
772.	24194 <i>Nyctophilus geoffroyi</i> (Lesser Long-eared Bat)			
773.	24742 <i>Nymphicus hollandicus</i> (Cockatiel)			
774.	<i>Ocrisiona leucomis</i>			
775.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
776.	<i>Ogilbia</i> sp.			
777.	<i>Omegophora armilla</i>			
778.	<i>Omobranchus germaini</i>			
779.	<i>Omobranchus rotundiceps</i>			
780.	<i>Omobranchus</i> sp.			
781.	<i>Onigocia spinosa</i>			
782.	<i>Ophichthus celebicus?</i>			
783.	<i>Opistognathus darwiniensis</i>			
784.	<i>Opistognathus inornata</i>			Y
785.	<i>Opistognathus inornatus</i>			
786.	<i>Oplopomus</i> sp.			Y
787.	24061 <i>Orcinus orca</i> (Killer Whale)			
788.	<i>Oreo capensis</i>			
789.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			
790.	34012 <i>Oreoica gutturalis</i> subsp. <i>pallescens</i> (Crested Bellbird, central)			
791.	<i>Ornithodoros gurneyi</i>			
792.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
793.	48034 <i>Osphranter robustus</i> (Euro, Biggada)			
794.	<i>Ostracion cubicus</i>			
795.	<i>Ostracion meleagris</i>			
796.	34016 <i>Ovis aries</i> (Sheep)			

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797.	<i>Oxycheilinus unifasciatus</i>			
798.	<i>Oxymonacanthus longirostris</i>			
799.	24620 <i>Pachycephala lanioides</i> (White-breasted Whistler)			
800.	25678 <i>Pachycephala melanura</i> (Mangrove Golden Whistler)			
801.	24621 <i>Pachycephala melanura</i> subsp. <i>melanura</i> (Mangrove Golden Whistler)			
802.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
803.	<i>Pallenopsis cidaribatus</i>			
804.	<i>Parablennius postocolomaculatus</i>			
805.	<i>Paracentropogon</i> sp.			
806.	<i>Paracentropogon vespa</i>			
807.	<i>Parachaetodon ocellatus</i>			
808.	<i>Parachaeturichthys polynema</i>			
809.	<i>Paracirrhites arcatus</i>			
810.	<i>Paracirrhites forsteri</i>			
811.	<i>Paradiplogrammus enneactis</i>			
812.	<i>Paramonacanthus choirocephalus</i>			
813.	<i>Paranymphon bifilarium</i>			Y
814.	<i>Parapercis diplospilus</i>			
815.	<i>Parapercis millepunctata</i>			
816.	<i>Parapercis multiplicata</i>			
817.	<i>Parapercis nebulosa</i>			
818.	<i>Paraplagusia bilineata</i>			
819.	<i>Paraploactis pulvinus</i>			
820.	<i>Paraploactis</i> sp.			Y
821.	<i>Paraplotosus albilabris</i>			
822.	<i>Paraplotosus butleri</i>			
823.	<i>Paraplotosus</i> sp.			
824.	<i>Parapriacanthus ransonneti</i>			
825.	<i>Parascolopsis</i> sp.			
826.	<i>Parascorpaena picta</i>			
827.	<i>Parastromateus niger</i>			
828.	25681 <i>Pardalotus punctatus</i> (Spotted Pardalote)			
829.	24627 <i>Pardalotus rubricatus</i> (Red-browed Pardalote)			
830.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
831.	<i>Parexocoetus brachypterus</i>			
832.	<i>Parupeneus barberinoides</i>			
833.	<i>Parupeneus cyclostomus</i>			
834.	<i>Parupeneus multifasciatus</i>			
835.	<i>Parupeneus pleurostigma</i>			
836.	<i>Parupeneus</i> sp.			
837.	<i>Parupeneus spilurus</i>			
838.	<i>Pataecus</i> sp.			
839.	<i>Pegasus volitans</i>			
840.	<i>Pelates quadrilineatus</i>			
841.	<i>Pelates sexlineatus</i>			
842.	24648 <i>Pelecanus conspicillatus</i> (Australian Pelican)			
843.	<i>Pellona ditchela</i>			
844.	<i>Pempheris mangula</i>			
845.	<i>Pempheris</i> n.sp.			
846.	<i>Pempheris</i> sp.			
847.	<i>Pempheris ypsilychnus</i>			
848.	<i>Pentapodus emeryii</i>			
849.	<i>Pentapodus porosus</i>			
850.	<i>Pentapodus</i> sp.			
851.	<i>Pentapodus vitta</i>			
852.	<i>Periophthalmus argenteolineatus</i>			
853.	<i>Peristrominopus dolosus</i>			
854.	<i>Pervagor janthinosoma</i>			
855.	48060 <i>Petrochelidon ariel</i> (Fairy Martin)			
856.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			
857.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
858.	<i>Petroscirtes breviceps</i>			
859.	<i>Petroscirtes mitratus</i>			
860.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
861.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
862.	25699 <i>Phalacrocorax varius</i> (Pied Cormorant)			
863.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
864.	<i>Plagiotremus rhinorhynchus</i>			
865.	<i>Plagiotremus tapeinosoma</i>			
866.	24102 <i>Planigale maculata</i> (Common Planigale)			

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867.	24842 <i>Platalea regia</i> (Royal Spoonbill)			
868.	<i>Platax batavianus</i>			
869.	<i>Platax</i> sp.			
870.	<i>Platycephalus arenarius</i>			
871.	<i>Platycephalus endrachtensis</i>			
872.	24751 <i>Platyercus zonarius</i> subsp. <i>zonarius</i> (Port Lincoln Parrot)			
873.	<i>Plectorhinchus flavomaculatus</i>			
874.	<i>Plectorhinchus pictus</i>			
875.	<i>Plectorhinchus unicolor</i>			
876.	<i>Plectroglyphidodon johnstonianus</i>			
877.	<i>Plectroglyphidodon lacrymatus</i>			
878.	<i>Plectroglyphidodon leucozonus</i>			
879.	<i>Plectropomus maculatus</i>			
880.	<i>Plesiops coeruleolineatus</i>			
881.	<i>Plesiops verecundus</i>			
882.	<i>Plotosus lineatus</i>			
883.	25703 <i>Podargus strigoides</i> (Tawny Frogmouth)			
884.	24679 <i>Podargus strigoides</i> subsp. <i>brachypterus</i> (Tawny Frogmouth)			
885.	<i>Poecilia reticulata</i>			
886.	24907 <i>Pogona minor</i> subsp. <i>minor</i> (Dwarf Bearded Dragon)			
887.	24681 <i>Poliocephalus poliocephalus</i> (Hoary-headed Grebe)			
888.	<i>Polydactylus multiradiatus</i>			
889.	<i>Polydactylus plebius</i>			
890.	<i>Polyipnus triphanos?</i>			
891.	<i>Pomacanthus semicirculatus</i>			
892.	<i>Pomacentrus coelestis</i>			
893.	<i>Pomacentrus milleri</i>			
894.	<i>Pomacentrus moluccensis</i>			
895.	<i>Pomacentrus nagasakiensis</i>			
896.	<i>Pomacentrus</i> sp.			
897.	<i>Pomacentrus vaiuli</i>			
898.	<i>Pomadasys argenteus</i>			
899.	<i>Pomadasys maculatus</i>			
900.	25706 <i>Pomatostomus temporalis</i> (Grey-crowned Babbler)			
901.	24769 <i>Porzana fluminea</i> (Australian Spotted Crane)			
902.	<i>Prethopalpus alexanderi</i>			Y
903.	<i>Prethopalpus infernalis</i>			Y
904.	<i>Priacanthus hamrur</i>			
905.	<i>Priacanthus tayenus</i>			
906.	<i>Priolepis cincta</i>			
907.	<i>Priolepis nuchifasciata</i>			
908.	<i>Priolepis semidoliata</i>			
909.	<i>Pristipomoides argyrogrammicus</i>			
910.	<i>Pristipomoides typus</i>			
911.	<i>Pristotis obtusirostris</i>			
912.	<i>Psammodesmus ocellatus</i>			
913.	<i>Psammoperca waigiensis</i>			
914.	<i>Psenes arafurensis?</i>			
915.	<i>Psenes seriollela?</i>			Y
916.	<i>Psettodes erumei</i>			
917.	<i>Pseudamiops</i> sp.			
918.	24105 <i>Pseudantechinus roryi</i> (Rory's Pseudantechinus)			
919.	24106 <i>Pseudantechinus woolleyae</i> (Woolley's Pseudantechinus)			
920.	<i>Pseudanthias cooperi</i>			
921.	<i>Pseudanthias</i> sp.			
922.	25261 <i>Pseudechis australis</i> (Mulga Snake)			
923.	<i>Pseudobalistes fuscus</i>			
924.	<i>Pseudocallirichthys goodladi</i>			
925.	<i>Pseudocaranx dentex</i>			
926.	<i>Pseudochromis cyanotaenia</i>			
927.	<i>Pseudochromis fuscus</i>			
928.	<i>Pseudochromis marshallensis</i>			
929.	<i>Pseudochromis quinquedentatus</i>			
930.	<i>Pseudochromis tapeinosoma</i>			
931.	<i>Pseudochromis wilsoni</i>			
932.	<i>Pseudogramma polyacanthum</i>			
933.	<i>Pseudojuloides elongatus</i>			
934.	<i>Pseudolampona marun</i>			Y
935.	<i>Pseudomonacanthus peroni</i>			
936.	24237 <i>Pseudomys hermannsburgensis</i> (Sandy Inland Mouse)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
937.	42416 <i>Pseudonaja mengdeni</i> (Western Brown Snake)			
938.	25263 <i>Pseudonaja modesta</i> (Ringed Brown Snake)			
939.	25432 <i>Pseudophryne douglasi</i> (Gorge Toadlet)			
940.	<i>Pseudoplesiops rosae</i>			
941.	<i>Pseudorhombus arsius</i>			
942.	<i>Pseudorhombus duplici-cellatus</i>			
943.	<i>Pseudorhombus jenynsii</i>			
944.	<i>Pseudorhombus quinquocellatus</i>			
945.	<i>Pseudorhombus</i> sp.			
946.	24390 <i>Psophodes occidentalis</i> (Western Wedgebill, Chiming Wedgebill)			
947.	<i>Pteragogus enneacanthus</i>			
948.	<i>Pterapogon mirifica</i>			
949.	<i>Ptereleotris evides</i>			
950.	25711 <i>Pterodroma mollis</i> (Soft-plumaged Petrel)			
951.	<i>Pterois antennata</i>			
952.	<i>Pterois russelli</i>			
953.	<i>Pterois volitans</i>			
954.	24172 <i>Pteropus alecto</i> (Black Flying-fox)			
955.	24173 <i>Pteropus scapulatus</i> (Little Red Flying-fox)			
956.	<i>Ptilonorhynchus guttatus</i>			
957.	25724 <i>Ptilonorhynchus maculatus</i> (Spotted Bowerbird)			
958.	24757 <i>Ptilonorhynchus maculatus</i> subsp. <i>guttatus</i> (Western Bowerbird)			
959.	42323 <i>Ptilotula keartlandi</i> (Grey-headed Honeyeater)			
960.	24711 <i>Puffinus assimilis</i> subsp. <i>assimilis</i> (Little Shearwater)			
961.	25009 <i>Pygopus nigriceps</i>			
962.	24278 <i>Pyrrholaemus brunneus</i> (Redthroat)			
963.	<i>Rachycentron canadum</i>			
964.	<i>Rainfordia opercularis</i>			
965.	<i>Ranzania laevis</i>			
966.	<i>Rastrelliger kanagurta</i>			
967.	<i>Ratabulus diversidens</i>			Y
968.	<i>Ratabulus fulviguttatus</i>			
969.	24245 <i>Rattus rattus</i> (Black Rat)	Y		
970.	<i>Rhabdamia cypselurus</i>			
971.	<i>Rhabdamia gracilis</i>			
972.	<i>Rhabdosargus sarba</i>			
973.	<i>Rhagada capensis</i>			Y
974.	<i>Rhinecanthus aculeatus</i>			
975.	48096 <i>Rhipidura albiscapa</i> (Grey Fantail)			
976.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
977.	24454 <i>Rhipidura leucophrys</i> subsp. <i>leucophrys</i> (Willie Wagtail)			
978.	24457 <i>Rhipidura phasiana</i> (Mangrove Grey Fantail)			
979.	<i>Rhizoprionodon acutus</i>			
980.	<i>Rhynchobatus djiddensis</i>			
981.	24982 <i>Rhynchoedura ornata</i> (Western Beaked Gecko)			
982.	<i>Rhynchostracion nasus</i>			
983.	24174 <i>Saccolaimus flaviventris</i> (Yellow-bellied Sheath-tailed Bat)			
984.	<i>Salarias fasciatus</i>			
985.	<i>Salarias ramosus</i>			
986.	<i>Salarias sexfilum</i>			
987.	<i>Sargocentron rubrum</i>			
988.	<i>Sargocentron tiele</i>			
989.	<i>Saurida argentea</i>			
990.	<i>Saurida gracilis</i>			
991.	<i>Saurida grandisquamis</i>			
992.	<i>Saurida nebulosa</i>			
993.	<i>Saurida</i> sp.			
994.	<i>Saurida undosquamis</i>			
995.	<i>Scaevius milii</i>			
996.	<i>Scarus aërginosus</i>			Y
997.	<i>Scarus schlegeli</i>			
998.	<i>Scolopendra morsitans</i>			
999.	<i>Scolopsis monogramma</i>			
1000.	<i>Scolopsis</i> sp.			
1001.	<i>Scolopsis taenioptera</i>			
1002.	<i>Scolopsis xenochrous</i>			Y
1003.	<i>Scomberoides commersonianus</i>			
1004.	<i>Scomberoides lysan</i>			
1005.	<i>Scomberomorus commerson</i>			
1006.	<i>Scomberomorus queenslandicus</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1007.	<i>Scorpaenodes guamensis</i>			
1008.	<i>Scorpaenodes littoralis</i>			
1009.	<i>Scorpaenodes sp.</i>			
1010.	<i>Scorpaenodes varipinnis</i>			
1011.	<i>Scorpaenopsis diabolus</i>			
1012.	<i>Scorpaenopsis papuensis</i>			
1013.	24200 <i>Scotorepens greyii</i> (Little Broad-nosed Bat)			
1014.	<i>Secutor insidiator</i>			
1015.	<i>Secutor interruptus</i>			
1016.	<i>Selar sp.</i>			
1017.	<i>Selaroides leptolepis</i>			
1018.	<i>Selenotoca multifasciata</i>			
1019.	<i>Seriolina nigrofasciata</i>			
1020.	<i>Siganus fuscescens</i>			
1021.	<i>Siganus sp.</i>			
1022.	<i>Siganus spinus</i>			
1023.	<i>Siganus trispilos</i>			Y
1024.	<i>Silhouettea insinuans</i>			Y
1025.	<i>Sillago analis</i>			
1026.	<i>Sillago burrus</i>			
1027.	<i>Sillago ciliata</i>			
1028.	<i>Sillago lutea</i>			
1029.	<i>Sillago maculata</i>			
1030.	<i>Sillago sp.</i>			
1031.	<i>Sillago vittata</i>			
1032.	25266 <i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
1033.	25267 <i>Simoselaps littoralis</i> (West Coast Banded Snake)			
1034.	30948 <i>Smicromis brevirostris</i> (Weebill)			
1035.	24116 <i>Sminthopsis macroura</i> (Stripe-faced Dunnart)			
1036.	<i>Sphyaena barracuda</i>			
1037.	<i>Sphyaena obtusata</i>			
1038.	<i>Spratelloides gracilis</i>			
1039.	<i>Spratelloides robustus</i>			
1040.	<i>Stanulus talboti</i>			
1041.	<i>Stegastes fasciolatus</i>			
1042.	<i>Stegastes obreptus</i>			
1043.	<i>Stephanolepis auratus</i>			Y
1044.	24521 <i>Sterna bengalensis</i> (Lesser Crested Tern)			
1045.	24522 <i>Sterna bergii</i> (Crested Tern)			
1046.	48594 <i>Sternula nereis</i> (Fairy Tern)			
1047.	<i>Stethojulis bandanensis</i>			
1048.	<i>Stethojulis interrupta</i>			
1049.	<i>Stethojulis strigiventer</i>			
1050.	25656 <i>Stipiturus ruficeps</i> (Rufous-crowned Emu-wren)			
1051.	24556 <i>Stipiturus ruficeps</i> subsp. <i>ruficeps</i> (Rufous-crowned Emu-wren)			
1052.	<i>Storena sinuosa</i>			
1053.	25590 <i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
1054.	24924 <i>Strophurus ciliaris</i> subsp. <i>aberrans</i>			
1055.	24927 <i>Strophurus elderi</i>			
1056.	24932 <i>Strophurus jeanae</i>			
1057.	24941 <i>Strophurus rankini</i>			
1058.	24946 <i>Strophurus strophurus</i>			
1059.	<i>Stygirochiropus communis</i>			
1060.	<i>Suezichthys cyanolaemus</i>			
1061.	<i>Sufflamen bursa</i>			
1062.	<i>Sufflamen chrysopterus</i>			
1063.	<i>Sufflamen fraenatus</i>			
1064.	<i>Sugggrundus sp.</i>			
1065.	<i>Sunagocia otaitensis</i>			
1066.	25269 <i>Suta fasciata</i> (Rosen's Snake)			
1067.	<i>Synanceia horrida</i>			
1068.	<i>Synchiropus morrisoni</i>			
1069.	<i>Synodus hoshinonis?</i>			Y
1070.	<i>Synodus jaculum</i>			
1071.	<i>Synodus sp.</i>			
1072.	<i>Synodus variegatus</i>			
1073.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
1074.	24207 <i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			
1075.	<i>Taenioides buchanani</i>			Y
1076.	30870 <i>Taeniopygia guttata</i> (Zebra Finch)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1077.	<i>Taeniura lymna</i>			
1078.	24175 <i>Taphozous georgianus</i> (Common Sheath-tailed Bat)			
1079.	<i>Tathicarpus butleri</i>			
1080.	<i>Terapon jarbua</i>			
1081.	<i>Terapon puta</i>			
1082.	<i>Terapon theraps</i>			
1083.	<i>Thalasseus bengalensis</i>			
1084.	<i>Thalassoma amblycephalum</i>			
1085.	<i>Thalassoma hardwicke</i>			
1086.	<i>Thalassoma lunare</i>			
1087.	<i>Thalassoma lutescens</i>			
1088.	<i>Thalassoma purpureum</i>			
1089.	<i>Thalassoma</i> sp.			
1090.	<i>Thamnaconus modestoides</i>			
1091.	<i>Thereuopoda lesueurii</i>			
1092.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
1093.	<i>Thryssa hamiltonii</i>			
1094.	<i>Thryssa mystax?</i>			
1095.	<i>Thryssa setirostris</i>			
1096.	<i>Thysanophrys cirronasus</i>			
1097.	25202 <i>Tiliqua multifasciata</i> (Central Blue-tongue)			
1098.	25207 <i>Tiliqua rugosa</i> subsp. <i>rugosa</i>			
1099.	25548 <i>Todiramphus chloris</i> (Collared Kingfisher)			
1100.	24306 <i>Todiramphus chloris</i> subsp. <i>pilbara</i> (Pilbara Collared Kingfisher)			
1101.	42351 <i>Todiramphus pyrrhopygius</i> (Red-backed Kingfisher)			
1102.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
1103.	<i>Torquigener pallimaculatus</i>			
1104.	<i>Torquigener tuberculiferus</i>			
1105.	<i>Torquigener whiteleyi</i>			
1106.	<i>Trachinocephalus myops</i>			
1107.	<i>Trachinotus blochii</i>			
1108.	<i>Trachurus novaezelandiae</i>			
1109.	<i>Trachyrhamphus longirostris</i>			Y
1110.	<i>Trachyspina capensis</i>			
1111.	<i>Tragulichthys jaculiferus</i>			
1112.	<i>Tragulichthys</i> sp.			Y
1113.	<i>Triacanthus biaculeatus</i>			
1114.	<i>Triacanthus</i> sp.			
1115.	48141 <i>Tribonyx ventralis</i> (Black-tailed Native-hen)			
1116.	<i>Trichiurus lepturus</i>			
1117.	<i>Trichiurus</i> sp.			
1118.	<i>Trichocyclus nigropunctatus</i>			
1119.	<i>Trichocyclus septentrionalis</i>			Y
1120.	<i>Trimma lantana</i>			
1121.	<i>Trimma okinawae</i>			
1122.	<i>Trimma</i> sp.			
1123.	<i>Tuoba sydneyensis</i>			
1124.	24851 <i>Turnix velox</i> (Little Button-quail)			
1125.	30954 <i>Tursiops aduncus</i> (Indo-Pacific Bottlenose Dolphin)			
1126.	<i>Tylosurus crocodilus</i>			
1127.	<i>Tyrannochthonius brooksi</i>			Y
1128.	<i>Tyrannochthonius butleri</i>			Y
1129.	<i>Ulua mentalis</i>			
1130.	<i>Upeneus moluccensis</i>			
1131.	<i>Upeneus</i> sp.			
1132.	<i>Upeneus tragula</i>			
1133.	<i>Upeneus vittatus</i>			
1134.	<i>Uraspis secunda</i>			Y
1135.	<i>Urodacus hoplurus</i>			
1136.	<i>Uropterygius concolor</i>			
1137.	<i>Valamugil buchanani</i>			
1138.	<i>Valenciennesa longipinnis</i>			
1139.	<i>Valenciennesa muralis</i>			
1140.	<i>Vanderhorstia ornatissima</i>			
1141.	24386 <i>Vanellus tricolor</i> (Banded Lapwing)			
1142.	25209 <i>Varanus acanthurus</i> (Spiny-tailed Monitor)			
1143.	25210 <i>Varanus brevicauda</i> (Short-tailed Pygmy Monitor)			
1144.	25212 <i>Varanus eremius</i> (Pygmy Desert Monitor)			
1145.	25216 <i>Varanus giganteus</i> (Perentie)			
1146.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1147.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
1148.	<i>Velifer hypselopterus</i>			
1149.	<i>Velifer</i> sp.			
1150.	24205 <i>Vespadelus finlaysoni</i> (Finlayson's Cave Bat)			
1151.	<i>Wandella waldockae</i>			
1152.	<i>Wesmaldra learmonth</i>			
1153.	<i>Wydundra kennedy</i>			
1154.	<i>Xenojulis margaritaceus</i>			
1155.	<i>Xiphasia setifer</i>			
1156.	<i>Yardiella humphreysi</i>			Y
1157.	<i>Yongeichthys criniger</i>			Y
1158.	<i>Yongeichthys nebulosus</i>			
1159.	<i>Zabidius novemaculeatus</i>			
1160.	<i>Zebrasoma scopas</i>			
1161.	<i>Zebrias cancellatus</i>			
1162.	<i>Zebrias quagga</i>			
1163.	<i>Zephyrichthys barryi</i>			
1164.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			
1165.	24857 <i>Zosterops luteus</i> (Yellow White-eye)			
1166.	<i>Zosterops luteus</i> subsp. <i>balstoni</i>			
1167.	24248 <i>Zyzomys argurus</i> (Common Rock-rat)			

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 06/08/21 17:37:28

[Summary](#)

[Details](#)

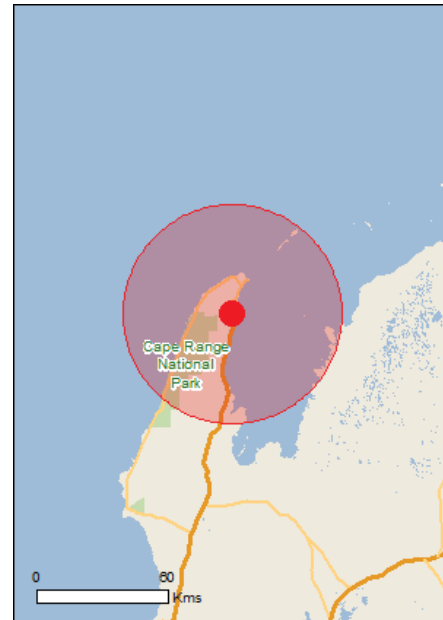
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

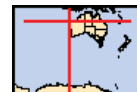
[Acknowledgements](#)



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[Coordinates](#)

Buffer: 50.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	33
Listed Migratory Species:	50

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	8
Commonwealth Heritage Places:	1
Listed Marine Species:	80
Whales and Other Cetaceans:	29
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	2

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	11
Regional Forest Agreements:	None
Invasive Species:	13
Nationally Important Wetlands:	2
Key Ecological Features (Marine)	4

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

Name	State	Status
The Ningaloo Coast	WA	Declared property

National Heritage Properties [\[Resource Information \]](#)

Name	State	Status
Natural		

The Ningaloo Coast	WA	Listed place
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Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name
EEZ and Territorial Sea

Marine Regions [\[Resource Information \]](#)

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name
North-west

Listed Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		

Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
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Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
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Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
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Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
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Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
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Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
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Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
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Name	Status	Type of Presence
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Fish		
Milyeringa veritas Blind Gudgeon [66676]	Vulnerable	Species or species habitat known to occur within area
Ophisternon candidum Blind Cave Eel [66678]	Vulnerable	Species or species habitat known to occur within area
Mammals		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat known to occur within area
Rhinonictis aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area
Reptiles		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or

Name	Status	Type of Presence
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	related behaviour known to occur within area Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Sharks		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species

Name	Threatened	Type of Presence
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Habitat likely to occur within area Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species

Name	Threatened	Type of Presence
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	habitat may occur within area Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Defence - EXMOUTH ADMIN & HF TRANSMITTING Defence - EXMOUTH NAVAL HF RECEIVING STATION (H/F Receiving Station, Learmonth, WA) Defence - EXMOUTH VLF TRANSMITTER STATION Defence - LEARMONTH - RAAF BASE Defence - LEARMONTH RADAR SITE - TWIN TANKS EXMOUTH Defence - LEARMONTH RADAR SITE - VLAMING HEAD EXMOUTH Defence - LEARMONTH TRANSMITTING STATION

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Natural		
Ningaloo Marine Area - Commonwealth Waters	WA	Listed place

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed		Species or species

Name	Threatened	Type of Presence
Shearwater [1043]		habitat likely to occur within area
Puffinus pacificus Wedge-tailed Shearwater [1027]		Breeding known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
Acentronura larsonae Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Halicampus nitidus Glittering Pipefish [66224]		area Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Breeding known to occur within area

Name	Threatened	Type of Presence
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia simus Dwarf Sperm Whale [58]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area

Name	Status	Type of Presence
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Name	Label	
Gascoyne	Multiple Use Zone (IUCN VI)	
Ningaloo	Recreational Use Zone (IUCN IV)	

Extra Information

State and Territory Reserves		[Resource Information]
Name	State	
Bundegi Coastal Park	WA	
Burnside And Simpson Island	WA	
Cape Range	WA	
Gnandaroo Island	WA	
Jurabi Coastal Park	WA	
Muiron Islands	WA	
Tent Island	WA	
Victor Island	WA	
Whalebone Island	WA	
Whitmore,Roberts,Doole Islands And Sandalwood Landing	WA	
Y Island	WA	

Invasive Species

[[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
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Birds

Columba livia

Rock Pigeon, Rock Dove, Domestic Pigeon [803]

Species or species habitat likely to occur within area

Mammals

Canis lupus familiaris

Domestic Dog [82654]

Species or species habitat likely to occur within area

Capra hircus

Goat [2]

Species or species habitat likely to occur within area

Equus asinus

Donkey, Ass [4]

Species or species habitat likely to occur within area

Equus caballus

Horse [5]

Species or species habitat likely to occur within area

Felis catus

Cat, House Cat, Domestic Cat [19]

Species or species habitat likely to occur within area

Mus musculus

House Mouse [120]

Species or species habitat likely to occur within area

Oryctolagus cuniculus

Rabbit, European Rabbit [128]

Species or species habitat likely to occur within area

Rattus rattus

Black Rat, Ship Rat [84]

Species or species habitat likely to occur within area

Vulpes vulpes

Red Fox, Fox [18]

Species or species habitat likely to occur within area

Plants

Cenchrus ciliaris

Buffel-grass, Black Buffel-grass [20213]

Species or species habitat likely to occur within area

Reptiles

Hemidactylus frenatus

Asian House Gecko [1708]

Species or species habitat likely to occur within area

Ramphotyphlops braminus

Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]

Species or species habitat may occur within area

Nationally Important Wetlands

[[Resource Information](#)]

Name	State
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[Cape Range Subterranean Waterways](#)

WA

[Exmouth Gulf East](#)

WA

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Ancient coastline at 125 m depth contour	North-west
Canyons linking the Cuvier Abyssal Plain and the	North-west
Commonwealth waters adjacent to Ningaloo Reef	North-west
Continental Slope Demersal Fish Communities	North-west

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-21.94569 114.1208

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [Office of Environment and Heritage, New South Wales](#)
- [Department of Environment and Primary Industries, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment, Water and Natural Resources, South Australia](#)
- [Department of Land and Resource Management, Northern Territory](#)
- [Department of Environmental and Heritage Protection, Queensland](#)
- [Department of Parks and Wildlife, Western Australia](#)
- [Environment and Planning Directorate, ACT](#)
- [Birdlife Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [South Australian Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- [Australian Tropical Herbarium, Cairns](#)
- [eBird Australia](#)
- [Australian Government – Australian Antarctic Data Centre](#)
- [Museum and Art Gallery of the Northern Territory](#)
- [Australian Government National Environmental Science Program](#)
- [Australian Institute of Marine Science](#)
- [Reef Life Survey Australia](#)
- [American Museum of Natural History](#)
- [Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

Appendix C

Flora Likelihood of Occurrence

Appendix: Assessment of the Likelihood of Occurrence of Threatened and Priority Flora as per Desktop Assessment Database Searches surrounding the Survey Area

Distance to Nearest Record from the Survey Area is based on a distance analysis undertaken against 2021 DBCA database. High = Suitable habitat present and records less than 5 km from the Survey Area, Medium = Suitable habitat present and records between 5 km and 15 km from the Survey Area, and Low = No suitable habitat present and/or records greater than 15 km from the Survey Area, Unknown = Insufficient information available to classify. CR= Listed as Critically Endangered under the EPBC Act, EN = Listed as Endangered under the EPBC Act, VU = listed as Vulnerable under the EPBC Act, T = Threatened under the BC Act, P = Priority Listed, Ranked and Listed by the DBCA. Likelihoods are assessed both pre and post survey based on knowledge of the Survey Area, nearest known records, known flowering period of flora taxa and knowledge gained from the survey effort during ground truthing.

Species	Conservation Status			Source			Distance to Nearest Record (km)	Flowering Period	Preferred Habitat	Habitat occurs within the Survey Area	Pre-Survey Likelihood of Occurrence	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	NatureMap	PMST	DBCA							
<i>Calytrix sp. Learmonth (S. Fox EMopp 1)</i>	P1		X			35.6	Aug	Rocky high point on limestone deposits.	Yes	Medium	Low	
<i>Acacia ryaniana</i>	P2		X			39.2	Jun - Nov	White or red sand, coastal sand dunes, flats. ²	No	Low	Low	
<i>Acanthocarpus rupestris</i>	P2		X		X	4.2	May - Jun	Red sand, limestone. ²	Yes	High	Recorded	
<i>Calandrinia sp. Cape Range (F. Obbens FO 10/18)</i>	P2		X			6.7	Jun - Sep	Red-brown sandy clay loam, skeletal soils between rocks over limestone.	Yes	Medium	High	
<i>Crinum flaccidum</i>	P2		X			38.4	Oct - Dec or Jan or May	Loam, clay, sandstone. Swamps, creeks. ²	No	Low	Low	
<i>Cucumis sp. Barrow Island (D.W. Goodall 1264)</i>	P2				X	8.1	May - Oct	Red sandy loams. Sandplain swales, footslopes of basalt, limestone plateau, calccrete slopes.	Yes	Medium	High	
<i>Daviesia pleurophylla</i>	P2		X		X	2.5	Aug - Oct	Deep red-brown sands. Sand dunes, dune crests.	No	High	Medium	
<i>Eremophila occidentis</i>	P2		X			11.8	Jul - Aug	Orange/red-brown deep sands. Limestone ranges, dunes, sandplains. ²	Yes	High	High	
<i>Harnieria kempeana subsp. rhadinophylla</i>	P2		X			8.9	May - Sep	Calcareous loam, brown sands. Amongst limestone rocks, on creek banks, bases of gorges. ²	Yes	High	Recorded	
<i>Tephrosia sp. North West Cape (G. Marsh 81)</i>	P2		X		X	1.6	May - Jul	Orange sands, red-brown clay loam. Limestone outcrops, rocks.	Yes	High	High	
<i>Tinospora esiangkara</i>	P2		X		X	6.7	Aug - Sep	Pebbly orange-brown calcareous loam. Limestone outcrops or ridges, near creek bank. ²	Yes	High	Recorded	
<i>Verticordia serotina</i>	P2		X			10.7	Aug - Sep	Red sand. Sand dunes. ²	No	High	Medium	
<i>Acacia alexandri</i>	P3		X		X	5.6	Jun - Sep	Limestone. Stony creeks, steep rocky slopes. ²	Yes	High	Recorded	
<i>Acacia startii</i>	P3		X			10.9	Jul - Aug	Calcareous loam with limestone pebbles. Stony hills and watercourses. ²	Yes	High	High	
<i>Corchorus congener</i>	P3		X		X	0.5	Apr - Oct	Sand, red sandy loam with limestone. Sand dunes, plains. ²	Yes	High	Recorded	
<i>Eremophila forrestii subsp. capensis</i>	P3		X		X	1.2	Jun - Jul	Brown rocky soils, limestone. Ridges. ²	Yes	High	Recorded	

¹ Department of Agriculture, Water and Environment (2020) ²Western Australian Herbarium (2020)

Species	Conservation Status			Source		Distance to Nearest Record (km)	Flowering Period	Preferred Habitat	Habitat occurs within the Survey Area	Pre-Survey Likelihood of Occurrence	Post-Survey Likelihood of Occurrence
	DBCA	EPBC	NatureMap	PMST	DBCA						
<i>Grevillea calcicola</i>	P3		X		X	3.7	Aug, Sep	Limestone hilltops. ²	Yes	High	Recorded
<i>Gymnanthera cunninghamii</i>	P3		X		X	16.5	Jan - Dec	Sandy soils. In areas surrounding permanent or semi-permanent water courses, among rocks on Burrup Peninsula. ²	No	High	Medium
<i>Helminthostachys zeylanica</i>	P3		X			18.4	May	Black peat. Shady sites in gallery forest, margins of creek. ²	No	Low	Low
<i>Lygodium flexuosum</i>	P3		X			33.2	Mar or Jun - Aug	Sand. Damp, shaded sites near rocky cliffs and gorges. ²	No	Low	Low
<i>Phyllanthus fuernrohrii</i>	P3		X			5.4	Feb and May - Sept	Sand over limestone, creek beds, limestone cliffs. ²	Yes	High	High
<i>Stackhousia umbellata</i>	P3		X		X	3.7	May - Aug	Sandy soils on limestone. ²	Yes	High	High
<i>Brachychiton obtusilobus</i>	P4		X		X	1.1	Aug - Sep	Skeletal soils. Rocky limestone ranges, gorges, occasionally sandplains. ²	Yes	Medium	Recorded
<i>Eremophila youngii</i> subsp. <i>lepidota</i>	P4		X		X	1	Jan or Mar or Jun or Aug - Sep	Stony red sandy loam. Flats plains, floodplains, sometimes semi-saline, clay flats. ²	Yes	Medium	Medium

¹ Department of Agriculture, Water and Environment (2020) ²Western Australian Herbarium (2020)

Appendix D

Inventory of Vascular Flora

Appendix: Inventory of Vascular Flora

Family	Taxon	Status (distance to nearest record)
Acanthaceae	<i>Dicladanthera forrestii</i>	
	<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>	
	<i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i>	P2
Aizoaceae	<i>Trianthema pilosum</i>	
Amaranthaceae	* <i>Aerva javanica</i>	
	<i>Amaranthus undulatus</i>	
	<i>Ptilotus auriculifolius</i>	RE (149km E)
	<i>Ptilotus clementii</i>	
	<i>Ptilotus divaricatus</i>	
	<i>Ptilotus exaltatus</i>	
	<i>Ptilotus helipteroides</i>	
	<i>Ptilotus obovatus</i> var. <i>obovatus</i>	
	<i>Ptilotus polystachyus</i>	
	<i>Ptilotus xerophilus</i>	
	<i>Surreya diandra</i>	
Apiaceae	<i>Daucus glochidiatus</i>	
Apocynaceae	<i>Cynanchum viminale</i> subsp. <i>australe</i>	
	<i>Vincetoxicum lineare</i>	
Asparagaceae	<i>Acanthocarpus preissii</i>	
	<i>Acanthocarpus rupestris</i>	P2
	<i>Acanthocarpus verticillatus</i>	
	<i>Thysanotus</i> ? <i>exfimbriatus</i>	
Asphodelaceae	* <i>Asphodelus fistulosus</i>	
Asteraceae	<i>Angianthus milnei</i>	
	<i>Angianthus</i> sp.	
	* <i>Bidens bipinnata</i>	
	<i>Calotis plumulifera</i>	
	* <i>Flaveria trinervia</i>	
	<i>Minuria leptophylla</i>	
	<i>Olearia</i> sp. Kennedy Range (G.Byrne 66)	
	<i>Peripleura arida</i>	
	<i>Pluchea dentex</i>	
	<i>Podolepis aristata</i> subsp. <i>aristata</i>	
	<i>Pterocaulon sphacelatum</i>	
	<i>Pterocaulon sphaeranthoides</i>	
	<i>Rhodanthe floribunda</i>	
	<i>Rhodanthe stricta</i>	
	<i>Roebuckiella oncocarpa</i>	
	* <i>Sigesbeckia orientalis</i>	
	* <i>Sonchus oleraceus</i>	
	<i>Streptoglossa bubakii</i>	
<i>Streptoglossa decurrens</i>		
<i>Streptoglossa liatroides</i>		
Boraginaceae	<i>Heliotropium crispatum</i>	
	<i>Heliotropium diversifolium</i>	RE (103km E)
	<i>Heliotropium glanduliferum</i>	
	<i>Heliotropium inexplicitum</i>	RE (101km SE)
	<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	

Appendix: Inventory of Vascular Flora

Family	Taxon	Status (distance to nearest record)
Brassicaceae	<i>Stenopetalum pedicellare</i>	
Capparaceae	<i>Capparis lasiantha</i>	
	<i>Capparis mitchellii</i>	
	<i>Capparis spinosa</i> subsp. <i>nummularia</i>	
Caryophyllaceae	<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	RE (98km E)
Celastraceae	<i>Stackhousia</i> sp. Mid west coastal (D & B Bellairs 6561)	
Chenopodiaceae	<i>Atriplex bunburyana</i>	
	<i>Atriplex semilunaris</i>	
	<i>Dissocarpus paradoxus</i>	
	<i>Dysphania melanocarpa</i> forma <i>leucocarpa</i>	
	<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	RE (111km SE)
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	
	<i>Eremophea spinosa</i>	
	<i>Maireana planifolia</i>	
	<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	
	<i>Neobassia astrocarpa</i>	
	<i>Rhagodia baccata</i>	
	<i>Rhagodia eremaea</i>	
	<i>Salsola australis</i>	
	<i>Sclerolaena recurvicauspis</i>	
	<i>Sclerolaena uniflora</i>	
<i>Threlkeldia diffusa</i>		
Cleomaceae	<i>Arivela viscosa</i>	
Colchicaceae	<i>Wurmbea odorata</i>	
Commelinaceae	<i>Commelina ensifolia</i>	
Convolvulaceae	<i>Convolvulus clementii</i>	
	<i>Duperreya commixta</i>	
	<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	
	<i>Ipomoea costata</i>	
	<i>Ipomoea muelleri</i>	
	<i>Polymeria ambigua</i>	
Cucurbitaceae	<i>Cucumis variabilis</i>	
Cyperaceae	<i>Bulbostylis barbata</i>	
Dilleniaceae	<i>Hibbertia capensis</i>	
Euphorbiaceae	<i>Euphorbia australis</i> var. <i>subtomentosa</i>	RE (94km E)
	<i>Euphorbia biconvexa</i>	
	<i>Euphorbia boophthona</i>	RE (69km E)
	<i>Euphorbia sharkoensis</i>	
	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	
	<i>Euphorbia trigonosperma</i>	
Fabaceae	<i>Acacia alexandri</i>	P3
	<i>Acacia arida</i>	
	<i>Acacia bivenosa</i>	
	<i>Acacia colei</i> var. <i>colei</i>	RE (90km SE)
	<i>Acacia coriacea</i> subsp. <i>coriacea</i>	
	<i>Acacia gregorii</i>	
	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	
	<i>Acacia sericophylla</i>	

Appendix: Inventory of Vascular Flora

Family	Taxon	Status (distance to nearest record)
Fabaceae	<i>Acacia sibilans</i>	RE (134km S)
	<i>Acacia synchronicia</i>	
	<i>Acacia tetragonophylla</i>	
	* <i>Crotalaria incana</i> subsp. <i>incana</i>	
	<i>Crotalaria medicaginea</i> var. <i>neglecta</i>	
	<i>Cullen cinereum</i>	RE (74km SE)
	<i>Cullen pogonocarpum</i>	
	<i>Erythrina vespertilio</i>	
	<i>Glycine canescens</i>	
	<i>Indigofera colutea</i>	
	<i>Indigofera linifolia</i>	
	<i>Indigofera monophylla</i>	
	<i>Isotropis atropurpurea</i>	
	<i>Leptosema macrocarpum</i>	
	<i>Lotus cruentus</i>	
	<i>Rhynchosia minima</i>	
	<i>Senna artemisioides</i> subsp. <i>helmsii</i>	
	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	
	<i>Senna ferraria</i>	
	<i>Senna glutinosa</i> subsp. <i>xluerssenii</i>	RE (95km S)
	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	
	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	
	<i>Senna notabilis</i>	
	<i>Sesbania cannabina</i>	RE (58km SE)
	<i>Swainsona complanata</i>	
	<i>Swainsona formosa</i>	
	<i>Swainsona kingii</i>	
<i>Swainsona pterostylis</i>		
<i>Tephrosia rosea</i> var. <i>clementii</i>		
<i>Tephrosia supina</i>	RE (76km S)	
Frankeniaceae	<i>Frankenia pauciflora</i>	
Gentianaceae	<i>Schenkia australis</i>	
Geraniaceae	<i>Erodium cygnorum</i>	
Goodeniaceae	<i>Dampiera incana</i> var. <i>incana</i>	
	<i>Goodenia microptera</i>	
	<i>Goodenia tenuiloba</i>	
	<i>Lechenaultia subcymosa</i>	
	<i>Scaevola cunninghamii</i>	
	<i>Scaevola spicigera</i>	
	<i>Scaevola spinescens</i>	
	<i>Scaevola tomentosa</i>	
Gyrostemonaceae	<i>Gyrostemon ramulosus</i>	
Haloragaceae	<i>Haloragis gossei</i> var. <i>inflata</i>	
Lamiaceae	<i>Clerodendrum tomentosum</i>	
Lauraceae	<i>Cassytha aurea</i> var. <i>aurea</i>	
	<i>Cassytha filiformis</i>	RE (95km SE)
Loranthaceae	<i>Amyema preisii</i>	
Malvaceae	<i>Abutilon lepidum</i>	

Appendix: Inventory of Vascular Flora

Family	Taxon	Status (distance to nearest record)
Malvaceae	<i>Abutilon</i> sp. Dioicum (A.A. Mitchell PRP 1618)	
	<i>Brachychiton obtusilobus</i>	P4
	<i>Corchorus congener</i>	P3
	<i>Corchorus crozophorifolius</i>	
	<i>Gossypium robinsonii</i>	
	<i>Hannafordia quadrivalvis</i> subsp. <i>recurva</i>	
	<i>Hibiscus goldsworthii</i>	
	<i>Hibiscus</i> sp. Gardneri (A.L. Payne PRP 1435)	
	<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	RE (224km E)
	<i>Hibiscus sturtii</i> var. <i>platyklamys</i>	
	<i>Lawrenca densiflora</i>	RE (56km S)
	<i>Lawrenca viridigrisea</i>	
	* <i>Malvastrum americanum</i>	
	<i>Melhania oblongifolia</i>	
	<i>Sida calyxhymenia</i>	
	<i>Sida fibulifera</i>	
	<i>Sida kingii</i>	
	<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	
	<i>Sida</i> sp. Nov	SOI
	<i>Sida</i> sp. spiciform panicles (E. Leyland s.n. 14/8/90)	
<i>Triumfetta clementii</i>		
<i>Waltheria indica</i>		
Menispermaceae	<i>Tinospora esiangkara</i>	P2
Moraceae	<i>Ficus brachypoda</i>	
Myrtaceae	<i>Corymbia hamersleyana</i>	
	<i>Eucalyptus xerothermica</i>	
	<i>Melaleuca cardiophylla</i>	
Nyctaginaceae	<i>Boerhavia coccinea</i>	
Oleaceae	<i>Jasminum didymum</i> subsp. <i>lineare</i>	
Other	Herb sp.	
Phyllanthaceae	<i>Notoleptopus decaisnei</i>	RE (147km E)
	<i>Phyllanthus erwinii</i>	
	<i>Phyllanthus exilis</i>	RE (328km E)
	<i>Phyllanthus maderaspatensis</i>	
Pittosporaceae	<i>Pittosporum phillyreoides</i>	
Plantaginaceae	<i>Stemodia viscosa</i>	RE (154km SE)
Plumbaginaceae	<i>Muellerolimon salicorniaceum</i>	
	<i>Plumbago zeylanica</i>	
Poaceae	<i>Aristida contorta</i>	
	<i>Aristida holathera</i> var. <i>holathera</i>	
	<i>Aristida nitidula</i>	
	* <i>Cenchrus ciliaris</i>	
	* <i>Cenchrus setiger</i>	
	* <i>Chloris pumilio</i>	RE (77km E)
	<i>Chrysopogon fallax</i>	
	<i>Cymbopogon ambiguus</i>	
	<i>Dactyloctenium radulans</i>	RE (86km SE)
	<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	

Appendix: Inventory of Vascular Flora

Family	Taxon	Status (distance to nearest record)
Poaceae	<i>Digitaria ctenantha</i>	
	<i>Enneapogon caerulescens</i>	
	<i>Eragrostis cumingii</i>	
	<i>Eragrostis dielsii</i>	
	<i>Eragrostis eriopoda</i>	
	<i>Eragrostis falcata</i>	
	<i>Eragrostis leptocarpa</i>	
	<i>Eriachne aristidea</i>	
	<i>Eriachne mucronata</i>	
	<i>Eriachne obtusa</i>	
	<i>Eriachne tenuiculmis</i>	RE (220km E)
	<i>Eulalia aurea</i>	
	<i>Iseilema dolichotrichum</i>	
	<i>Iseilema ermaeum</i>	
	<i>Paraneurachne muelleri</i>	
	<i>Paspalidium basicladum</i>	RE (91km SE)
	<i>Paspalidium clementii</i>	
	<i>Paspalidium tabulatum</i>	
	<i>Schizachyrium fragile</i>	RE (329km E)
	<i>Setaria dielsii</i>	
	<i>*Setaria verticillata</i>	
	<i>Themeda triandra</i>	
	<i>Triodia epactia</i>	
	<i>Triodia glabra</i>	
	<i>Triodia wiseana</i>	
	<i>Triraphis mollis</i>	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	RE (94km E)	
Polygalaceae	<i>Polygala glaucifolia</i>	RE (94km S)
Polygonaceae	<i>*Rumex vesicarius</i>	RE (310km E)
Portulacaceae	<i>Calandrinia ptychosperma</i>	
	<i>Portulaca oleracea</i>	
Proteaceae	<i>Grevillea calcicola</i>	P3
	<i>Grevillea stenobotrya</i>	
	<i>Grevillea variifolia</i> var. <i>variifolia</i>	
	<i>Hakea chordophylla</i>	RE (199km E)
	<i>Hakea lorea</i> subsp. <i>lorea</i>	
Pteridaceae	<i>Cheilanthes austrotenuifolia</i>	
Rubiaceae	<i>Dolichocarpa crouchiana</i>	
Santalaceae	<i>Exocarpos aphyllus</i>	
	<i>Exocarpos sparteus</i>	
	<i>Santalum lanceolatum</i>	RE (154km SW)
Sapindaceae	<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>	
	<i>Diplopeltis eriocarpa</i>	
	<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>	
Scrophulariaceae	<i>Eremophila forrestii</i>	
	<i>Eremophila forrestii</i> subsp. <i>capensis</i>	P3
	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	
	<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	RE (140km E)

Appendix: Inventory of Vascular Flora

Family	Taxon	Status (distance to nearest record)
Scrophulariaceae	<i>Eremophila longifolia</i>	
Solanaceae	* <i>Datura leichhardtii</i> subsp. <i>leichhardtii</i>	
	<i>Nicotiana occidentalis</i>	
	<i>Solanum diversiflorum</i>	
	<i>Solanum horridum</i>	RE (163km E)
Solanaceae	<i>Solanum lasiophyllum</i>	
Surianaceae	<i>Stylobasium spathulatum</i>	
Thymelaeaceae	<i>Pimelea ammocharis</i>	
Urticaceae	<i>Parietaria cardiostegia</i>	
Violaceae	<i>Afrohybanthus aurantiacus</i>	
Zygophyllaceae	<i>Roepera aurantiaca</i>	
	<i>Roepera retivalvis</i>	
	<i>Tribulus cistoides</i>	
	<i>Tribulus hirsutus</i>	
	<i>Tribulus macrocarpus</i>	
	<i>Tribulus occidentalis</i>	
	<i>Tribulus suberosus</i>	

Appendix E

Threatened and Priority Flora Report Forms

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER01
Location MGA 50 203682 mE 7569820 mN

Described by: BD, JW
Date: 20/08/2021
Type: RELEVE



Landform: Plain
Slope: Flat
Rock Type: N/A
Soil Type: Clay, Loam, Sand
Soil Colour: Red

Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia tetragonophylla* tall sparse shrubland over *Cullen cinereum* mid open shrubland over **Cenchrus ciliaris* tall tussock grassland over *Rhynchosia minima*, *Erodium cygnorum* and *Swainsona pterostylis* low open hermland

Condition: Poor **Disturbance:** Litter, Weeds
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Acacia coriacea</i> subsp. <i>coriacea</i>	400	0.1	
<i>Acacia tetragonophylla</i>	300	9	
* <i>Bidens bipinnata</i>	40	0.1	
* <i>Cenchrus ciliaris</i>	75	35	
* <i>Cenchrus setiger</i>	70	0.1	
<i>Convolvulus clementii</i>	40	0.1	
<i>Corymbia hamersleyana</i>	300	2	
<i>Cucumis variabilis</i>	30	0.1	
<i>Cullen cinereum</i>	150	11	
<i>Eragrostis leptocarpa</i>	30	0.1	
<i>Erodium cygnorum</i>	30	2	
<i>Euphorbia biconvexa</i>	35	0.1	
<i>Glycine canescens</i>	150	0.1	
<i>Haloragis gossei</i> var. <i>inflata</i>	30	0.1	
<i>Ipomoea costata</i>	300	2	
<i>Ipomoea muelleri</i>	10	0.1	
<i>Lotus cruentus</i>	20	0.1	
* <i>Malvastrum americanum</i>	50	0.1	
<i>Nicotiana occidentalis</i>	30	0.1	
<i>Ptilotus xerophilus</i>	70	0.1	
<i>Rhynchosia minima</i>	160	5	
<i>Roebuckiella oncocarpa</i>	15	0.1	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	120	0.1	
* <i>Sigesbeckia orientalis</i>	120	0.1	
<i>Solanum lasiophyllum</i>	10	0.1	
<i>Swainsona pterostylis</i>	30	2	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	200	0.1	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER02
Location MGA 50 203539 mE 7569487 mN

Described by: BD, JW
Date: 21/08/2021
Type: RELEVE

Landform: Plain
Slope: Flat
Rock Type: Calcrete, Quartz
Soil Type: Clay, Loam
Soil Colour: Brown, Red



Vegetation: *Acacia synchronicia* tall open shrubland **Cenchrus ciliaris* low closed tussock grassland over *Ptilotis xerophilus* and *Salsola australis* low sparse herbland

Condition: Poor **Disturbance:** Weeds
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Acacia synchronicia</i>	450	12	
* <i>Aerva javanica</i>	20	0.1	
<i>Calotis plumulifera</i>	20	0.1	
* <i>Cenchrus ciliaris</i>	30	80	
* <i>Chloris pumilio</i>	60	0.1	
<i>Erodium cygnorum</i>	20	0.1	
<i>Euphorbia biconvexa</i>	10	0.1	
<i>Euphorbia boophthona</i>	60	0.1	
<i>Goodenia tenuiloba</i>	30	0.1	
<i>Indigofera colutea</i>	10	0.1	
<i>Ptilotis helipteroides</i>	40	0.1	
<i>Ptilotis xerophilus</i>	50	1	
<i>Rhagodia baccata</i>	60	0.1	
<i>Salsola australis</i>	40	0.5	
<i>Setaria dielsii</i>	40	0.1	
* <i>Setaria verticillata</i>	30	0.1	
<i>Solanum lasiophyllum</i>	15	0.1	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER03
Location MGA 50 203213 mE 7569557 mN

Described by: BD, JW
Date: 21/08/2021
Type: RELEVE

Landform: Rise
Slope: Gentle
Rock Type: Calcrete, Limestone
Soil Type: Clay, Loam
Soil Colour: Brown, Red



Vegetation: *Corymbia hamersleyana* low open woodland over *Senna glutinosa* subsp. *pruinosa* and *Acacia bivenosa* mid sparse shrubland over *Ptilotus obovatus* var. *obovatus* and *Corchorus crozophorifolius* low sparse shrubland over *Triodia epactia* low open hummock grassland over **Cenchrus ciliaris* low open tussock grassland

Condition: Very Good **Disturbance:** Weeds
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Abutilon lepidum</i>	40	0.1	
<i>Acacia bivenosa</i>	150	0.5	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	10	0.1	
<i>Afrohybanthus aurantiacus</i>	10	0.1	
<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>	150	0.1	
<i>Amyema preisii</i>	100	0.1	
* <i>Bidens bipinnata</i>	50	0.1	
<i>Calandrinia ptychosperma</i>	5	0.1	
* <i>Cenchrus ciliaris</i>	30	15	
<i>Corchorus crozophorifolius</i>	100	1	
<i>Corymbia hamersleyana</i>	450	3	
<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>	10	0.1	
<i>Dysphania melanocarpa</i> forma <i>leucocarpa</i>	10	0.1	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	20	0.1	
<i>Enneapogon caerulescens</i>	25	0.1	
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	15	0.1	
<i>Eremophila latrobei</i> subsp. <i>latrobei</i>	20	0.1	P3
<i>Erodium cygnorum</i>	5	0.1	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	15	0.1	
<i>Goodenia microptera</i>	30	0.1	
<i>Gossypium robinsonii</i>	250	0.1	
<i>Hakea lorea</i> subsp. <i>lorea</i>	150	0.1	
<i>Indigofera colutea</i>	10	0.1	
<i>Indigofera monophylla</i>	30	0.1	
<i>Ipomoea costata</i>	20	0.1	
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	50	0.1	
<i>Melhania oblongifolia</i>	10	0.1	
<i>Nicotiana occidentalis</i>	20	0.1	
<i>Paspalidium clementii</i>	20	0.1	
<i>Phyllanthus maderaspatensis</i>	20	0.1	
<i>Portulaca oleracea</i>	5	0.1	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	80	5	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	130	0.1	
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	180	3	
<i>Solanum diversiflorum</i>	20	0.1	
<i>Solanum lasiophyllum</i>	20	0.1	
* <i>Sonchus oleraceus</i>	50	0.1	
<i>Stenopetalum pedicellare</i>	10	0.1	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	60	0.1	
<i>Triodia epactia</i>	30	15	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER04
Location MGA 50 202965 mE 7570063 mN

Described by: BD, JW
Date: 21/08/2021
Type: RELEVE



Landform: Plain
Slope: Flat
Rock Type: Limestone
Soil Type: Clay, Loam, Sand
Soil Colour: Brown, Red

Vegetation: *Corymbia hamersleyana* low open woodland over *Triodia epactia* low sparse hummock grassland over
**Cenchrus ciliaris* low tussock grassland over *Swainsona pterostylis* low open herbland

Condition: Poor **Disturbance:** Litter, Weeds
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Acacia bivenosa</i>	100	0.1	
<i>Acacia coleii</i> var. <i>coleii</i>	160	0.1	
<i>Calandrinia ptychosperma</i>	5	0.1	
* <i>Cenchrus ciliaris</i>	50	40	
<i>Convolvulus clementii</i>	10	0.1	
<i>Corymbia hamersleyana</i>	550	1	
* <i>Crotalaria incana</i> subsp. <i>incana</i>	160	0.1	
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>	40	0.1	
<i>Cullen cinereum</i>	60	0.1	
<i>Cullen pogonocarpum</i>	60	0.1	
* <i>Datura leichhardtii</i> subsp. <i>leichhardtii</i>	50	0.1	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	20	0.1	
<i>Eragrostis dielsii</i>	5	0.1	
<i>Erodium cygnorum</i>	10	0.1	
<i>Glycine canescens</i>	30	0.1	
<i>Goodenia microptera</i>	40	0.1	
<i>Hakea lorea</i> subsp. <i>lorea</i>	250	0.1	
<i>Haloragis gossei</i> var. <i>inflata</i>	30	0.1	
<i>Heliotropium crispatum</i>	30	0.1	
<i>Heliotropium diversifolium</i>	20	0.1	
<i>Heliotropium inexplicitum</i>	10	0.1	
<i>Indigofera colutea</i>	20	0.1	
<i>Indigofera linifolia</i>	20	0.1	
<i>Ipomoea muelleri</i>	10	0.1	
* <i>Malvastrum americanum</i>	100	0.1	
<i>Notoleptopus decaisnei</i>	10	0.1	
<i>Polygala glaucifolia</i>	5	0.1	
<i>Ptilotus exaltatus</i>	100	0.1	
<i>Ptilotus helipteroides</i>	30	0.1	
<i>Ptilotus polystachyus</i>	40	0.1	
<i>Ptilotus xerophilus</i>	50	0.1	
<i>Rhynchosia minima</i>	10	0.1	
<i>Salsola australis</i>	50	0.1	
<i>Sida fibulifera</i>	10	0.1	
<i>Sida kingii</i>	50	0.1	
<i>Solanum lasiophyllum</i>	60	0.1	
<i>Streptoglossa bubakii</i>	70	0.1	
<i>Swainsona pterostylis</i>	50	15	
<i>Tribulus hirsutus</i>	5	0.1	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	100	0.1	
<i>Triodia epactia</i>	30	2	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER05
Location MGA 50 202998 mE 7569277 mN

Described by: BD, JW
Date: 21/08/2021
Type: RELEVE



Landform: Undulating plain
Slope: Flat
Rock Type: Limestone
Soil Type: Clay, Loam
Soil Colour: Light Brown, Red

Vegetation: *Acacia synchronicia* tall sparse shrubland over *Acacia bivenosa* and *Eremophila longifolia* mid sparse shrubland over *Triodia epactia* low open hummock grassland over **Cenchrus ciliaris* low sparse tussock grassland over *Swainsona pterostylis* low sparse herbland

Condition: Good **Disturbance:** Weeds
Fire Age: >10 years

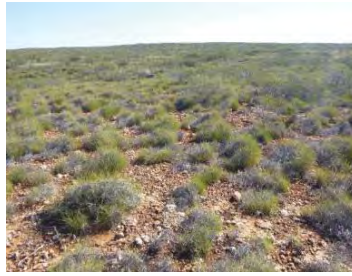
SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Abutilon lepidum</i>	60	0.1	
<i>Acacia bivenosa</i>	200	6	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	200	0.1	
<i>Acacia synchronicia</i>	300	8	
* <i>Cenchrus ciliaris</i>	20	9	
<i>Chrysopogon fallax</i>	90	0.1	
<i>Convolvulus clementii</i>	150	0.1	
<i>Corchorus congener</i>	15	0.1	P3
<i>Eragrostis dielsii</i>	5	0.1	
<i>Eremophila longifolia</i>	180	0.5	
<i>Erodium cygnorum</i>	10	0.1	
<i>Euphorbia boophthona</i>	30	0.1	
<i>Euphorbia sharkoensis</i>	5	0.1	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	15	0.1	
<i>Glycine canescens</i>	20	0.1	
<i>Goodenia microptera</i>	20	0.1	
<i>Haloragis gossei</i> var. <i>inflata</i>	50	0.1	
<i>Heliotropium crispatum</i>	10	0.1	
<i>Hibiscus sturtii</i> var. <i>grandiflorus</i>	20	0.1	
<i>Indigofera colutea</i>	10	0.1	
<i>Indigofera monophylla</i>	20	0.1	
<i>Ipomoea costata</i>	180	0.1	
<i>Nicotiana occidentalis</i>	70	0.1	
<i>Paspalidium clementii</i>	20	0.1	
<i>Phyllanthus maderaspatensis</i>	20	0.1	
<i>Pterocaulon sphacelatum</i>	15	0.1	
<i>Ptilotus helipteroides</i>	30	0.1	
<i>Ptilotus xerophilus</i>	40	0.1	
<i>Rhynchosia minima</i>	10	0.1	
<i>Roebuckiella oncocarpa</i>	10	0.1	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	110	0.1	
<i>Solanum diversiflorum</i>	10	0.1	
<i>Solanum lasiophyllum</i>	30	0.1	
<i>Swainsona pterostylis</i>	40	5	
<i>Tribulus hirsutus</i>	5	0.1	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	180	0.1	
<i>Triodia epactia</i>	40	20	
<i>Triraphis mollis</i>	50	0.1	
<i>Waltheria indica</i>	15	0.1	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER06
Location MGA 50 202181 mE 7570072 mN

Described by: BD, JW
Date: 21/08/2021
Type: RELEVE



Landform: Stony rise
Slope: Gentle
Rock Type: Calcrete, mudstone
Soil Type: Clay, Loam, Sand
Soil Colour: Brown, Red

Vegetation: *Melaleuca cardiophylla* mid sparse shrubland over *Triodia glabra* low open hummock grassland

Condition: Excellent **Disturbance:** None
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Dolichocarpa crouchiana</i>	15	0.1	
<i>Euphorbia biconvexa</i>	10	0.1	
<i>Goodenia microptera</i>	40	0.1	
<i>Haloragis gossei</i> var. <i>inflata</i>	20	0.1	
<i>Hibiscus</i> sp. <i>Gardneri</i> (A.L. Payne PRP 1435)	15	0.1	
<i>Leptosema macrocarpum</i>	30	0.1	
<i>Melaleuca cardiophylla</i>	160	9	
<i>Polygala glaucifolia</i>	5	0.1	
<i>Ptilotus xerophilus</i>	20	0.1	
<i>Roepera retivalvis</i>	20	0.1	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	50	0.1	
<i>Solanum diversiflorum</i>	10	0.1	
<i>Triodia glabra</i>	30	15	
<i>Triodia wiseana</i>	40	0.1	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER07
Location MGA 50 200994 mE 7570380 mN

Described by: BD, JW
Date: 22/08/2021
Type: RELEVE



Landform: Hilltop
Slope: Gentle
Rock Type: Calcrete, Limestone
Soil Type: Clay, Loam, Sand
Soil Colour: Brown, Red

Vegetation: *Melaleuca cardiophylla* mid sparse shrubland over *Triodia wisena* low hummock grassland over *Goodenia microptera* low sparse herbland

Condition: Excellent **Disturbance:** None
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Abutilon lepidum</i>	15	0.1	
<i>Acacia bivenosa</i>	10	0.1	
<i>Acacia tetragonophylla</i>	30	0.1	
<i>Dolichocarpa crouchiana</i>	5	0.1	
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	70	0.1	
<i>Goodenia microptera</i>	30	1	
<i>Haloragis gossei</i> var. <i>inflata</i>	10	0.1	
<i>Heliotropium crispatum</i>	5	0.1	
<i>Indigofera monophylla</i>	15	0.1	
<i>Leptosema macrocarpum</i>	30	0.1	
<i>Melaleuca cardiophylla</i>	120	8	
<i>Paspalidium clementii</i>	5	0.1	
<i>Phyllanthus exilis</i>	10	0.1	
<i>Polygala glaucifolia</i>	5	0.1	
<i>Roepera retivalvis</i>	15	0.1	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	5	0.1	
<i>Solanum diversiflorum</i>	10	0.1	
<i>Stackhousia</i> sp. <i>Mid west coastal (D & B Bellairs 656)</i>	20	0.1	
<i>Triodia glabra</i>	40	0.1	
<i>Triodia wiseana</i>	40	35	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER08
Location MGA 50 200706 mE 7570567 mN

Described by: BD, JW
Date: 22/08/2021
Type: RELEVE



Landform: Drainage line
Slope: Gentle
Rock Type: Calcrete, Limestone
Soil Type: Clay, Loam, Sand
Soil Colour: Brown, Red

Vegetation: *Corymbia hamersleyana* low open woodland over *Acacia arida* tall shrubland over *Gossypium robinsonii* and *Dodonaea viscosa* subsp. *mucronata* mid sparse shrubland over *Senna artemisioides* subsp. *oligophylla* and *Tephrosia rosea* var. *clementii* low sparse shrubland over *Triodia epactia* low open hummock grassland

Condition: Very Good **Disturbance:** Weeds
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Acacia alexandri</i>	350	0.1	P3
<i>Acacia arida</i>	300	35	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	250	0.1	
<i>Acacia tetragonophylla</i>	120	0.1	
<i>Afrohybanthus aurantiacus</i>	10	0.1	
<i>Arivela viscosa</i>	20	0.1	
* <i>Bidens bipinnata</i>	40	0.1	
<i>Corchorus crozophorifolius</i>	70	0.1	
<i>Corymbia hamersleyana</i>	450	2	
<i>Cymbopogon ambiguus</i>	70	0.1	
<i>Dicladanthera forrestii</i>	20	0.1	
<i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>	10	0.1	
<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>	200	0.5	
<i>Dolichocarpa crouchiana</i>	10	0.1	
<i>Goodenia microptera</i>	20	0.1	
<i>Gossypium robinsonii</i>	200	1	
<i>Indigofera monophylla</i>	10	0.1	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	30	0.1	
<i>Melaleuca cardiophylla</i>	160	0.1	
<i>Paspalidium tabulatum</i>	30	0.1	
<i>Phyllanthus exilis</i>	10	0.1	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	50	1	
* <i>Sigesbeckia orientalis</i>	40	0.1	
<i>Stackhousia</i> sp. Mid west coastal (D & B Bellairs 656)	10	0.1	
<i>Tephrosia rosea</i> var. <i>clementii</i>	40	0.5	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	50	0.1	
<i>Triodia epactia</i>	40	25	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER09
Location MGA 50 199993 mE 7569742 mN

Described by: BD, BE
Date: 24/08/2021
Type: RELEVE



Landform: Drainage line
Slope: Gentle
Rock Type: Limestone
Soil Type: Clay, Loam, Sand
Soil Colour: Brown, Red

Vegetation: *Eucalyptus xerothermica* low woodland over *Acacia arida*, *Dodonaea viscosa* var. *mucronata* and *Acacia alexandri* tall open shrubland over *Jasminum didymum* subsp. *lineare*, *Senna ferraria* and *Trichodesma zeylanicum* var. *zeylanicum* mid sparse shrubland over *Triodia epactia* low sparse hummock grassland

Condition: Very Good **Disturbance:** Weeds
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Abutilon lepidum</i>	10	0.1	
<i>Acacia alexandri</i>	350	2	P3
<i>Acacia arida</i>	240	4	
<i>Acacia bivenosa</i>	150	0.1	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	450	2	
<i>Acacia sericophylla</i>	250	0.1	
<i>Acacia tetragonophylla</i>	200	0.1	
<i>Acanthocarpus preissii</i>	130	0.1	
<i>Afrohybanthus aurantiacus</i>	10	0.1	
<i>Aristida nitidula</i>	40	0.1	
* <i>Bidens bipinnata</i>	50	0.1	
<i>Capparis mitchellii</i>	20	0.1	
<i>Cheilanthes austrotenuifolia</i>	10	0.1	
<i>Corchorus crozophorifolius</i>	20	0.1	
<i>Cucumis variabilis</i>	10	0.1	
<i>Cymbopogon ambiguus</i>	70	0.1	
<i>Dicladanthera forrestii</i>	10	0.1	
<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>	300	8	
<i>Dolichocarpa crouchiana</i>	20	0.1	
<i>Duperreya commixta</i>	220	0.1	
<i>Eucalyptus xerothermica</i>	400	12	
<i>Euphorbia sharkoensis</i>	5	0.1	
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	10	0.1	
<i>Glycine canescens</i>	180	0.1	
<i>Goodenia tenuiloba</i>	40	0.1	
<i>Gossypium robinsonii</i>	10	0.1	
<i>Grevillea calcicola</i>	30	0.1	P3
<i>Haloragis gossei</i> var. <i>inflata</i>	20	0.1	
<i>Harmiera kempeana</i> subsp. <i>rhadinophylla</i>	10	0.1	P2
<i>Hibbertia capensis</i>	50	0.1	
<i>Indigofera monophylla</i>	20	0.1	
<i>Ipomoea costata</i>	250	0.1	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	150	1	
* <i>Malvastrum americanum</i>	20	0.1	
<i>Melaleuca cardiophylla</i>	150	0.1	
<i>Melhania oblongifolia</i>	30	0.1	
<i>Nicotiana occidentalis</i>	40	0.1	
<i>Olearia</i> sp. <i>Kennedy Range</i> (G.Byrne 66)	250	0.1	
<i>Paspalidium basicladum</i>	20	0.1	
<i>Peripleura arida</i>	40	0.1	
<i>Phyllanthus maderaspatensis</i>	30	0.1	
<i>Pluchea dentex</i>	10	0.1	
<i>Polygala glaucifolia</i>	5	0.1	
<i>Rhynchosia minima</i>	10	0.1	
* <i>Rumex vesicarius</i>	30	0.1	
<i>Senna ferraria</i>	150	0.1	

Taxon	Height (cm)	Cover (%)	Notes
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	10	0.1	
* <i>Sigesbeckia orientalis</i>	50	0.1	
<i>Solanum lasiophyllum</i>	40	0.1	
* <i>Sonchus oleraceus</i>	30	0.1	
<i>Stemodia viscosa</i>	10	0.1	
<i>Tinospora esiangkara</i>	5	0.1	P2
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	120	1	
<i>Triodia epactia</i>	40	5	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER10
Location MGA 50 199782 mE 7570015 mN

Described by: BD, BE
Date: 24/08/2021
Type: RELEVE



Landform: Hilltop
Slope: Gentle
Rock Type: Calcrete, Limestone
Soil Type: Clay, Loam, Sand
Soil Colour: Brown, Red

Vegetation: *Melaleuca cardiophylla*, *Acacia arida* and *Acacia pyrifolia* var. *pyrifolia* mid sparse shrubland over *Triodia wiseana* low hummock grassland over *Goodenia tenuiloba* low isolated herbs

Condition: Very Good **Disturbance:** Litter
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Acacia arida</i>	140	2	
<i>Acacia bivenosa</i>	190	0.1	
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	180	1	
<i>Acacia tetragonophylla</i>	30	0.1	
<i>Corymbia hamersleyana</i>	200	0.1	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	20	0.1	
<i>Dolichocarpa crouchiana</i>	15	0.1	
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	70	0.1	P3
<i>Euphorbia boophthona</i>	10	0.1	
<i>Euphorbia shakoensis</i>	5	0.1	
<i>Goodenia tenuiloba</i>	40	0.5	
<i>Haloragis gossei</i> var. <i>inflata</i>	20	0.1	
Herb sp.	10	0.1	
<i>Indigofera monophylla</i>	10	0.1	
<i>Leptosema macrocarpum</i>	40	0.1	
<i>Melaleuca cardiophylla</i>	140	3	
<i>Paspalidium clementii</i>	30	0.1	
<i>Phyllanthus erwinii</i>	5	0.1	
<i>Podolepis aristata</i> subsp. <i>aristata</i>	20	0.1	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	50	0.1	
<i>Solanum diversiflorum</i>	20	0.1	
<i>Solanum lasiophyllum</i>	40	0.1	
<i>Stackhousia</i> sp. Mid west coastal (D & B Bellairs 656)	15	0.1	
<i>Tribulus suberosus</i>	20	0.1	
<i>Triodia wiseana</i>	40	35	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER11
Location MGA 50 203612 mE 7582515 mN

Described by: BD, BE
Date: 25/08/2021
Type: RELEVE

Landform: Sandy plain
Slope: Flat
Rock Type: Recemented limestone
Soil Type: Sand
Soil Colour: Red



Vegetation: *Acacia tetragonophylla*, *Gyrostemon ramulosus* and *Exocarpos aphyllus* mid sparse shrubland over *Cynanchum viminalis* subsp. *australe* low sparse shrubland over *Triodia epactia* and *Triodia glabra* low open hummock grassland over **Cenchrus ciliaris* and *Eriachne mucronata* low sparse tussock grassland over *Goodenia tenuiloba* and *Ptilotus helipteroides* low sparse herbland

Condition: Good **Disturbance:** Weeds
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618)	40	0.1	
<i>Acacia bivenosa</i>	30	0.1	
<i>Acacia sericophylla</i>	200	0.1	
<i>Acacia tetragonophylla</i>	160	2	
<i>Acanthocarpus verticillatus</i>	60	0.1	
<i>Afrohybanthus aurantiacus</i>	30	0.1	
<i>Aristida contorta</i>	15	0.1	
<i>Aristida holathera</i> var. <i>holathera</i>	30	0.1	
<i>Arivela viscosa</i>	30	0.1	
* <i>Bidens bipinnata</i>	40	0.1	
<i>Bulbostylis barbata</i>	15	0.1	
* <i>Cenchrus ciliaris</i>	40	6	
<i>Chrysopogon fallax</i>	70	0.1	
<i>Corchorus congener</i>	20	0.1	P3
<i>Cucumis variabilis</i>	140	0.1	
<i>Cynanchum viminalis</i> subsp. <i>australe</i>	90	1	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	20	0.1	
<i>Dolichocarpa crouchiana</i>	10	0.1	
<i>Duperreya commixta</i>	100	0.1	
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>	20	0.1	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	100	0.1	
<i>Enneapogon caeruleus</i>	15	0.1	
<i>Eragrostis cumingii</i>	8	0.1	
<i>Eragrostis eriopoda</i>	30	0.1	
<i>Eremophila forrestii</i>	120	0.1	
<i>Eriachne aristidea</i>	60	0.1	
<i>Eriachne mucronata</i>	40	1	
<i>Erodium cygnorum</i>	10	0.1	
<i>Euphorbia boophthona</i>	20	0.1	
<i>Euphorbia sharkoensis</i>	10	0.1	
<i>Euphorbia trigonosperma</i>	10	0.1	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	10	0.1	
<i>Exocarpos aphyllus</i>	110	1	
<i>Goodenia tenuiloba</i>	30	2	
<i>Grevillea variifolia</i> var. <i>variifolia</i>	160	0.1	
<i>Gyrostemon ramulosus</i>	170	1	
<i>Hakea chordophylla</i>	230	0.1	
<i>Haloragis gossei</i> var. <i>inflata</i>	20	0.1	
<i>Hannafordia quadrivalvis</i> subsp. <i>recurva</i>	60	0.1	
<i>Heliotropium crispatum</i>	20	0.1	
<i>Heliotropium glanduliferum</i>	20	0.1	
<i>Heliotropium inexplicitum</i>	15	0.1	
<i>Hibiscus sturtii</i> var. <i>platyklamys</i>	30	0.1	
<i>Indigofera colutea</i>	10	0.1	
<i>Indigofera linifolia</i>	10	0.1	
<i>Indigofera monophylla</i>	20	0.1	

Taxon	Height (cm)	Cover (%)	Notes
<i>Iseilema dolichotrichum</i>	10	0.1	
<i>Isotropis atropurpurea</i>	50	0.1	
<i>Jasminum didymum</i> subsp. <i>lineare</i>	50	0.1	
<i>Melaleuca cardiophylla</i>	200	0.1	
<i>Melhania oblongifolia</i>	20	0.1	
<i>Nicotiana occidentalis</i>	30	0.1	
<i>Paraneurachne muelleri</i>	30	0.1	
<i>Paspalidium clementii</i>	10	0.1	
<i>Phyllanthus erwinii</i>	5	0.1	
<i>Podolepis aristata</i> subsp. <i>aristata</i>	10	0.1	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	10	0.1	
<i>Polygala glaucifolia</i>	10	0.1	
<i>Portulaca oleracea</i>	8	0.1	
<i>Ptilotus clementii</i>	80	0.1	
<i>Ptilotus exaltatus</i>	40	0.1	
<i>Ptilotus helipteroides</i>	15	0.5	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	10	0.1	
<i>Ptilotus polystachyus</i>	100	0.1	
<i>Scaevola cunninghamii</i>	50	0.1	
<i>Scaevola tomentosa</i>	120	0.1	
<i>Schizachyrium fragile</i>	40	0.1	
<i>Senna artemisioides</i> subsp. <i>helmsii</i>	100	0.1	
<i>Senna notabilis</i>	15	0.1	
<i>Sida</i> sp. <i>spiciform panicles</i> (E. Leyland s.n. 14/8/90)	140	0.1	
<i>Solanum diversiflorum</i>	10	0.1	
<i>Solanum horridum</i>	5	0.1	
<i>Solanum lasiophyllum</i>	40	0.1	
<i>Stylobasium spathulatum</i>	150	0.1	
<i>Swainsona kingii</i>	5	0.1	
<i>Thysanotus ?exfimbriatus</i>	90	0.1	
<i>Trianthema pilosum</i>	10	0.1	
<i>Tribulus hirsutus</i>	10	0.1	
<i>Tribulus macrocarpus</i>	5	0.1	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	110	0.1	
<i>Triodia epactia</i>	40	15	
<i>Triodia glabra</i>	40	10	
<i>Triraphis mollis</i>	30	0.1	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	10	0.1	

FLORA SITE SHEET

Project Name 4766 Horizon Exmouth
Site: HER12
Location MGA 50 205938 mE 7581873 mN

Described by: BD, BE
Date: 25/08/2021
Type: RELEVE



Landform: Saline plain
Slope: Flat
Rock Type: Carbonate sediments
Soil Type: Clay, Loam
Soil Colour: Light Brown

Vegetation: *Frankenia pauciflora* low sparse shrubland over *Atriplex bunburyana* low open chenopod shrubland over *Cenchrus ciliaris* low sparse tussock grassland over *Surreya diandra* and *Sclerolaena recurvicauspis* low sparse herbland

Condition: Good **Disturbance:** Litter, Weeds
Fire Age: >10 years

SPECIES LIST

Taxon	Height (cm)	Cover (%)	Notes
<i>Acacia bivenosa</i>	150	0.1	
<i>Atriplex bunburyana</i>	50	14	
<i>Atriplex semilunaris</i>	40	0.1	
* <i>Cenchrus ciliaris</i>	30	5	
<i>Dissocarpus paradoxus</i>	10	0.1	
<i>Eragrostis falcata</i>	30	0.1	
<i>Euphorbia sharkoensis</i>	10	0.1	
<i>Frankenia pauciflora</i>	20	9	
<i>Lawrenia viridigrisea</i>	60	0.1	
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	20	0.1	
<i>Muellerolimon salicorniaceum</i>	20	0.1	
<i>Portulaca oleracea</i>	10	0.1	
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	50	0.1	
<i>Rhagodia eremaea</i>	30	0.1	
<i>Scaevola spinescens</i>	100	0.1	
<i>Sclerolaena recurvicauspis</i>	15	1	
<i>Sclerolaena uniflora</i>	10	0.1	
<i>Surreya diandra</i>	15	5	

Appendix F Threaten and Priority Flora Report Forms



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under Standard Report Forms

TAXON: <u>Acacia alexandri</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED:				
<u>AGD84 / AMG84</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>WGS84</u>	Lat / Northing: <u>-21.943408389999998</u>	No. satellites: _____		Map used: _____
<u>Unknown</u>	Long / Easting: <u>114.0939599</u>	Boundary polygon captured <input type="checkbox"/>		Map Scale: _____
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m²): _____
EFFORT: <u>Time spent surveying (minutes):</u> _____	No. of minutes spent / 100 m²: _____		
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
<u>Alive</u>			<u>2</u>
<u>Dead</u>			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m²): _____
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehisced fruit</u>
			Flower Percentage in flower: % _____

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill <input checked="" type="checkbox"/>	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
 Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under *Standard Report Forms*

TAXON: <u>Acacia alexandri</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): Exmouth				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94	DecDegrees <input checked="" type="checkbox"/>	DegMinSec	UTMs <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS
AGD84 / AMG84	Lat / Northing: <u>-21.943652790000002</u>		No. satellites:	Map used:
WGS84	Long / Easting: <u>114.09800769</u>		Boundary polygon	Map Scale:
Unknown	ZONE: _____		captured	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT:	Edge survey	Partial survey <input checked="" type="checkbox"/>	Full survey	Area observed (m ²): _____															
EFFORT:	Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____																
POP'N COUNT ACCURACY:	Actual <input checked="" type="checkbox"/>	Extrapolation	Estimate	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																			
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps	Clonal stems																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td>4</td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				4	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				4															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud	Flower															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill <input checked="" type="checkbox"/>	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

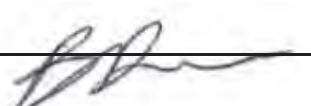
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
 Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

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Threatened and Priority Flora Report Form

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TAXON: <u>Acacia alexandri</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>		Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec Lat / Northing: <u>-21.94704760000001</u> Long / Easting: <u>114.09824620000001</u> ZONE: _____	METHOD USED: UTMs <input checked="" type="checkbox"/> GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____
LAND TENURE:		
Nature reserve National park Conservation park	Timber reserve State forest Water reserve	Private property Pastoral lease UCL <input checked="" type="checkbox"/>
	Rail reserve MRWA road reserve SLK/Pole to	Shire road reserve Other Crown reserve Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____
EFFORT: _____	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive			2
Dead			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m ²): _____
REPRODUCTIVE STATE:	Clonal Immature fruit	Vegetative Fruit	Flowerbud Dehisced fruit
			Flower Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill <input checked="" type="checkbox"/>	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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 Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under Standard Report Forms

TAXON: <u>Acacia alexandri</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>26/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED:				
<u>AGD84 / AMG84</u>	<u>DecDegrees <input checked="" type="checkbox"/></u>	<u>DegMinSec</u>	<u>UTMs <input checked="" type="checkbox"/></u>	<u>GPS <input checked="" type="checkbox"/></u> <u>Differential GPS</u> <u>Map</u>
<u>WGS84</u>	Lat / Northing: <u>-21.9510164</u>	<u>Long / Easting: <u>114.0942007</u></u>		<u>No. satellites:</u> _____ <u>Map used:</u> _____
<u>Unknown</u>	ZONE: _____	<u>Boundary polygon captured</u>		<u>Map Scale:</u> _____
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u> <u>Partial survey <input checked="" type="checkbox"/></u> <u>Full survey</u>	Area observed (m²): _____															
EFFORT: <u>Time spent surveying (minutes):</u> _____	No. of minutes spent / 100 m²: _____															
POP'N COUNT ACCURACY: <u>Actual <input checked="" type="checkbox"/></u> <u>Extrapolation</u> <u>Estimate</u>	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																
WHAT COUNTED: <u>Plants <input checked="" type="checkbox"/></u> <u>Clumps</u> <u>Clonal stems</u>																
TOTAL POP'N STRUCTURE:																
	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Mature:	Juveniles:	Seedlings:	Totals:	Alive				3	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:												
Alive				3												
Dead																
QUADRATS PRESENT:	Area of pop (m²): _____															
	Note: Pls record count as numbers (not percentages) for database.															
Summary Quad. Totals: Alive	Total area of quadrats (m²): _____															
REPRODUCTIVE STATE:																
<input type="checkbox"/> Clonal	<input type="checkbox"/> Vegetative															
<input type="checkbox"/> Immature fruit	<input type="checkbox"/> Fruit															
<input type="checkbox"/> Flowerbud	<input type="checkbox"/> Flower															
<input type="checkbox"/> Dehisced fruit	<input type="checkbox"/> Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill <input checked="" type="checkbox"/>	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
2. Open shrubland (Hibbertia sp., Acacia spp.);
3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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Threatened and Priority Flora Report Form

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TAXON: <u>Acacia alexandri</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>26/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED:				
<u>AGD84 / AMG84</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>WGS84</u>	Lat / Northing: <u>-21.9492887</u>	Long / Easting: <u>114.1083404</u>		<u>No. satellites:</u> _____ <u>Map used:</u> _____
<u>Unknown</u>	ZONE: _____	<u>Boundary polygon captured</u>		<u>Map Scale:</u> _____
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
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AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m²): _____
EFFORT: <u>Time spent surveying (minutes):</u> _____	No. of minutes spent / 100 m²: _____		
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
<u>Alive</u>			<u>7</u>
<u>Dead</u>			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m²): _____
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehisced fruit</u>
			Flower Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
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Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
 Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under *Standard Report Forms*

TAXON: <u>Acanthocarpus rupestris</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>22/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): Exmouth					Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____			
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec UTM's <input checked="" type="checkbox"/> Lat / Northing: <u>-21.94762514</u> Long / Easting: <u>114.10538529999999</u> ZONE: _____		METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____		
LAND TENURE:					
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve	
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve	
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____	

AREA ASSESSMENT: Edge survey	Partial survey <input checked="" type="checkbox"/>	Full survey	Area observed (m ²): _____
EFFORT: Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____		
POP'N COUNT ACCURACY: Actual <input checked="" type="checkbox"/>	Extrapolation	Estimate	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: Plants <input checked="" type="checkbox"/>	Clumps	Clonal stems	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive			5
Dead			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m ²): _____
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud
	Immature fruit	Fruit	Dehisced fruit
			Flower Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill <input checked="" type="checkbox"/>	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Low isolated trees (C. hamersleyana)

2. Tall open shrubland (A. alexandria, A. tetragonophylla, A. bivenosa)

3. Low sparse shrubland (S. artemoides subsp. oligophylla, T. rosea var. clementii, S. ferraria)

4. Low sparse hummock grassland (T. epactia)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: _____

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Bridget Duncan Role: Ecologist Signed: _____ Date: 22 / 12 / 2021

Record:

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Threatened and Priority Flora Report Form

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TAXON: <u>Brachychiton obtusilobus</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P4</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>		Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec Lat / Northing: <u>-21.9437672</u> Long / Easting: <u>114.0930879</u> ZONE: _____	METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS No. satellites: _____ Boundary polygon captured Map used: _____ Map Scale: _____
LAND TENURE:		
Nature reserve	Timber reserve	Private property
National park	State forest	Pastoral lease
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>
		Rail reserve
		MRWA road reserve
		SLK/Pole to
		Shire road reserve
		Other Crown reserve
		Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____
EFFORT: _____	Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive			1
Dead			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m ²): _____
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud
	Immature fruit	Fruit	Dehisced fruit
			Flower
			Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam	Brown	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam	White	Permanently
Slope	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)
3. Low open hummock grassland (T. epactia)
4. _____

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

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TAXON: <u>Brachychiton obtusilobus</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P4</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>					Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____			
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec UTM's <input checked="" type="checkbox"/> Lat / Northing: <u>-21.944466500000001</u> Long / Easting: <u>114.09432080000001</u> ZONE: _____		METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____		
LAND TENURE:					
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve	
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve	
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____	

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____																
EFFORT: _____	Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____																
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	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				1															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud	Flower															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest <input checked="" type="checkbox"/>	Granite	(on soil surface; eg	Sand	Red	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line	Carbonate				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)
3. Low open hummock grassland (T. epactia)
4. _____

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

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TAXON: <u>Brachychiton obtusilobus</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P4</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94	DecDegrees <input checked="" type="checkbox"/>	DegMinSec	UTMs <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS
AGD84 / AMG84	Lat / Northing: <u>-21.947700900000001</u>		No. satellites:	Map used: _____
WGS84	Long / Easting: <u>114.0939623</u>		Boundary polygon	Map Scale: _____
Unknown	ZONE: _____		captured	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT:	<u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____															
EFFORT:	Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____																
POP'N COUNT ACCURACY:	<u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>															
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Alive				1															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud	Flower															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



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HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>					
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)
3. Low open hummock grassland (T. epactia)
4. _____

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**, Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under Standard Report Forms

TAXON: <u>Brachychiton obtusilobus</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P4</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
<u>GDA94 / MGA94</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>AGD84 / AMG84</u>	Lat / Northing: <u>-21.94819167</u>		<u>No. satellites:</u>	<u>Map used:</u>
<u>WGS84</u>	Long / Easting: <u>114.10233762999999</u>		<u>Boundary polygon captured</u>	<u>Map Scale:</u>
<u>Unknown</u>	ZONE: _____			
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT:	<u>Edge survey</u>	<input checked="" type="checkbox"/> <u>Partial survey</u>	<u>Full survey</u>	Area observed (m²): _____															
EFFORT:	<u>Time spent surveying (minutes):</u>			No. of minutes spent / 100 m²: _____															
POP'N COUNT ACCURACY:	<input checked="" type="checkbox"/> <u>Actual</u>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																			
WHAT COUNTED:	<input checked="" type="checkbox"/> <u>Plants</u>	<u>Clumps</u>	<u>Clonal stems</u>																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td><u>1</u></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				<u>1</u>	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				<u>1</u>															
Dead																			
QUADRATS PRESENT:	<u>No.</u>	<u>Size</u>	<u>Data attached</u>	Total area of quadrats (m²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	<input type="checkbox"/> <u>Clonal</u>	<input type="checkbox"/> <u>Vegetative</u>	<input type="checkbox"/> <u>Flowerbud</u>	<input type="checkbox"/> <u>Flower</u>															
	<input type="checkbox"/> <u>Immature fruit</u>	<input type="checkbox"/> <u>Fruit</u>	<input type="checkbox"/> <u>Dehisced fruit</u>	<input type="checkbox"/> <u>Percentage in flower: %</u>															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>					
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)
3. Low open hummock grassland (T. epactia)
4. _____

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

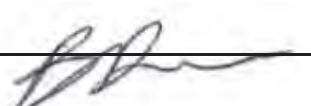
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
 Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

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Threatened and Priority Flora Report Form

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TAXON: <u>Brachychiton obtusilobus</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>22/8/2021</u>	CONSERVATION STATUS: <u>P4</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>		Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec Lat / Northing: <u>-21.949670309999998</u> Long / Easting: <u>114.10527007</u> ZONE: _____	METHOD USED: UTMs <input checked="" type="checkbox"/> GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____
LAND TENURE:		
Nature reserve	Timber reserve	Private property
National park	State forest	Pastoral lease
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>
		Rail reserve
		MRWA road reserve
		SLK/Pole to
		Shire road reserve
		Other Crown reserve
		Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____
EFFORT: _____	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive			1
Dead			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m ²): _____
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehisced fruit</u>
			Flower Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
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Slope	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat <input checked="" type="checkbox"/>	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)
3. Low open hummock grassland (T. epactia)
4. _____

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed: _____ Date: 22 / 12 / 2021

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TAXON: <u>Brachychiton obtusilobus</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>26/8/2021</u>	CONSERVATION STATUS: <u>P4</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94	DecDegrees <input checked="" type="checkbox"/>	DegMinSec	UTMs <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS
AGD84 / AMG84	Lat / Northing: <u>-21.948088590000001</u>		No. satellites:	Map used: _____
WGS84	Long / Easting: <u>114.10878669</u>		Boundary polygon captured	Map Scale: _____
Unknown	ZONE: _____			
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT:	Edge survey	Partial survey <input checked="" type="checkbox"/>	Full survey	Area observed (m ²): _____															
EFFORT:	Time spent surveying (minutes): _____			No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY:	Actual <input checked="" type="checkbox"/>	Extrapolation	Estimate	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																			
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps	Clonal stems																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				1	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				1															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud	Flower															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand <input checked="" type="checkbox"/>	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam	Brown	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam	White	Permanently
Slope	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat <input checked="" type="checkbox"/>	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)
3. Low open hummock grassland (T. epactia)
4. _____

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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TAXON: <u>Brachychiton obtusilobus</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>26/8/2021</u>	CONSERVATION STATUS: <u>P4</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>					Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____			
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec UTM's <input checked="" type="checkbox"/> Lat / Northing: <u>-21.955808000000001</u> Long / Easting: <u>114.124487</u> ZONE: _____		METHOD USED: GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____		
LAND TENURE:					
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve	
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve	
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____	

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____																
EFFORT: _____	Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____																
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>																
(Refer to field manual for list)																			
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td><u>1</u></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				<u>1</u>	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				<u>1</u>															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>	<u>Flower</u>															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand <input checked="" type="checkbox"/>	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam	Brown	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam	White	Permanently
Slope	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat <input checked="" type="checkbox"/>	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)
3. Low open hummock grassland (T. epactia)
4. _____

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
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Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under *Standard Report Forms*

TAXON: <u>Corchorus congener</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>21/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): Exmouth				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94	DecDegrees <input checked="" type="checkbox"/>	DegMinSec	UTMs <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS
AGD84 / AMG84	Lat / Northing: <u>-21.836577999999999</u>		No. satellites:	Map used:
WGS84	Long / Easting: <u>114.124487</u>		Boundary polygon	Map Scale:
Unknown	ZONE: _____		captured	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____																
EFFORT:	Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____																
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>																
(Refer to field manual for list)																			
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				1	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				1															
Dead																			
QUADRATS PRESENT:	No. _____	Size <u>50x50</u>	Data attached <input checked="" type="checkbox"/>	Total area of quadrats (m ²): <u>2500</u>															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>	<u>Flower</u>															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat <input checked="" type="checkbox"/>	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall open shrubland (A. synchronicia, A. bivenosa, E. longifolia)

2. Low open hummock grassland (T. epactia)

3. Low tussock grassland (C. ciliaris)

4. Low open hermland (S. pterostylis)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

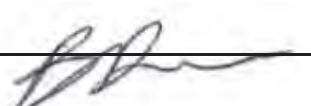
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
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Threatened and Priority Flora Report Form

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TAXON: <u>Corchorus congener</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>25/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>		Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec Lat / Northing: <u>-21.943661209999998</u> Long / Easting: <u>114.09329459</u> ZONE: _____	METHOD USED: UTMs <input checked="" type="checkbox"/> GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____
LAND TENURE:		
Nature reserve	Timber reserve	Private property
National park	State forest	Pastoral lease
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>
		Rail reserve
		MRWA road reserve
		SLK/Pole to
		Shire road reserve
		Other Crown reserve
		Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____
EFFORT: _____	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive			1
Dead			
QUADRATS PRESENT:	No. _____	Size <u>50x50</u>	Data attached <input checked="" type="checkbox"/>
Summary Quad. Totals: Alive	Total area of quadrats (m ²): <u>2500</u>		
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehisced fruit</u>
			Flower Percentage in flower: % _____

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand <input checked="" type="checkbox"/>	Red	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam	White	Permanently
Slope	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat <input checked="" type="checkbox"/>	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall open shrubland (A. synchronicia, A. bivenosa, E. longifolia)

2. Low open hummock grassland (T. epactia)

3. Low tussock grassland (C. ciliaris)

4. Low open hermland (S. pterostylis)

ASSOCIATED SPECIES:

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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TAXON: <u>Eremophila forrestii subsp. capensis</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED:				
<u>AGD84 / AMG84</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>WGS84</u>	Lat / Northing: <u>-21.94385832</u>	No. satellites: _____		Map used: _____
<u>Unknown</u>	Long / Easting: <u>114.09303996</u>	Boundary polygon captured <input type="checkbox"/>		Map Scale: _____
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m²): _____
EFFORT: _____	Time spent surveying (minutes): _____	No. of minutes spent / 100 m²: _____	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
<u>Alive</u>			<u>6</u>
<u>Dead</u>			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m²): _____
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehiscid fruit</u>
			Flower Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Low open woodland (C. hamersleyana)

2. Mid open shrubland (S. glutinosa subsp. pruinosa, A. bivenosa)

3. Low open shrubland (P. obovatus, C. crozophorifolius)

4. Low open hummock grassland (T. epactia)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**, Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under Standard Report Forms

TAXON: <u>Eremophila forrestii subsp. capensis</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
<u>GDA94 / MGA94</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>AGD84 / AMG84</u>	Lat / Northing: <u>-21.94380275</u>		<u>No. satellites:</u>	<u>Map used:</u>
<u>WGS84</u>	Long / Easting: <u>114.09837443000001</u>		<u>Boundary polygon captured</u>	<u>Map Scale:</u>
<u>Unknown</u>	ZONE: _____			
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m²): _____	
EFFORT:	<u>Time spent surveying (minutes):</u>		No. of minutes spent / 100 m²: _____	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>	
(Refer to field manual for list)				
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:	Totals:
<u>Alive</u>				<u>10</u>
<u>Dead</u>				
QUADRATS PRESENT:	<u>No.</u>	<u>Size</u>	<u>Data attached</u>	Total area of quadrats (m²): _____
Summary Quad. Totals: Alive				
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>	<u>Flower</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehisced fruit</u>	<u>Percentage in flower: %</u>

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)

2. Low open hummock grassland (T. epactia)

- 3.

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

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Threatened and Priority Flora Report Form

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TAXON: <u>Eremophila forrestii subsp. capensis</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): Exmouth				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec Lat / Northing: <u>-21.946906859999999</u> Long / Easting: <u>114.09803087</u> ZONE: _____		METHOD USED: UTMs <input checked="" type="checkbox"/> GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____																
EFFORT: Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____																	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>		<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>															
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WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				1	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				1															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal Immature fruit	Vegetative Fruit	Flowerbud Dehisced fruit	Flower Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
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• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
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Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

4. Sparse herbland (G. tenuiloba, H. gossei var. inflata)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

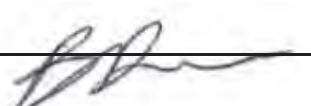
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

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OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
<u>GDA94 / MGA94</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>AGD84 / AMG84</u>	Lat / Northing: <u>-21.949204009999999</u>		<u>No. satellites:</u>	<u>Map used:</u>
<u>WGS84</u>	Long / Easting: <u>114.09223316000001</u>		<u>Boundary polygon captured</u>	<u>Map Scale:</u>
<u>Unknown</u>	ZONE: _____			
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
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AREA ASSESSMENT:	<u>Edge survey</u>	<input checked="" type="checkbox"/> <u>Partial survey</u>	<u>Full survey</u>	Area observed (m²): _____															
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Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	<input type="checkbox"/> <u>Clonal</u>	<input type="checkbox"/> <u>Vegetative</u>	<input type="checkbox"/> <u>Flowerbud</u>	<input type="checkbox"/> <u>Flower</u>															
	<input type="checkbox"/> <u>Immature fruit</u>	<input type="checkbox"/> <u>Fruit</u>	<input type="checkbox"/> <u>Dehisced fruit</u>	<input type="checkbox"/> <u>Percentage in flower: %</u>															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
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• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
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Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION

CLASSIFICATION*:

Eg: 1. Banksia woodland
(B. attenuata, B. illicifolia);
2. Open shrubland
(Hibbertia sp., Acacia spp.);
3. Isolated clumps of
sedges (Mesomelaena
tetragona)

1. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)

2. Low open hummock grassland (T. epactia)

3.

4.

ASSOCIATED

SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

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TAXON: <u>Eremophila forrestii subsp. capensis</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>26/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>		Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec Lat / Northing: <u>-21.950277700000001</u> Long / Easting: <u>114.10426645</u> ZONE: _____	METHOD USED: UTMs <input checked="" type="checkbox"/> GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____
LAND TENURE:		
Nature reserve	Timber reserve	Private property
National park	State forest	Pastoral lease
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>
		Rail reserve
		MRWA road reserve
		SLK/Pole to
		Shire road reserve
		Other Crown reserve
		Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____
EFFORT: _____	Time spent surveying (minutes): _____	No. of minutes spent / 100 m ² : _____	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive			4
Dead			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m ²): _____
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud
	Immature fruit	Fruit	Dehisced fruit
			Flower
			Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)

2. Low open hummock grassland (T. epactia)

- 3.

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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Threatened and Priority Flora Report Form

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TAXON: <u>Eremophila forrestii subsp. capensis</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>26/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
<u>GDA94 / MGA94</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>AGD84 / AMG84</u>	Lat / Northing: <u>-21.949595599999999</u>		<u>No. satellites:</u>	<u>Map used:</u>
<u>WGS84</u>	Long / Easting: <u>114.10872307</u>		<u>Boundary polygon captured</u>	<u>Map Scale:</u>
<u>Unknown</u>	ZONE: _____			
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT:	<u>Edge survey</u>	<input checked="" type="checkbox"/> <u>Partial survey</u>	<u>Full survey</u>	Area observed (m²): _____															
EFFORT:	<u>Time spent surveying (minutes):</u>			No. of minutes spent / 100 m²: _____															
POP'N COUNT ACCURACY:	<input checked="" type="checkbox"/> <u>Actual</u>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																			
WHAT COUNTED:	<input checked="" type="checkbox"/> <u>Plants</u>	<u>Clumps</u>	<u>Clonal stems</u>																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td><u>10</u></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				<u>10</u>	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				<u>10</u>															
Dead																			
QUADRATS PRESENT:	<u>No.</u>	<u>Size</u>	<u>Data attached</u>	Total area of quadrats (m²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	<input type="checkbox"/> <u>Clonal</u>	<input type="checkbox"/> <u>Vegetative</u>	<input type="checkbox"/> <u>Flowerbud</u>	<input type="checkbox"/> <u>Flower</u>															
	<input type="checkbox"/> <u>Immature fruit</u>	<input type="checkbox"/> <u>Fruit</u>	<input type="checkbox"/> <u>Dehisced fruit</u>	<input type="checkbox"/> <u>Percentage in flower: %</u>															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)

2. Low open hummock grassland (T. epactia)

- 3.

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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Threatened and Priority Flora Report Form

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TAXON: <u>Eremophila forrestii subsp. capensis</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>26/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED:				
<u>AGD84 / AMG84</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>WGS84</u>	Lat / Northing: <u>-21.9445546</u>	No. satellites: _____		Map used: _____
<u>Unknown</u>	Long / Easting: <u>114.1138495</u>	Boundary polygon captured <input type="checkbox"/>		Map Scale: _____
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m²): _____
EFFORT: _____	Time spent surveying (minutes): _____	No. of minutes spent / 100 m²: _____	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
<u>Alive</u>			<u>1</u>
<u>Dead</u>			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m²): _____
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Flower</u>
		<u>Dehisced fruit</u>	Percentage in flower: % _____

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)

2. Low open hummock grassland (T. epactia)

- 3.

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

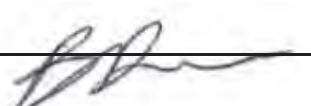
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

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TAXON: <u>Eremophila forrestii subsp. capensis</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>21/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
<u>GDA94 / MGA94</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>AGD84 / AMG84</u>	Lat / Northing: <u>-21.953305</u>		<u>No. satellites:</u>	<u>Map used:</u>
<u>WGS84</u>	Long / Easting: <u>114.126633</u>		<u>Boundary polygon captured</u>	<u>Map Scale:</u>
<u>Unknown</u>	ZONE: _____			
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT:	<u>Edge survey</u>	<input checked="" type="checkbox"/> <u>Partial survey</u>	<u>Full survey</u>	Area observed (m²): _____															
EFFORT:	<u>Time spent surveying (minutes):</u>			No. of minutes spent / 100 m²: _____															
POP'N COUNT ACCURACY:	<input checked="" type="checkbox"/> <u>Actual</u>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																			
WHAT COUNTED:	<input checked="" type="checkbox"/> <u>Plants</u>	<u>Clumps</u>	<u>Clonal stems</u>																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td><u>1</u></td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				<u>1</u>	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				<u>1</u>															
Dead																			
QUADRATS PRESENT:	<u>No.</u>	<u>Size 50x50</u>	<input checked="" type="checkbox"/> <u>Data attached</u>	Total area of quadrats (m²): <u>2500</u>															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	<input type="checkbox"/> <u>Clonal</u>	<input type="checkbox"/> <u>Vegetative</u>	<input type="checkbox"/> <u>Flowerbud</u>	<input type="checkbox"/> <u>Flower</u>															
	<input type="checkbox"/> <u>Immature fruit</u>	<input type="checkbox"/> <u>Fruit</u>	<input type="checkbox"/> <u>Dehisced fruit</u>	<input type="checkbox"/> <u>Percentage in flower: %</u>															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION

CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Low open woodland (C. hamersleyana)

2. Mid open shrubland (S. glutinosa subsp. pruinosa, A. bivenosa)

3. Low open shrubland (P. obovatus, C. crozophorifolius)

4. Low open hummock grassland (T. epactia)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
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Threatened and Priority Flora Report Form

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TAXON: <u>Grevillea calcicola</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED:				
<u>AGD84 / AMG84</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>WGS84</u>	Lat / Northing: <u>-21.9506525</u>	No. satellites: _____		Map used: _____
<u>Unknown</u>	Long / Easting: <u>114.09449745000001</u>	Boundary polygon captured <input type="checkbox"/>		Map Scale: _____
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m²): _____
EFFORT: _____	Time spent surveying (minutes): _____	No. of minutes spent / 100 m²: _____	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
<u>Alive</u>			<u>1</u>
<u>Dead</u>			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m²): _____
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehisced fruit</u>
			Flower Percentage in flower: % _____

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Low isolated trees (C. hamersleyana)

2. Tall open shrubland (A. alexandria, A. tetragonophylla, A. bivenosa)

3. Low sparse shrubland (S. artemoides subsp. oligophylla, T. rosea var. clementii, S. ferraria)

4. Low sparse hummock grassland (T. epactia)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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 Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

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TAXON: <u>Grevillea calcicola</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>23/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED:				
<u>AGD84 / AMG84</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>WGS84</u>	Lat / Northing: <u>-21.94389485</u>	No. satellites: _____		Map used: _____
<u>Unknown</u>	Long / Easting: <u>114.09879017999999</u>	Boundary polygon captured <input type="checkbox"/>		Map Scale: _____
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m²): _____
EFFORT: _____	Time spent surveying (minutes): _____		No. of minutes spent / 100 m²: _____
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
<u>Alive</u>			<u>1</u>
<u>Dead</u>			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m²): _____
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehisced fruit</u>
			Flower Percentage in flower: % _____

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION

CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Low isolated trees (C. hamersleyana)

2. Tall open shrubland (A. alexandria, A. tetragonophylla, A. bivenosa)

3. Low sparse shrubland (S. artemoides subsp. oligophylla, T. rosea var. clementii, S. ferraria)

4. Low sparse hummock grassland (T. epactia)

ASSOCIATED

SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

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TAXON: <u>Grevillea calcicola</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>22/8/2021</u>	CONSERVATION STATUS: <u>P3</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) METHOD USED:				
<u>AGD84 / AMG84</u>	<u>DecDegrees</u> <input checked="" type="checkbox"/>	<u>DegMinSec</u>	<u>UTMs</u> <input checked="" type="checkbox"/>	<u>GPS</u> <input checked="" type="checkbox"/> <u>Differential GPS</u> <input type="checkbox"/> <u>Map</u> <input type="checkbox"/>
<u>WGS84</u>	Lat / Northing: <u>-21.948183109999999</u>	Long / Easting: <u>114.10233971</u>		<u>No. satellites:</u> _____ <u>Map used:</u> _____
<u>Unknown</u>	ZONE: _____	<u>Boundary polygon captured</u>		<u>Map Scale:</u> _____
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m²): _____
EFFORT: <u>Time spent surveying (minutes):</u> _____	No. of minutes spent / 100 m²: _____		
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
<u>Alive</u>			<u>2</u>
<u>Dead</u>			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m²): _____
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>
	<u>Immature fruit</u>	<u>Fruit</u>	<u>Dehiscid fruit</u>
			Flower Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Low isolated trees (C. hamersleyana)

2. Tall open shrubland (A. alexandria, A. tetragonophylla, A. bivenosa)

3. Low sparse shrubland (S. artemoides subsp. oligophylla, T. rosea var. clementii, S. ferraria)

4. Low sparse hummock grassland (T. epactia)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

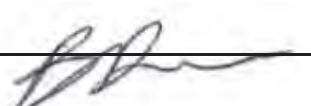
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
 Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under Standard Report Forms

TAXON: <u>Harnieria kempeana subsp. rhadinophylla</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94	DecDegrees <input checked="" type="checkbox"/>	DegMinSec	UTMs <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS
AGD84 / AMG84	Lat / Northing: <u>-21.949788600000002</u>		No. satellites:	Map used: _____
WGS84	Long / Easting: <u>114.09319449</u>		Boundary polygon	Map Scale: _____
Unknown	ZONE: _____		captured	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT:	Edge survey	Partial survey <input checked="" type="checkbox"/>	Full survey	Area observed (m ²): _____															
EFFORT:	Time spent surveying (minutes): _____			No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY:	Actual <input checked="" type="checkbox"/>	Extrapolation	Estimate	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																			
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps	Clonal stems																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				3	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				3															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud	Flower															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat <input checked="" type="checkbox"/>	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line					
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall open shrubland (M. cardiophylla, A. alexandri, A. arida)

2. Low open hummock grassland (T. epactia)

- 3.

- 4.

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Bridget Duncan Role: Ecologist Signed: _____ Date: 22 / 12 / 2021

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Threatened and Priority Flora Report Form

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TAXON: <u>Tinospora esiangkara</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) <u>DecDegrees <input checked="" type="checkbox"/> DegMinSec</u> METHOD USED: <u>GPS <input checked="" type="checkbox"/> Differential GPS</u> <u>Map</u>				
<u>AGD84 / AMG84</u>	Lat / Northing: <u>-21.94404485000001</u>	<u>UTMs <input checked="" type="checkbox"/></u>	<u>No. satellites:</u>	<u>Map used:</u>
<u>WGS84</u>	Long / Easting: <u>114.09311968</u>	<u>Boundary polygon captured</u>	<u>Map Scale:</u>	
<u>Unknown</u>	ZONE: _____			
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u> <input type="checkbox"/> <u>Partial survey</u> <input checked="" type="checkbox"/> <u>Full survey</u> <input type="checkbox"/>	Area observed (m²): _____												
EFFORT: <u>Time spent surveying (minutes):</u> _____	No. of minutes spent / 100 m²: _____												
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/> <u>Extrapolation</u> <input type="checkbox"/> <u>Estimate</u> <input type="checkbox"/>	Count Method: <u>Actual count - individuals</u>												
(Refer to field manual for list)													
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/> <u>Clumps</u> <input type="checkbox"/> <u>Clonal stems</u> <input type="checkbox"/>													
TOTAL POP'N STRUCTURE:	Area of pop (m²): _____												
<u>Alive</u>	<table border="1"> <tr> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> <tr> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Mature:	Juveniles:	Seedlings:	Totals:				1				
Mature:		Juveniles:	Seedlings:	Totals:									
			1										
<u>Dead</u>	Note: Pls record count as numbers (not percentages) for database.												
QUADRATS PRESENT:	Total area of quadrats (m²): _____												
Summary Quad. Totals: Alive													
REPRODUCTIVE STATE:	Percentage in flower: %												
<input type="checkbox"/> Clonal	<input type="checkbox"/> Vegetative												
<input type="checkbox"/> Immature fruit	<input type="checkbox"/> Fruit												
<input type="checkbox"/> Flowerbud	<input type="checkbox"/> Dehisced fruit												

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

4. Sparse herbland (G. tenuiloba, H. gossei var. inflata)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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TAXON: <u>Tinospora esiangkara</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>23/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) <u>DecDegrees <input checked="" type="checkbox"/> DegMinSec</u> METHOD USED: <u>GPS <input checked="" type="checkbox"/> Differential GPS</u> <u>Map</u>				
<u>AGD84 / AMG84</u> Lat / Northing: <u>-21.944702190000001</u>		<u>UTMs <input checked="" type="checkbox"/></u> No. satellites: _____		Map used: _____
<u>WGS84</u> Long / Easting: <u>114.09456613</u>		<u>Boundary polygon captured</u>		Map Scale: _____
<u>Unknown</u> ZONE: _____				
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u> <input type="checkbox"/> <u>Partial survey</u> <input checked="" type="checkbox"/> <u>Full survey</u> <input type="checkbox"/>	Area observed (m²): _____												
EFFORT: <u>Time spent surveying (minutes):</u> _____	No. of minutes spent / 100 m²: _____												
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TOTAL POP'N STRUCTURE:	Area of pop (m²): _____												
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Mature:		Juveniles:	Seedlings:	Totals:									
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<u>Dead</u>	Note: Pls record count as numbers (not percentages) for database.												
QUADRATS PRESENT:	Total area of quadrats (m²): _____												
Summary Quad. Totals: Alive													
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<input type="checkbox"/> Immature fruit	<input type="checkbox"/> Fruit												
<input type="checkbox"/> Flowerbud	<input type="checkbox"/> Dehisced fruit												

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
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HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
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Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
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Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

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ASSOCIATED SPECIES:

Other (non-dominant) spp

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CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

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TAXON: <u>Tinospora esiangkara</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>		Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec Lat / Northing: <u>-21.947018929999999</u> Long / Easting: <u>114.09759456</u> ZONE: _____	METHOD USED: UTMs <input checked="" type="checkbox"/> GPS <input checked="" type="checkbox"/> Differential GPS No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____
LAND TENURE:		
Nature reserve	Timber reserve	Private property
National park	State forest	Pastoral lease
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>
		Rail reserve
		MRWA road reserve
		SLK/Pole to
		Shire road reserve
		Other Crown reserve
		Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____
EFFORT: _____	Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>	<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>
(Refer to field manual for list)			
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>	
TOTAL POP'N STRUCTURE:	Mature:	Juveniles:	Seedlings:
Alive			1
Dead			
QUADRATS PRESENT:	No.	Size	Data attached
Summary Quad. Totals: Alive			Total area of quadrats (m ²): _____
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud
	Immature fruit	Fruit	Dehisced fruit
			Flower Percentage in flower: %

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

Please return completed form to **Species And Communities Branch DBCA**,
Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

4. Sparse herbland (G. tenuiloba, H. gossei var. inflata)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

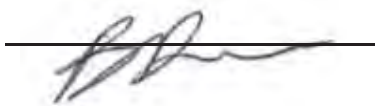
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

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Threatened and Priority Flora Report Form

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TAXON: <u>Tinospora esiangkara</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>24/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94	DecDegrees <input checked="" type="checkbox"/>	DegMinSec	UTMs <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS
AGD84 / AMG84	Lat / Northing: <u>-21.95031364000001</u>		No. satellites:	Map used:
WGS84	Long / Easting: <u>114.09396584</u>		Boundary polygon	Map Scale:
Unknown	ZONE: _____		captured	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT:	Edge survey	Partial survey <input checked="" type="checkbox"/>	Full survey	Area observed (m ²): _____															
EFFORT:	Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____																
POP'N COUNT ACCURACY:	Actual <input checked="" type="checkbox"/>	Extrapolation	Estimate	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																			
WHAT COUNTED:	Plants <input checked="" type="checkbox"/>	Clumps	Clonal stems																
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	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				1															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud	Flower															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

4. Sparse herbland (G. tenuiloba, H. gossei var. inflata)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: Last Fire: Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021



Threatened and Priority Flora Report Form

Please complete as much of the form as possible, with emphasis on those sections bordered in black. For information on how to complete the form please refer to the Threatened & Priority Flora Report Form (TPRF) manual on the DBCA website at <http://dpaw.wa.gov.au> under *Standard Report Forms*

TAXON: <u>Tinospora esiangkara</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>26/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): Exmouth				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM: GDA94 / MGA94 AGD84 / AMG84 WGS84 Unknown	COORDINATES: (If UTM coords provided, Zone is also required) DecDegrees <input checked="" type="checkbox"/> DegMinSec Lat / Northing: <u>-21.950690179999999</u> Long / Easting: <u>114.101282</u> ZONE: _____		METHOD USED: UTMs <input checked="" type="checkbox"/> GPS <input checked="" type="checkbox"/> Differential GPS Map No. satellites: _____ Map used: _____ Boundary polygon captured Map Scale: _____	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u>	<u>Partial survey</u> <input checked="" type="checkbox"/>	<u>Full survey</u>	Area observed (m ²): _____																
EFFORT: Time spent surveying (minutes): _____		No. of minutes spent / 100 m ² : _____																	
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/>		<u>Extrapolation</u>	<u>Estimate</u>	Count Method: <u>Actual count - individuals</u>															
(Refer to field manual for list)																			
WHAT COUNTED:	<u>Plants</u> <input checked="" type="checkbox"/>	<u>Clumps</u>	<u>Clonal stems</u>																
TOTAL POP'N STRUCTURE:	<table border="1"> <thead> <tr> <th></th> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> </thead> <tbody> <tr> <td>Alive</td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>Dead</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Mature:	Juveniles:	Seedlings:	Totals:	Alive				1	Dead				
	Mature:	Juveniles:	Seedlings:	Totals:															
Alive				1															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	<u>Clonal</u>	<u>Vegetative</u>	<u>Flowerbud</u>	<u>Flower</u>															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
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• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

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4. Sparse herbland (G. tenuiloba, H. gossei var. inflata)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

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TAXON: <u>Tinospora esiangkara</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>22/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94	DecDegrees <input checked="" type="checkbox"/>	DegMinSec	UTMs <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS
AGD84 / AMG84	Lat / Northing: <u>-21.947674469999999</u>		No. satellites:	Map used:
WGS84	Long / Easting: <u>114.10536423000001</u>		Boundary polygon	Map Scale:
Unknown	ZONE: _____		captured	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT:	Edge survey	Partial survey <input checked="" type="checkbox"/>	Full survey	Area observed (m ²): _____															
EFFORT:	Time spent surveying (minutes): _____			No. of minutes spent / 100 m ² : _____															
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Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud	Flower															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
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Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

4. Sparse herbland (G. tenuiloba, H. gossei var. inflata)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

DRF PERMIT/ LICENCE No: FB26000262, FB26000272 Note if only observing plants (i.e. no specimens or plant material is taken) then no permit/licence is required. For further information on permit and licencing requirements see the Threatened Flora and Wildlife Licensing pages on DBCA's website/ Any actions carried out under the licence/permit should be recorded above in the OTHER COMMENTS section.

SPECIMEN: Collectors No: _____ WA Herb. Regional Herb. District Herb. Other: _____

ATTACHED: Map Mudmap Photo GIS data Field notes Other: Additional records attached

COPY SENT TO: Regional Office District Office Other: _____

Submitter of Record: Bridget Duncan Role: Ecologist Signed:  Date: 22 / 12 / 2021

Please return completed form to **Species And Communities Branch DBCA**,
 Locked Bag 104, BENTLY DELIVERY CENTRE WA 6983 OR email to: flora.data@dbca.wa.gov.au

RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

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TAXON: <u>Tinospora esiangkara</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>22/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
DBC DISTRICT: <u>Western Pilbara</u> LGA: <u>Shire of Exmouth</u>				Reserve no.: _____
DATUM: <u>GDA94 / MGA94</u> COORDINATES: (If UTM coords provided, Zone is also required) <u>DecDegrees <input checked="" type="checkbox"/> DegMinSec</u> METHOD USED: <u>GPS <input checked="" type="checkbox"/> Differential GPS</u> <u>Map</u>				
<u>AGD84 / AMG84</u> Lat / Northing: <u>-21.948374210000001</u>		<u>UTMs <input checked="" type="checkbox"/></u> No. satellites: _____		Map used: _____
<u>WGS84</u> Long / Easting: <u>114.10970937</u>		<u>Boundary polygon captured</u>		Map Scale: _____
<u>Unknown</u> ZONE: _____				
LAND TENURE:				
<input type="checkbox"/> Nature reserve	<input type="checkbox"/> Timber reserve	<input type="checkbox"/> Private property	<input type="checkbox"/> Rail reserve	<input type="checkbox"/> Shire road reserve
<input type="checkbox"/> National park	<input type="checkbox"/> State forest	<input type="checkbox"/> Pastoral lease	<input type="checkbox"/> MRWA road reserve	<input type="checkbox"/> Other Crown reserve
<input type="checkbox"/> Conservation park	<input type="checkbox"/> Water reserve	<input checked="" type="checkbox"/> UCL	<input type="checkbox"/> SLK/Pole to	<input type="checkbox"/> Specify other: _____

AREA ASSESSMENT: <u>Edge survey</u> <input type="checkbox"/> <u>Partial survey</u> <input checked="" type="checkbox"/> <u>Full survey</u>	Area observed (m²): _____												
EFFORT: <u>Time spent surveying (minutes):</u> _____	No. of minutes spent / 100 m²: _____												
POP'N COUNT ACCURACY: <u>Actual</u> <input checked="" type="checkbox"/> <u>Extrapolation</u> <input type="checkbox"/> <u>Estimate</u> <input type="checkbox"/>	Count Method: <u>Actual count - individuals</u>												
(Refer to field manual for list)													
WHAT COUNTED: <u>Plants</u> <input checked="" type="checkbox"/> <u>Clumps</u> <input type="checkbox"/> <u>Clonal stems</u> <input type="checkbox"/>													
TOTAL POP'N STRUCTURE:	Area of pop (m²): _____												
Alive	<table border="1"> <tr> <th>Mature:</th> <th>Juveniles:</th> <th>Seedlings:</th> <th>Totals:</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td>1</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	Mature:	Juveniles:	Seedlings:	Totals:				1				
Mature:		Juveniles:	Seedlings:	Totals:									
			1										
Dead	Note: Pls record count as numbers (not percentages) for database.												
QUADRATS PRESENT:	Total area of quadrats (m²): _____												
Summary Quad. Totals: Alive													
REPRODUCTIVE STATE:	Percentage in flower: %												
<input type="checkbox"/> Clonal	<input type="checkbox"/> Vegetative	<input type="checkbox"/> Flowerbud	<input type="checkbox"/> Flower										
<input type="checkbox"/> Immature fruit	<input type="checkbox"/> Fruit	<input type="checkbox"/> Dehisced fruit											

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

Please return completed form to **Species And Communities Branch DBCA**,
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RECORDS: Please forward to **Flora Administrative Officer**, Species and Communities Branch.

Record entered by: _____ Sheet No.: _____ Record Entered in Database



Threatened and Priority Flora Report Form

HABITAT INFORMATION:

LANDFORM:	ROCK TYPE:	LOOSE ROCK:	SOIL TYPE:	SOIL COLOUR:	DRAINAGE:
Crest	Granite	(on soil surface; eg	Sand	Red <input checked="" type="checkbox"/>	Well drained
Hill	Dolerite	gravel, quartz fields)	Sandy loam <input checked="" type="checkbox"/>	Brown <input checked="" type="checkbox"/>	Seasonally
Ridge	Laterite	0-10%	Loam	Yellow	inundated <input checked="" type="checkbox"/>
Outcrop	Ironstone	10-30%	Clay loam <input checked="" type="checkbox"/>	White	Permanently
Slope <input checked="" type="checkbox"/>	Limestone <input checked="" type="checkbox"/>	30-50%	Light clay	Grey	inundated
Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Tall sparse shrubland (A. bivenosa)

2. Mid sparse shrubland (M. cardiophylla)

3. Low open hummock grassland (T. glabra)

4. Sparse herbland (G. tenuiloba, H. gossei var. inflata)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

ROADSIDE MARKERS: Not required Present Replace / reposition Required Quantity req'd: _____

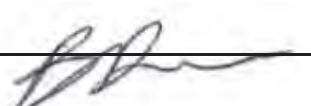
OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

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TAXON: <u>Tinospora esiangkara</u>	TPFL Pop. No.: _____
OBSERVATION DATE: <u>25/8/2021</u>	CONSERVATION STATUS: <u>P2</u> New population: <input checked="" type="checkbox"/>
OBSERVER/S: <u>Bridget Duncan, Ben Eckermann, Jason Webb</u>	PHONE: <u>9388 8360</u>
ROLE: <u>Botanist</u>	ORGANISATION: <u>360 Environmental</u>

DESCRIPTION OF LOCATION (Provide at least nearest town/names locality, and the distance and direction to that place): <u>Exmouth</u>				
				Reserve no: _____
DBC DISTRICT: <u>Western Pilbara</u>	LGA: <u>Shire of Exmouth</u>	Land manager present: _____		
DATUM:	COORDINATES: (If UTM coords provided, Zone is also required)		METHOD USED:	
GDA94 / MGA94	DecDegrees <input checked="" type="checkbox"/>	DegMinSec	UTMs <input checked="" type="checkbox"/>	GPS <input checked="" type="checkbox"/> Differential GPS
AGD84 / AMG84	Lat / Northing: <u>-21.837740279999998</u>		No. satellites:	Map used:
WGS84	Long / Easting: <u>114.1446579</u>		Boundary polygon	Map Scale:
Unknown	ZONE: _____		captured	
LAND TENURE:				
Nature reserve	Timber reserve	Private property	Rail reserve	Shire road reserve
National park	State forest	Pastoral lease	MRWA road reserve	Other Crown reserve
Conservation park	Water reserve	UCL <input checked="" type="checkbox"/>	SLK/Pole to	Specify other: _____

AREA ASSESSMENT:	Edge survey	Partial survey <input checked="" type="checkbox"/>	Full survey	Area observed (m ²): _____															
EFFORT:	Time spent surveying (minutes): _____			No. of minutes spent / 100 m ² : _____															
POP'N COUNT ACCURACY:	Actual <input checked="" type="checkbox"/>	Extrapolation	Estimate	Count Method: <u>Actual count - individuals</u>															
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Alive				1															
Dead																			
QUADRATS PRESENT:	No.	Size	Data attached	Total area of quadrats (m ²): _____															
Summary Quad. Totals: Alive																			
REPRODUCTIVE STATE:	Clonal	Vegetative	Flowerbud	Flower															
	Immature fruit	Fruit	Dehisced fruit	Percentage in flower: %															

CONDITION OF PLANTS: Healthy Moderate Poor Senescent

COMMENT: _____

THREATS – type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. Specify agent where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	Current impact (N-E)	Potential impact (L-E)	Potential Threat Onset (S-L)
• Complete vegetation clearing - Energy resource enterprise	<u>N</u>	<u>H</u>	<u>M</u>
• Weed invasion - General	<u>L</u>	<u>M</u>	<u>M</u>
•			

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Flat	Quartz	50-100%	Peat	Black	Tidal
Open depression	Specify other:		Specify other:	Specify other:	
Drainage line <input checked="" type="checkbox"/>	Calcrete				
Closed depression	Specific Landform Element				
Wetland	(Refer to field manual for additional values)				
CONDITION OF SOIL:	Dry	Moist	Waterlogged	Inundated	

VEGETATION CLASSIFICATION*:

Eg: 1. Banksia woodland (B. attenuata, B. illicifolia);
 2. Open shrubland (Hibbertia sp., Acacia spp.);
 3. Isolated clumps of sedges (Mesomelaena tetragona)

1. Low-mid sparse shrubland (A. tetragonophylla, E. aphyllus, A. bivenosa)

2. Low sparse shrubland (P. obovatus)

3. Low open hummock grassland (T. epactia)

4. Low sparse tussock grassland (C. ciliaris, E. mucronata)

ASSOCIATED SPECIES:

Other (non-dominant) spp

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formation should follow 2009 Australian Soil and Land Survey Field Handbook guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine Excellent Very good Good Degraded Completely degraded

COMMENT:

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: >10 **Fire Intensity:** High Medium Low No signs of fire

FENCING: Not required Present Replace / repair Required Length req'd: _____

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OTHER COMMENTS: (Please include recommended management actions and/or implemented actions – include date. Also include details of additional data available, and how to locate it.)

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Appendix G

Fauna Likelihood Assessment

Conservation Status: State - Listed under Biodiversity Conservation Act 2016 or Department of Biodiversity, Conservation and Attractions Conservation, Federal - Listed under Environmental Protection and Biodiversity Conservation Act 1999. CR - Critically Database: NM - NatureMap, PMST - EPBC Protected Matters Search Tool, DBCA - DBCA Threatened and Priority Fauna database search, DBCA 15 yrs - DBCA records within 10 km of the Survey Area and within the last 15 yrs.

Family	Scientific Name	Common Name	Conservation Status		Database				Likelihood of Occurrence	Justification
			State	Federal	NM	PMST	DBCA	DBCA 15 yrs		
Aves										
Apodidae	<i>Apus pacificus</i>	Pacific Swift (Fork-tailed Swift)	MI	MI, MA		x			Low	No nearby records. Uses airspace over varied habitat.
Charadriidae	<i>Charadrius leschenaultii</i>	Greater Sand Plover	VU	VU, MI, MA	x		x	4	Low	Recent nearby records. No suitable habitat (tidal flats).
	<i>Charadrius mongolus</i>	Lesser Sand Plover	EN	EN, MI, MA	x		x	3	Low	Recent nearby records. No suitable habitat (tidal flats).
	<i>Charadrius veredus</i>	Oriental Plover	MI	MI, MA		x	x	0	Medium	Nearby historical records. Suitable habitat present (grasslands, vegetated plains).
	<i>Pluvialis fulva</i>	Pacific Golden Plover	MI	MI, MA			x	0	Low	Nearby records. No suitable habitat (coastal areas, tidal flats).
	<i>Pluvialis squatarola</i>	Grey Plover	MI	MI, MA	x		x	9	Low	Recent nearby records. No suitable habitat (coastal areas, tidal flats).
Diomedidae	<i>Thalassarche chlororhynchus</i>	Yellow-nosed Albatross	VU	MI, MA	x		x	0	Low	Nearby record. No suitable habitat (pelagic).
Falconidae	<i>Falco hypoleucos</i>	Grey Falcon	VU	VU		x			Low	No nearby records. Preferred nesting habitat absent. May use the Survey Area for hunting.
	<i>Falco peregrinus</i>	Peregrine Falcon	OS		x		x	1	Medium	Recent nearby records. May use the Survey Area for hunting.
Fregatidae	<i>Fregata ariel</i>	Lesser Frigatebird	MI	MI, MA		x			Low	No nearby records. No suitable habitat (pelagic).
Glareolidae	<i>Glareola maldivarum</i>	Oriental Pratincole	MI	MI, MA	x	x	x	5	High	Recent nearby records. Suitable habitat present (open plains).
Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	MI	MI, MA		x			Low	No nearby records. Suitable habitat present (near coastal, open country, wetlands).
Laridae	<i>Anous stolidus</i>	Common Noddy (Brown Noddy)	MI	MI, MA		x	x	0	Low	Recent records > 10 km. No suitable habitat (colony islands, pelagic).
	<i>Chlidonias leucopterus</i>	White-winged Black Tern	MI	MI, MA	x		x	5	Low	Recent nearby records. No suitable habitat (fresh to saline coastal and subcoastal wetlands).
	<i>Gelochelidon nilotica</i>	Gull-billed Tern	MI	MI, MA	x		x	0	Low	Recent records > 10 km. No suitable habitat (coastal areas).
	<i>Hydroprogne caspia</i>	Caspian Tern	MI	MI, MA	x		x	4	Low	Recent nearby records. No suitable habitat (sheltered coastal waters, lakes, temporary wetlands).
	<i>Onychoprion anaethetus</i>	Bridled Tern	MI	MI, MA	x				Low	No nearby records. No suitable habitat (pelagic).
	<i>Sterna dougallii</i>	Roseate Tern	MI	MI, MA	x		x	0	Low	Nearby records. No suitable habitat (pelagic).
	<i>Sterna hirundo</i>	Common Tern	MI	MI, MA	x		x	3	Low	Recent nearby records. No suitable habitat (pelagic).
	<i>Sternula albifrons</i>	White-shafted Little Tern	MI	MI, MA	x		x	2	Low	Recent nearby records. No suitable habitat (coastal areas, beaches).
	<i>Sternula nereis nereis</i>		VU	VU		x			Low	No nearby records. No suitable habitat (coastal areas).
	<i>Thalasseus bergii</i>	Crested Tern (Greater Crested Tern)	MI	MI, MA	x		x	26	Low	Recent nearby records. No suitable habitat (coastal areas, beaches, salt lakes).
Motacillidae	<i>Motacilla cinerea</i>	Grey Wagtail	MI	MI, MA		x			Low	No nearby records. No suitable habitat (coastal, lakes, running water).
	<i>Motacilla tschutschensis</i>	Yellow Wagtail	MI	MI, MA		x			Low	No nearby records. No suitable habitat (open wet plains and meadows).
Oceanitidae	<i>Oceanites oceanicus</i>	Wilson's Storm Petrel	MI	MI, MA	x		x	0	Low	Records > 10 km. No suitable habitat (pelagic).
Pandionidae	<i>Pandion haliaetus</i>	Osprey		MI, MA		x			Low	No nearby records. No suitable habitat (coastal areas, beaches).
Pandionidae	<i>Pandion haliaetus cristatus</i>	Eastern Osprey	MI		x		x	36	Low	Recent nearby records. No suitable habitat (coastal areas, beaches, lakes).
Phaethontidae	<i>Phaethon lepturus</i>	White-tailed Tropicbird	MI	MI, MA	x		x	0	Low	Nearby records. No suitable habitat (pelagic).
	<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	MI, P4	MI, MA	x		x	1	Low	Recent nearby records. No suitable habitat (pelagic).

Family	Scientific Name	Common Name	Conservation Status		Database				Likelihood of Occurrence	Justification
			State	Federal	NM	PMST	DBCA	DBCA 15 yrs		
Phaethontidae	<i>Ardenna carneipes</i>	Flesh-footed Shearwater	VU	MI, MA		x			Low	No nearby records. No suitable habitat (pelagic).
	<i>Ardenna pacifica</i>	Wedge-tailed Shearwater	MI	MI, MA	x		x	4	Low	Recent nearby records. No suitable habitat (pelagic).
	<i>Calonectris leucomelas</i>	Streaked Shearwater	MI	MI, MA		x			Low	No nearby records. No suitable habitat (coastal areas).
	<i>Macronectes giganteus</i>	Southern Giant Petrel	MI	EN, MI, MA		x			Low	No nearby records. No suitable habitat (coastal areas).
Procellariidae	<i>Pterodroma mollis</i>	Soft-plumaged Petrel		VU, MA		x			Low	No nearby records. No suitable habitat (pelagic).
	<i>Puffinus huttoni</i>	Hutton's Shearwater	EN	MA	x		x	0	Low	Records > 10 km. No suitable habitat (pelagic).
Psittaculidae	<i>Pezoporus occidentalis</i>	Night Parrot	CR	EN		x			Low	No nearby records. No suitable habitat (spinifex and samphire margins of salt lakes).
Rostratulidae	<i>Rostratula australis</i>	Australian Painted Snipe	EN	EN, MA		x			Low	No nearby records. No suitable habitat (well vegetated wetlands).
Scolopacidae	<i>Actitis hypoleucos</i>	Common Sandpiper	MI	MI, MA	x	x	x	11	Low	Recent nearby records. No suitable habitat (coastal and interior wetlands).
	<i>Arenaria interpres</i>	Ruddy Turnstone	MI	MI, MA	x		x	8	Low	Recent nearby records. No suitable habitat (coastal areas, tidal flats, beaches).
	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	MI	MI, MA	x	x	x	7	Low	Recent nearby records. No suitable habitat (coastal and interior wetlands).
	<i>Calidris alba</i>	Sanderling	MI	MI, MA	x		x	3	Low	Recent nearby records. No suitable habitat (tidal flats, beaches).
	<i>Calidris canutus</i>	Red Knot	EN	EN, MI, MA		x	x	0	Low	Nearby historical records. No suitable habitat (coastal areas, tidal flats).
	<i>Calidris falcinellus</i>	Broad-billed Sandpiper	MI	MI, MA			x	0	Low	Recent records > 10 km. No suitable habitat (mudflats).
	<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	CR, MI, MA		x	x	0	Low	Records > 10 km. No suitable habitat (inter-tidal mudflats).
	<i>Calidris melanotos</i>	Pectoral Sandpiper	MI	MI, MA		x			Low	No nearby records. No suitable habitat (coastal and interior wetlands).
	<i>Calidris ruficollis</i>	Red-necked Stint	MI	MI, MA	x		x	4	Low	Recent nearby records. No suitable habitat (tidal and inland mudflats, beaches).
	<i>Calidris subminuta</i>	Long-toed Stint	MI	MI, MA	x		x	5	Low	Recent nearby records. No suitable habitat (fresh wetlands).
	<i>Gallinago stenura</i>	Pin-tailed Snipe	MI	MI, MA	x		x	1	Low	Recent nearby records. No suitable habitat (wetlands, claypans).
	<i>Limosa lapponica</i>	Bar-tailed Godwit	MI	MI, MA	x	x	x	2	Low	Recent nearby records. No suitable habitat (coastal areas, tidal flats).
	<i>Limosa lapponica menzbieri</i>		CR, MI	CR		x			Low	No nearby records. No suitable habitat (coastal areas, tidal flats).
	<i>Limosa limosa</i>	Black-tailed Godwit	MI	MI, MA			x	0	Low	Recent records > 10 km. No suitable habitat (inland wetlands).
	<i>Numenius madagascariensis</i>	Far Eastern Curlew (Eastern Curlew)	CR	CE, MI, MA	x	x	x	1	Low	Recent nearby records. No suitable habitat (coastal areas, tidal flats).
	<i>Numenius minutus</i>	Little Curlew	MI	MI, MA	x		x	4	Low	Recent nearby records. No suitable habitat (wetlands, flooded areas).
	<i>Numenius phaeopus</i>	Whimbrel	MI	MI, MA	x		x	19	Low	Recent nearby records. No suitable habitat (coastal areas, tidal flats).
	<i>Tringa brevipes</i>	Grey-tailed Tattler	MI, P4	MI, MA	x		x	29	Low	Recent nearby records. No suitable habitat (coastal areas, tidal flats).
	<i>Tringa glareola</i>	Wood Sandpiper	MI	MI, MA	x		x	8	Low	Recent nearby records. No suitable habitat (freshwater wetlands).
	<i>Tringa nebularia</i>	Common Greenshank	MI	MI, MA	x	x	x	24	Low	Recent nearby records. No suitable habitat (coastal areas, permanent and temporary wetlands).
<i>Tringa stagnatilis</i>	Marsh Sandpiper	MI	MI, MA	x		x	1	Low	Nearby records. No suitable habitat (fresh to saline inland wetlands).	
<i>Xenus cinereus</i>	Terek Sandpiper	MI	MI, MA	x		x	1	Low	Recent records > 15 km. No suitable habitat (tidal flats).	

Family	Scientific Name	Common Name	Conservation Status		Database				Likelihood of Occurrence	Justification
			State	Federal	NM	PMST	DBCA	DBCA 15 yrs		
Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy Ibis	MI	MI, MA			x	0	Low	Nearby historical records. No suitable habitat (shallow freshwater, dry grasslands).
Mammalia										
Dasyuridae	<i>Dasyurus hallucatus</i>	Northern Quoll	EN	EN		x			Low	No nearby records. No suitable habitat (rocky escarpments, beaches).
Macropodidae	<i>Petrogale lateralis lateralis</i>	Black-footed Rock-wallaby	EN		x	x	x	79	High	2019 records < 500 m from Survey Area (Lot 550). Suitable habitat present (rock crevices, caves).
Rhinycteridae	<i>Rhinycteris aurantia (Pilbara form)</i>	Pilbara Leaf-nosed Bat	VU	VU		x	x	0	Medium	Records > 15 km. Survey Area does not contain deep, humid caves necessary for dry season roosting, however, small shallow caves may be used during wet season and all habitats may be used for foraging.
Reptilia										
Diplodactylidae	<i>Diplodactylus capensis</i>	Cape Range Stone Gecko	P2		x		x	1	High	Recent nearby records. 2007 record < 2 km from Survey Area (Lot 550). Restricted to the rocky northern end of North West Cape, WA.
Pygopodidae	<i>Aprasia rostrata</i>	Ningaloo Worm Lizard	P3		x		x	2	Medium	Recent nearby records. 2008 record < 4 km from Survey Area (Lot 284). North West Cape south to Yardie Creek and Learmonth and inland to Bullara Station, WA. Suitable habitat present (white coastal dunes, red dunes with <i>Triodia</i>).
Scincidae	<i>Lerista allochira</i>	Cape Range Slider	P3		x		x	8	Medium	Recent nearby records. 2018 records < 5 km from the Survey Area (Lot 284). North West Cape, WA. Suitable habitat present (dissected limestone gorges and plateaus).
Typhlopidae	<i>Anilius splendidus</i>		P2				x	0	Low	Records > 10 km. Western edge of North West Cape, WA (known from one specimen). May use habitats in the Survey Area (shrublands on coral limestone and a thin veneer of sand).

Appendix H

Fauna Habitat Assessments

Site01

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey		
Date	20/08/2021	Personnel	BD
Zone	50	Easting	203697
		Northing	7569835
Landform and soil		Rock	
Landform	Plain	Rock type/s	None
Soil type	Clay loam	Surface stone cover	
Soil colour	Red	Surface stone size classes present	
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	
Disturbance	Litter, Weeds		
Introduced fauna	None observed		
Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Corymbia hamersleyana</i>
Mid stratum	Absent		
Ground stratum	Low (>0.5 m)	Open tussock grassland (20-50%)	* <i>Cenchrus ciliaris</i>



Fulcrum photo ID 136-138

Site02

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey		
Date	21/08/2021	Personnel	BD
Zone	50	Easting	203535
		Northing	7569447
Landform and soil		Rock	
Landform	Plain	Rock type/s	Calcrete, Quartz
Soil type	Clay loam	Surface stone cover	0 - 5%
Soil colour	Brown, Red	Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)
Condition		Habitat Features	
Quality	Disturbed	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	
Disturbance	Weeds		
Introduced fauna	None observed		
Vegetation			
Upper stratum	Absent		
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia synchronicia</i>
Ground stratum	Low (>0.5 m)	Closed tussock grassland (>80%)	* <i>Cenchrus ciliaris</i>



Fulcrum photo ID 139-141

Site03

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	21/08/2021		Personnel	BD	
Zone	50	Easting	203222	Northing	7569464
Landform and soil		Rock			
Landform	Upper slope		Rock type/s	Calcrete, Limestone	
Soil type	Clay loam		Surface stone cover	0 - 5%	
Soil colour	Brown, Red		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
Condition		Habitat Features			
Quality	Very good		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats		
Disturbance	Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Corymbia hamersleyana</i>		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Senna glutinosa pruinosa, Acacia bivenosa</i>		
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	<i>Triodia epactia</i>		



Fulcrum photo ID 149-150

Site04

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	21/08/2021		Personnel	BD	
Zone	50	Easting	203210	Northing	7569288
Landform and soil		Rock			
Landform	Upper slope		Rock type/s	Calcrete, Limestone	
Soil type	Clay loam		Surface stone cover	50 - 75%	
Soil colour	Brown, Red		Surface stone size classes present	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)	
Condition		Habitat Features			
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Rock crevices	
Disturbance	Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Corymbia hamersleyana</i>		
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia arida</i>		
Ground stratum	Low (>0.5 m)	Isolated hummock grasses (<0.25%)	<i>Triodia epactia</i>		



Fulcrum photo ID 153-154

Site05

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	21/08/2021		Personnel	BD	
Zone	50	Easting	202956	Northing	7570088
Landform and soil		Rock			
Landform	Plain		Rock type/s	Limestone	
Soil type	Clay loam		Surface stone cover	0 - 5%	
Soil colour	Brown, Red		Surface stone size classes present	Small Stones (0.6 - 2 cm)	
Condition		Habitat Features			
Quality	Disturbed		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats		
Disturbance	Litter, Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Corymbia hamersleyana</i>		
Mid stratum	Absent				
Ground stratum	Low (>0.5 m)	Tussock grassland (50-80%)	<i>*Cenchrus ciliaris</i>		



Fulcrum photo ID 157-158

Site06

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	21/08/2021		Personnel	BD	
Zone	50	Easting	202973	Northing	7569296
Landform and soil		Rock			
Landform	Undulating plain		Rock type/s	Limestone	
Soil type	Clay loam		Surface stone cover	5 - 25%	
Soil colour	Brown, Red		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)	
Condition		Habitat Features			
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats		
Disturbance	Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Absent				
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia synchronicia, Acacia bivenosa</i>		
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	<i>Triodia epactia</i>		



Fulcrum photo ID 159-160

Site07

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	21/08/2021		Personnel	BD	
Zone	50	Easting	202188	Northing	7570070
Landform and soil		Rock			
Landform	Upper slope		Rock type/s	Calcrete	
Soil type	Clay loam		Surface stone cover	5 - 25%	
Soil colour	Brown, Red		Surface stone size classes present	Stones (2 - 6 cm), Small Rocks (6 - 20 cm)	
Condition		Habitat Features			
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats		
Disturbance	None observed				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Absent				
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)		<i>Melaleuca cardiophylla</i>	
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)		<i>Triodia glabra</i>	



Fulcrum photo ID 167-170

Site08

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	22/08/2021		Personnel	BD	
Zone	50	Easting	201225	Northing	7570031
Landform and soil		Rock			
Landform	Mid slope		Rock type/s	Calcrete, Limestone	
Soil type	Clay loam		Surface stone cover	50 - 75%	
Soil colour	Brown, Red		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
Condition		Habitat Features			
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hummocks	
Disturbance	None observed				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Absent				
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)		<i>Melaleuca cardiophylla</i>	
Ground stratum	Mid (0.5-1 m)	Open hummock grassland (20-50%)		<i>Triodia wiseana</i>	



Fulcrum photo ID 178-179

Site09

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	22/08/2021		Personnel	BD	
Zone	50	Easting	200975	Northing	7570368
Landform and soil		Rock			
Landform	Upper slope		Rock type/s	Calcrete, Limestone	
Soil type	Clay loam		Surface stone cover	50 - 75%	
Soil colour	Brown, Red		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
Condition		Habitat Features			
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hummocks	
Disturbance	None observed				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Absent				
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Melaleuca cardiophylla</i>		
Ground stratum	Low (>0.5 m)	Hummock grassland (50-80%)	<i>Triodia glabra, Triodia wiseana</i>		



Fulcrum photo ID 182-183

Site10

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	22/08/2021		Personnel	BD	
Zone	50	Easting	200957	Northing	7570293
Landform and soil		Rock			
Landform	Mid slope		Rock type/s	Calcrete, Limestone	
Soil type	Clay loam		Surface stone cover	50 - 75%	
Soil colour	Brown, Red		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)	
Condition		Habitat Features			
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Hummocks, Rock crevices	
Disturbance	Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Corymbia hamersleyana</i>		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Acacia arida, Melaleuca cardiophylla, Gossypium robinsonii</i>		
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	<i>Triodia wiseana</i>		



Fulcrum photo ID 184-186

Site11

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	22/08/2021		Personnel	BD	
Zone	50	Easting	200751	Northing	7570076
Landform and soil		Rock			
Landform	Mid slope		Rock type/s	Calcrete, Limestone	
Soil type	Clay loam		Surface stone cover	50 - 75%	
Soil colour	Brown, Red		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)	
Condition		Habitat Features			
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats	Rock crevices	
Disturbance	Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Corymbia hamersleyana</i>		
Mid stratum	Mid (1-2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia arida</i>		
Ground stratum	Low (>0.5 m)	Sparse hummock grassland (0.25-20%)	<i>Triodia epactia</i>		



Fulcrum photo ID 189-190

Site12

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	22/08/2021		Personnel	BD	
Zone	50	Easting	200692	Northing	7570553
Landform and soil		Rock			
Landform	Drainage line		Rock type/s	Calcrete, Laterite	
Soil type	Clay loam		Surface stone cover	50 - 75%	
Soil colour	Brown, Red		Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm)	
Condition		Habitat Features			
Quality	High quality		Water Source	Absent	
Fire History	Little or no fire evidence (>5 years)		Microhabitats		
Disturbance	Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Corymbia hamersleyana</i>		
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia arida</i>		
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	<i>Triodia epactia</i>		



Fulcrum photo ID 197-199

Site13

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	22/08/2021	Personnel	BD		
Zone	50	Easting	200165	Northing	7570508
Landform and soil		Rock			
Landform	Drainage line	Rock type/s	Calcrete, Limestone		
Soil type	Clay loam	Surface stone cover	50 - 75%		
Soil colour	Brown, Red	Surface stone size classes present	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)		
Condition		Habitat Features			
Quality	High quality	Water Source	Absent		
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Rock crevices		
Disturbance	Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Absent				
Mid stratum	Tall (>2 m)	Shrubland and/or heathland (50-80%)	<i>Acacia arida</i> , <i>Gossypium robinsonii</i> (drainage), <i>Ficus brachypoda</i> , <i>Grevillea</i>		
Ground stratum	Low (>0.5 m)	Sparse hummock grassland (0.25-20%)	<i>Triodia epactia</i>		



Fulcrum photo ID 203-206

Site14

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey				
Date	24/08/2021	Personnel	BD		
Zone	50	Easting	200167	Northing	7569915
Landform and soil		Rock			
Landform	Drainage line	Rock type/s	Limestone		
Soil type	Clay loam	Surface stone cover	50 - 75%		
Soil colour	Brown, Red	Surface stone size classes present	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)		
Condition		Habitat Features			
Quality	High quality	Water Source	Absent		
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Leaf litter, Rock crevices		
Disturbance	Weeds				
Introduced fauna	None observed				
Vegetation					
Upper stratum	Low (<10 m)	Isolated trees (<0.25%)	<i>Ficus brachypoda</i>		
Mid stratum	Tall (>2 m)	Shrubland and/or heathland (50-80%)	<i>Acacia alexandri</i> , <i>Senna artemisioides oligophylla</i> , <i>Grevillea pyramidalis</i>		
Ground stratum	Low (>0.5 m)	Sparse hummock grassland (0.25-20%)	<i>Triodia epactia</i>		



Fulcrum photo ID 211-214

Site15

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey		
Date	24/08/2021	Personnel	BD
Zone	50	Easting	200019
		Northing	7569736
Landform and soil		Rock	
Landform	Mid slope	Rock type/s	Limestone
Soil type	Clay loam	Surface stone cover	50 - 75%
Soil colour	Brown, Red	Surface stone size classes present	Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m)
Condition		Habitat Features	
Quality	High quality	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Caves, Rock crevices
Disturbance	Weeds		
Introduced fauna	None observed		
Vegetation			
Upper stratum	Low (<10 m)	Open woodland (0.25-20%)	<i>Corymbia hamersleyana</i>
Mid stratum	Tall (>2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Grevillea pyramidalis</i> , <i>Dodonaea viscosa mucronata</i>
Ground stratum	Low (>0.5 m)	Sparse hummock grassland (0.25-20%)	<i>Triodia epactia</i>



Fulcrum photo ID 215-218

Site16

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey		
Date	24/08/2021	Personnel	BD
Zone	50	Easting	199850
		Northing	7570596
Landform and soil		Rock	
Landform	Drainage line	Rock type/s	Laterite
Soil type	Clay loam	Surface stone cover	50 - 75%
Soil colour	Brown, Red	Surface stone size classes present	Stones (2 - 6 cm), Small Rocks (6 - 20 cm), Rocks (20 - 60 cm), Big Rocks (60 cm - 2 m), Boulders (>2 m)
Condition		Habitat Features	
Quality	High quality	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Rock crevices
Disturbance	Weeds		
Introduced fauna	None observed		
Vegetation			
Upper stratum	Absent		
Mid stratum	Tall (>2 m)	Open shrubland and/or heathland (20-50%)	<i>Acacia sericophylla</i> , <i>Ficus brachypoda</i> , <i>Dodonaea viscosa mucronata</i> , <i>Corymbia hamersleyana</i>
Ground stratum	Low (>0.5 m)	Sparse fernland (0.25-20%)	* <i>Bidens bipinnata</i>



Fulcrum photo ID 229-231

Site17

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey		
Date	25/08/2021	Personnel	BD
Zone	50	Easting	203613
		Northing	7582515
Landform and soil		Rock	
Landform	Plain	Rock type/s	Limestone
Soil type	Sand	Surface stone cover	0 - 5%
Soil colour	Red	Surface stone size classes present	Small Rocks (6 - 20 cm)
Condition		Habitat Features	
Quality	Very good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	Burrows, Hummocks
Disturbance	Weeds		
Introduced fauna	None observed		
Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Acacia sericophylla, Hibiscus sturtii var. platyklamys</i>
Ground stratum	Low (>0.5 m)	Open hummock grassland (20-50%)	<i>Triodia epactia, Triodia glabra</i>



Fulcrum photo ID 232-23

Site18

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey		
Date	25/08/2021	Personnel	BD
Zone	50	Easting	204011
		Northing	7582501
Landform and soil		Rock	
Landform	Plain	Rock type/s	Limestone
Soil type	Sandy clay	Surface stone cover	5 - 25%
Soil colour	Red	Surface stone size classes present	Small Stones (0.6 - 2 cm), Stones (2 - 6 cm)
Condition		Habitat Features	
Quality	High quality	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	
Disturbance	Weeds		
Introduced fauna	None observed		
Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m) to Low (<1 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Asyncho, Scaevola spinescens, Lawrencia densiflora, Atriplex semiluna</i>
Ground stratum	Low (>0.5 m)	Sparse tussock grassland (0.25-20%)	<i>*Cenchrus ciliaris</i>



Fulcrum photo ID 234-235

Site19

Project	4766 Lots 284, 505, 550 and Reserve 51970 Exmouth Biological Survey		
Date	25/08/2021	Personnel	BD
Zone	50	Easting	205123
		Northing	7582043
Landform and soil		Rock	
Landform	Plain	Rock type/s	Limestone
Soil type	Sandy loam	Surface stone cover	0 - 5%
Soil colour	Red	Surface stone size classes present	Pebbles (<0.6 cm), Small Stones (0.6 - 2 cm), Stones (2 - 6 cm), Small Rocks (6 - 20 cm)
Condition		Habitat Features	
Quality	Good	Water Source	Absent
Fire History	Little or no fire evidence (>5 years)	Microhabitats	
Disturbance	Weeds		
Introduced fauna	None observed		
Vegetation			
Upper stratum	Absent		
Mid stratum	Mid (1-2 m)	Sparse shrubland and/or heathland (0.25-20%)	<i>Acacia tetragonophylla, Acacia synchronicia</i>
Ground stratum	Low (>0.5 m)	Sparse tussock grassland (0.25-20%)	* <i>Cenchrus ciliaris</i>



Fulcrum photo ID 240-241

Appendix I

Vertebrate Fauna Inventory

Conservation Status: State - Listed under Biodiversity Conservation Act 2016 or Department of Biodiversity, Conservation and Attractions Conservation, Federal - Listed under Environmental Protection and Biodiversity Conservation Act 1999. CR - Critically Endangered, EN - Endangered, VU - Vulnerable, MI - Migratory, OS - Other Specially Protected fauna, MA - Marine, P - Listed as Priority by DBCA.

Database: NM - NatureMap, PMST - EPBC Protected Matters Search Tool, DBCA - DBCA Threatened and Priority Fauna database search, Field - Recorded during the current field survey.

Literature: A - Learmonth (Exmouth) Line Rebuild Flora and Fauna Survey (GHD, 2019) , B - Minilya-Exmouth Road Biological Survey, Main Roads WA (GHD, 2016

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Amphibian										
Pelodyridae	<i>Cyclorana maini</i>	Sheep Frog			x					
Limnodynastidae	<i>Neobatrachus aquilonius</i>	Northern Burrowing Frog			x					
Limnodynastidae	<i>Neobatrachus fulvus</i>	Tawny Trilling Frog			x					
Myobatrachidae	<i>Pseudophryne douglasi</i>	Gorge Toadlet			x					
Aves										
Acanthizidae	<i>Calamanthus campestris</i>	Rufous Fieldwren			x					x
Acanthizidae	<i>Gerygone fusca</i>	Western Gerygone			x					
Acanthizidae	<i>Gerygone tenebrosa</i>	Dusky Gerygone			x					
Acanthizidae	<i>Pyrrholaemus brunneus</i>	Redthroat			x					
Acanthizidae	<i>Smicronis brevirostris</i>	Weebill			x					
Accipitridae	<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk			x					
Accipitridae	<i>Accipiter fasciatus</i>	Brown Goshawk		MA	x					
Accipitridae	<i>Accipiter fasciatus fasciatus</i>				x					
Accipitridae	<i>Aquila audax</i>	Wedge-tailed Eagle			x					x
Accipitridae	<i>Circus approximans</i>	Swamp Harrier		MA	x					
Accipitridae	<i>Circus assimilis</i>	Spotted Harrier			x					
Accipitridae	<i>Elanus axillaris</i>	Black-shouldered Kite			x				x	x
Accipitridae	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle		MA	x					
Accipitridae	<i>Haliaeetus indus</i>	Brahminy Kite		MA	x					
Accipitridae	<i>Haliaeetus sphenurus</i>	Whistling Kite		MA	x			x	x	x
Accipitridae	<i>Hamirostra isura</i>	Square-tailed Kite							x	
Accipitridae	<i>Hamirostra melanosternon</i>	Black-breasted Buzzard			x					
Accipitridae	<i>Hieraaetus morphnoides</i>	Little Eagle			x					x
Accipitridae	<i>Milvus migrans</i>	Black Kite			x					x
Aegothelidae	<i>Aegotheles cristatus cristatus</i>				x					
Alaudidae	<i>Mirafra javanica</i>	Horsfield's Bush Lark			x					

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Alcedinidae	<i>Dacelo leachii</i>	Blue-winged Kookaburra			x					
Alcedinidae	<i>Todiramphus pyrrhopygius</i>	Red-backed Kingfisher			x					
Alcedinidae	<i>Todiramphus sanctus</i>	Sacred Kingfisher		MA	x				x	x
Alcedinidae	<i>Todiramphus sordidus pilbara</i>	Pilbara Collared Kingfisher			x					
Anatidae	<i>Anas gracilis</i>	Grey Teal			x					
Anatidae	<i>Anas platyrhynchos</i>	Mallard			x					
Anatidae	<i>Anas superciliosa</i>	Pacific Black Duck			x					
Anatidae	<i>Aythya australis</i>	Hardhead			x					
Anatidae	<i>Chenonetta jubata</i>	Australian Wood Duck (Wood Duck, Maned Duck)			x					
Anatidae	<i>Cygnus atratus</i>	Black Swan			x					
Anatidae	<i>Dendrocygna arcuata</i>	Wandering Whistling Duck (Chestnut Whistling Duck)		MA	x					
Anhingidae	<i>Anhinga novaehollandiae</i>	Australasian Darter			x					
Apodidae	<i>Apus pacificus</i>	Pacific Swift (Fork-tailed Swift)	MI	MI, MA		x				
Ardeidae	<i>Ardea alba modesta</i>	Great Egret			x					
Ardeidae	<i>Ardea intermedia</i>	Intermediate Egret		MA	x					
Ardeidae	<i>Bubulcus coromandus</i>	Eastern Cattle Egret			x					
Ardeidae	<i>Butorides striata</i>	Striated Heron (Mangrove Heron)			x					
Ardeidae	<i>Egretta garzetta</i>	Little Egret		MA	x					
Ardeidae	<i>Egretta novaehollandiae</i>	White-faced Heron			x					
Ardeidae	<i>Egretta sacra sacra</i>				x					
Ardeidae	<i>Nycticorax caledonicus</i>	Nankeen Night Heron (Rufous Night Heron)		MA	x					
Artamidae	<i>Artamus cinereus</i>	Black-faced Woodswallow			x				x	
Artamidae	<i>Artamus cinereus melanops</i>				x					
Artamidae	<i>Artamus leucorhynchus</i>	White-breasted Woodswallow			x					
Artamidae	<i>Artamus leucorhynchus leucopygialis</i>				x					
Artamidae	<i>Artamus minor</i>	Little Woodswallow			x					
Artamidae	<i>Artamus personatus</i>	Masked Woodswallow			x					
Artamidae	<i>Cracticus nigrogularis</i>	Pied Butcherbird			x			x	x	x
Artamidae	<i>Cracticus torquatus</i>	Grey Butcherbird			x					
Artamidae	<i>Gymnorhina tibicen</i>	Australian Magpie			x			x		

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Burhinidae	<i>Burhinus grallarius</i>	Bush Stone-curlew (Bush Thick-knee)			x					
Burhinidae	<i>Esacus magnirostris</i>	Beach Stone-curlew (Beach Thick-knee)		MA	x					
Cacatuidae	<i>Cacatua sanguinea</i>	Little Corella			x			x	x	x
Cacatuidae	<i>Cacatua sanguinea westralensis</i>	Western Little Corella			x					
Cacatuidae	<i>Eolophus roseicapilla</i>	Galah			x			x	x	x
Cacatuidae	<i>Nymphicus hollandicus</i>	Cockatiel			x					x
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike		MA	2				x	x
Campephagidae	<i>Lalage tricolor</i>	White-winged Triller			x					
Casuariidae	<i>Dromaius novaehollandiae</i>	Emu			x				x	x
Charadriidae	<i>Charadrius leschenaultii</i>	Greater Sand Plover	VU	VU, MI, MA	x		x			
Charadriidae	<i>Charadrius mongolus</i>	Lesser Sand Plover	EN	EN, MI, MA	x		x			
Charadriidae	<i>Charadrius ruficapillus</i>	Red-capped Plover		MA	x					
Charadriidae	<i>Charadrius veredus</i>	Oriental Plover	MI	MI, MA		x	x			
Charadriidae	<i>Euseyonis melanops</i>	Black-fronted Dotterel			x					
Charadriidae	<i>Erythronyx cinctus</i>	Red-kneed Dotterel			x					
Charadriidae	<i>Pluvialis fulva</i>	Pacific Golden Plover	MI	MI, MA			x			
Charadriidae	<i>Pluvialis squatarola</i>	Grey Plover	MI	MI, MA	x		x			
Charadriidae	<i>Vanellus tricolor</i>	Banded Lapwing			x					
Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork			x					
Columbidae	<i>Columba livia</i>	Domestic Pigeon (Rock Dove)			x	x				
Columbidae	<i>Geopelia cuneata</i>	Diamond Dove			x					x
Columbidae	<i>Geopelia humeralis</i>	Bar-shouldered Dove			x					
Columbidae	<i>Geopelia striata</i>	Zebra Dove			x					
Columbidae	<i>Geophaps plumifera</i>	Spinifex Pigeon			x					
Columbidae	<i>Ocyphaps lophotes</i>	Crested Pigeon			x			x	x	
Columbidae	<i>Phaps chalcoptera</i>	Common Bronzewing			x					
Corvidae	<i>Corvus bennetti</i>	Little Crow			x					x
Corvidae	<i>Corvus orru</i>	Torresian Crow			x				x	x
Cuculidae	<i>Centropus phasianinus</i>	Pheasant Coucal			x					
Cuculidae	<i>Chalcites basalis</i>	Horsfield's Bronze Cuckoo		MA	x				x	x

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Cuculidae	<i>Heteroscenes pallidus</i>	Pallid Cuckoo		MA	x					
Dicaeidae	<i>Dicaeum hirundinaceum</i>	Mistletoebird			x					
Dicaeidae	<i>Dicaeum hirundinaceum hirundinaceum</i>				x					
Diomedidae	<i>Thalassarche chlororhynchos</i>	Yellow-nosed Albatross	VU	MI, MA	x		x			
Estrildidae	<i>Emblema pictum</i>	Painted Finch			x					
Estrildidae	<i>Neochmia ruficauda</i>	Star Finch			x					
Estrildidae	<i>Taeniopygia guttata</i>	Zebra Finch			x			x	x	x
Falconidae	<i>Falco berigora</i>	Brown Falcon			x				x	x
Falconidae	<i>Falco cenchroides</i>	Australian Kestrel (Nankeen Kestrel)		MA	x				x	x
Falconidae	<i>Falco hypoleucos</i>	Grey Falcon	VU	VU		x				
Falconidae	<i>Falco longipennis</i>	Australian Hobby			x					x
Falconidae	<i>Falco peregrinus</i>	Peregrine Falcon	OS		x		x		x	
Fregatidae	<i>Fregata ariel</i>	Lesser Frigatebird	MI	MI, MA		x				
Glareolidae	<i>Glareola maldivarum</i>	Oriental Pratincole	MI	MI, MA	x	x	x			
Haematopodidae	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher			x					
Haematopodidae	<i>Haematopus longirostris</i>	Pied Oystercatcher			x					
Hirundinidae	<i>Cheramoeca leucosterna</i>	White-backed Swallow								x
Hirundinidae	<i>Hirundo neoxena</i>	Welcome Swallow		MA	x					
Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	MI	MI, MA		x				
Hirundinidae	<i>Petrochelidon ariel</i>	Fairy Martin			x					
Hirundinidae	<i>Petrochelidon nigricans</i>	Tree Martin		MA	x					x
Laridae	<i>Anous stolidus</i>	Common Noddy (Brown Noddy)	MI	MI, MA		x	x			
Laridae	<i>Chlidonias leucopterus</i>	White-winged Black Tern	MI	MI, MA	x		x			
Laridae	<i>Gelochelidon nilotica</i>	Gull-billed Tern	MI	MI, MA	x		x			
Laridae	<i>Hydroprogne caspia</i>	Caspian Tern	MI	MI, MA	x		x			
Laridae	<i>Larus novaehollandiae</i>	Silver Gull		MA	x					
Laridae	<i>Onychoprion anaethetus</i>	Bridled Tern	MI	MI, MA	x					
Laridae	<i>Sterna dougallii</i>	Roseate Tern	MI	MI, MA	x		x			
Laridae	<i>Sterna hirundo</i>	Common Tern	MI	MI, MA	x		x			
Laridae	<i>Sternula albifrons</i>	White-shafted Little Tern	MI	MI, MA	x		x			
Laridae	<i>Sternula nereis</i>	Fairy Tern		MA	x					
Laridae	<i>Sternula nereis nereis</i>		VU	VU		x				

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Laridae	<i>Thalasseus bengalensis</i>	Lesser Crested Tern		MA	x					
Laridae	<i>Thalasseus bergii</i>	Crested Tern (Greater Crested Tern)	MI	MI, MA	x		x			
Locustellidae	<i>Cincloramphus cruralis</i>	Brown Songlark								x
Locustellidae	<i>Cincloramphus mathewsi</i>	Rufous Songlark							x	
Locustellidae	<i>Poodytes carteri</i>	Spinifexbird			x				x	
Maluridae	<i>Amytornis whitei</i>	Rufous Grasswren								x
Maluridae	<i>Malurus assimilis</i>	Purple-backed Fairywren			x				x	x
Maluridae	<i>Malurus leucopterus</i>	White-winged Fairywren			x					x
Maluridae	<i>Stipiturus ruficeps</i>	Rufous-crowned Emu-wren			x					
Maluridae	<i>Stipiturus ruficeps ruficeps</i>				x					
Meliphagidae	<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater			x					x
Meliphagidae	<i>Certhionyx variegatus</i>	Pied Honeyeater			x					
Meliphagidae	<i>Epthianura albifrons</i>	White-fronted Chat			x					
Meliphagidae	<i>Epthianura tricolor</i>	Crimson Chat			x					
Meliphagidae	<i>Gavicalis virescens</i>	Singing Honeyeater			x			x	x	x
Meliphagidae	<i>Lichmera indistincta</i>	Brown Honeyeater			x					
Meliphagidae	<i>Lichmera indistincta indistincta</i>				x					
Meliphagidae	<i>Manorina flavigula</i>	Yellow-throated Miner			x			x	x	x
Meliphagidae	<i>Ptilotula keartlandi</i>	Grey-headed Honeyeater			x				x	
Meliphagidae	<i>Ptilotula ornata</i>	Yellow-plumed Honeyeater							x	
Meliphagidae	<i>Ptilotula penicillata</i>	White-plumed Honeyeater								x
Meliphagidae	<i>Sugomel niger</i>	Black Honeyeater							x	
Meropidae	<i>Merops ornatus</i>	Rainbow Bee-eater		MA	x				x	x
Monarchidae	<i>Grallina cyanoleuca</i>	Magpie-lark		MA	x			x	x	x
Motacillidae	<i>Anthus australis</i>	Australian Pipit							x	
Motacillidae	<i>Anthus australis australis</i>			MA						x
Motacillidae	<i>Motacilla cinerea</i>	Grey Wagtail	MI	MI, MA		x				
Motacillidae	<i>Motacilla tschutschensis</i>	Yellow Wagtail	MI	MI, MA		x				
Oceanitidae	<i>Oceanites oceanicus</i>	Wilson's Storm Petrel	MI	MI, MA	x		x			
Oreoicidae	<i>Oreoica gutturalis</i>	Crested Bellbird			x			x	x	x
Otididae	<i>Ardeotis australis</i>	Australian Bustard			x				x	x
Pachycephalidae	<i>Colluricincla harmonica kolichisi</i>				x					
Pachycephalidae	<i>Pachycephala lanioides</i>	White-breasted Whistler			x					

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Pachycephalidae	<i>Pachycephala melanura melanura</i>				x					
Pachycephalidae	<i>Pachycephala rufiventris</i>	Rufous Whistler			x					x
Pandionidae	<i>Pandion haliaetus</i>	Osprey		MI, MA		x				x
Pandionidae	<i>Pandion haliaetus cristatus</i>	Eastern Osprey	MI		x		x		x	
Pardalotidae	<i>Pardalotus rubricatus</i>	Red-browed Pardalote			x			x		
Pardalotidae	<i>Pardalotus striatus</i>	Striated Pardalote			x					
Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian Pelican		MA	x					
Petroicidae	<i>Melanodryas cucullata</i>	Hooded Robin							x	
Petroicidae	<i>Peneothello pulverulenta</i>	Mangrove Robin			x					
Petroicidae	<i>Petroica goodenovii</i>	Red-capped Robin			x					
Phaethontidae	<i>Phaethon lepturus</i>	White-tailed Tropicbird	MI	MI, MA	x		x			
Phaethontidae	<i>Phaethon rubricauda</i>	Red-tailed Tropicbird	MI, P4	MI, MA	x		x			
Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant			x					
Phalacrocoracidae	<i>Phalacrocorax varius</i>	Pied Cormorant (Australian Pied Cormorant)			x					
Phasianidae	<i>Coturnix ypsilophora</i>	Brown Quail			x			x		
Podargidae	<i>Podargus strigoides</i>	Tawny Frogmouth			x					
Podicipedidae	<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe			x					
Podicipedidae	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe (Black-throated Grebe)			x					
Pomatostomidae	<i>Pomatostomus superciliosus</i>	White-browed Babbler						x		
Pomatostomidae	<i>Pomatostomus temporalis</i>	Grey-crowned Babbler			x					
Procellariidae	<i>Ardenna carneipes</i>	Flesh-footed Shearwater	VU	MI, MA		x				
Procellariidae	<i>Ardenna pacifica</i>	Wedge-tailed Shearwater	MI	MI, MA	x		x			
Procellariidae	<i>Calonectris leucomelas</i>	Streaked Shearwater	MI	MI, MA		x				
Procellariidae	<i>Macronectes giganteus</i>	Southern Giant Petrel	MI	EN, MI, MA		x				
Procellariidae	<i>Pterodroma mollis</i>	Soft-plumaged Petrel		VU, MA		x				
Procellariidae	<i>Puffinus huttoni</i>	Hutton's Shearwater	EN	MA	x		x			
Psittaculidae	<i>Barnardius zonarius</i>	Australian Ringneck			x			x		x
Psittaculidae	<i>Barnardius zonarius zonarius</i>	Port Lincoln Parrot			x				x	
Psittaculidae	<i>Melopsittacus undulatus</i>	Budgerigar			x				x	x
Psittaculidae	<i>Pezoporus occidentalis</i>	Night Parrot	CR	EN		x				

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Psophodidae	<i>Psophodes occidentalis</i>	Western Wedgebill (Chiming Wedgebill)								x
Ptilonorhynchidae	<i>Chlamydera guttata</i>	Western Bowerbird			x					
Ptilonorhynchidae	<i>Chlamydera maculata</i>	Spotted Bowerbird			x					
Rallidae	<i>Fulica atra</i>	Eurasian Coot			x					
Rallidae	<i>Hypotaenidia philippensis</i>	Buff-banded Rail		MA	2					
Rallidae	<i>Porzana fluminea</i>	Australian Spotted Crake (Australian Crake)			x					
Rallidae	<i>Tribonyx ventralis</i>	Black-tailed Nativehen			x					
Recurvirostridae	<i>Himantopus himantopus</i>	Black-winged Stilt		MA	x					
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail			x					
Rhipiduridae	<i>Rhipidura leucophrys</i>	Willie Wagtail			x					
Rhipiduridae	<i>Rhipidura leucophrys leucophrys</i>				x					
Rhipiduridae	<i>Rhipidura phasiana</i>	Mangrove Grey Fantail (Mangrove Fantail)			x					
Rostratulidae	<i>Rostratula australis</i>	Australian Painted Snipe	EN	EN, MA		x				
Scolopacidae	<i>Actitis hypoleucos</i>	Common Sandpiper	MI	MI, MA	x	x	x			
Scolopacidae	<i>Arenaria interpres</i>	Ruddy Turnstone	MI	MI, MA	x		x			
Scolopacidae	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	MI	MI, MA	x	x	x			
Scolopacidae	<i>Calidris alba</i>	Sanderling	MI	MI, MA	x		x			
Scolopacidae	<i>Calidris canutus</i>	Red Knot	EN	EN, MI, MA		x	x			
Scolopacidae	<i>Calidris falcinellus</i>	Broad-billed Sandpiper	MI	MI, MA			x			
Scolopacidae	<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	CE, MI, MA		x	x			
Scolopacidae	<i>Calidris melanotos</i>	Pectoral Sandpiper	MI	MI, MA		x				
Scolopacidae	<i>Calidris ruficollis</i>	Red-necked Stint	MI	MI, MA	x		x			
Scolopacidae	<i>Calidris subminuta</i>	Long-toed Stint	MI	MI, MA	x		x			
Scolopacidae	<i>Gallinago stenura</i>	Pin-tailed Snipe	MI	MI, MA	x		x			
Scolopacidae	<i>Limosa lapponica</i>	Bar-tailed Godwit	MI	MI, MA	x	x	x			
Scolopacidae	<i>Limosa lapponica menzbieri</i>		CR, MI	CE		x				
Scolopacidae	<i>Limosa limosa</i>	Black-tailed Godwit	MI	MI, MA			x			
Scolopacidae	<i>Numenius madagascariensis</i>	Far Eastern Curlew (Eastern Curlew)	CR	CE, MI, MA	x	x	x			

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Scolopacidae	<i>Numenius minutus</i>	Little Curlew	MI	MI, MA	x		x			
Scolopacidae	<i>Numenius phaeopus</i>	Whimbrel	MI	MI, MA	x		x			
Scolopacidae	<i>Tringa brevipes</i>	Grey-tailed Tattler	MI, P4	MI, MA	x		x			
Scolopacidae	<i>Tringa glareola</i>	Wood Sandpiper	MI	MI, MA	x		x			
Scolopacidae	<i>Tringa nebularia</i>	Common Greenshank	MI	MI, MA	x	x	x			
Scolopacidae	<i>Tringa stagnatilis</i>	Marsh Sandpiper	MI	MI, MA	x		x			
Scolopacidae	<i>Xenus cinereus</i>	Terek Sandpiper	MI	MI, MA	x		x			
Strigidae	<i>Ninox connivens</i>	Barking Owl			x					
Threskiornithidae	<i>Platalea regia</i>	Royal Spoonbill			x					
Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy Ibis	MI	MI, MA			x			
Threskiornithidae	<i>Threskiornis spinicollis</i>	Straw-necked Ibis		MA	x					
Turnicidae	<i>Turnix velox</i>	Little Buttonquail			x					x
Zosteropidae	<i>Zosterops luteus</i>	Yellow White-eye (Canary White-eye)			x					
Mammalia										
Bovidae	<i>Bos primigenius taurus</i>	European Cattle								x
Bovidae	<i>Capra aegagrus hircus</i>	Goat				x				
Bovidae	<i>Ovis aries</i>	Sheep			x					x
Canidae	<i>Canis familiaris familiaris</i>	Dog				x				
Canidae	<i>Vulpes vulpes</i>	Red Fox				x				x
Dasyuridae	<i>Dasyurus hallucatus</i>	Northern Quoll	EN	EN		x				
Dasyuridae	<i>Pseudantechinus roryi</i>	Rory Cooper's false antechinus			x					
Dasyuridae	<i>Sminthopsis macroura</i>	Stripe-faced Dunnart			x					x
Emballonuridae	<i>Taphozous georgianus</i>	Common Sheath-tailed Bat			x					
Equidae	<i>Equus ferus caballus</i>	Horse				x		x		
Felidae	<i>Felis catus</i>	Cat			x	x				x
Leporidae	<i>Oryctolagus cuniculus</i>	Rabbit			x	x				x
Macropodidae	<i>Osphranter robustus</i>	Euro			x			x		x
Macropodidae	<i>Osphranter robustus erubescens</i>	Euro, Biggada			x					
Macropodidae	<i>Osphranter rufus</i>	Red Kangaroo, Marlu			x			x		x
Macropodidae	<i>Petrogale lateralis lateralis</i>	Black-footed Rock-wallaby	EN		x	x	x			
Muridae	<i>Mus musculus</i>	House Mouse			x	x				x
Muridae	<i>Notomys alexis alexis</i>	Spinifex Hopping-mouse			x					x
Muridae	<i>Pseudomys hermannsburgensis</i>	Sandy Inland Mouse			x					

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Muridae	<i>Rattus rattus</i>	Black Rat			x	x				
Rhinonycteridae	<i>Rhinonycteris aurantia</i>	Orange Leaf-nosed Bat	P4			x	x			
Tachyglossidae	<i>Tachyglossus aculeatus acanthion</i>	Short-beaked Echidna			x					x
Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat			x					
Vespertilionidae	<i>Vespadelus finlaysoni</i>	Finlayson's Cave Bat			x					
Reptilia										
Agamidae	<i>Ctenophorus femoralis</i>	Dune Dragon			x					x
Agamidae	<i>Ctenophorus isolepis isolepis</i>	Central Military Dragon			x					x
Agamidae	<i>Ctenophorus nuchalis</i>	Central Netted Dragon			x					
Agamidae	<i>Ctenophorus parviceps</i>	Northern Heath Dragon			x					
Agamidae	<i>Ctenophorus reticulatus</i>	Western Netted Dragon			x					
Agamidae	<i>Diporiphora adductus</i>	Carnarvon Dragon			x					
Agamidae	<i>Gowidon longirostris</i>	Long-nosed Dragon			x					x
Agamidae	<i>Lophognathus gilberti</i>	Top End Ta-Ta Dragon			x					
Agamidae	<i>Pogona minor minor</i>	Western Bearded Dragon			x					x
Carphodactylidae	<i>Nephrurus levis</i>				x					
Carphodactylidae	<i>Nephrurus levis occidentalis</i>				x					x
Diplodactylidae	<i>Crenadactylus ocellatus</i>	South-western Clawless Gecko			x					
Diplodactylidae	<i>Diplodactylus capensis</i>	Cape Range Stone Gecko	P2		x		x			
Diplodactylidae	<i>Diplodactylus conspicillatus</i>	Variable Fat-tailed Gecko			x					
Diplodactylidae	<i>Diplodactylus ornatus</i>				x					
Diplodactylidae	<i>Lucasium stenodactylus</i>				x					x
Diplodactylidae	<i>Strophurus ciliaris aberrans</i>				x					
Diplodactylidae	<i>Strophurus jeanae</i>				x					
Diplodactylidae	<i>Strophurus rankini</i>				x					
Diplodactylidae	<i>Strophurus strophurus</i>				x					
Elapidae	<i>Acanthophis wellsi</i>	Pilbara Death Adder			x					
Elapidae	<i>Brachyuropis approximans</i>				x					
Elapidae	<i>Demansia calodera</i>	Black-necked Whipsnake			x					
Elapidae	<i>Demansia psammophis cupreiceps</i>				x					x
Elapidae	<i>Ephalophis greyae</i>			MA	x					
Elapidae	<i>Furina ornata</i>	Moon Snake			x					
Elapidae	<i>Pseudechis australis</i>	Mulga Snake			x					

Family	Scientific Name	Common Name	Conservation Status		Database				Literature	
			State	Federal	NM	PMST	DBCA	Field	A	B
Scincidae	<i>Eremiascincus pallidus</i>	Western Narrow-banded Skink			x					
Scincidae	<i>Eremiascincus richardsonii</i>	Broad-banded Sand Swimmer			x					
Scincidae	<i>Lerista allochira</i>		P3		x		x			
Scincidae	<i>Lerista bipes</i>				x					x
Scincidae	<i>Lerista clara</i>				x					
Scincidae	<i>Lerista elegans</i>				x					
Scincidae	<i>Lerista lineopunctulata</i>				x					
Scincidae	<i>Lerista macropisthopus</i>				x					
Scincidae	<i>Lerista macropisthopus fusciceps</i>				x					
Scincidae	<i>Lerista miopus</i>				x					
Scincidae	<i>Lerista planiventralis</i>				x					
Scincidae	<i>Lerista planiventralis planiventralis</i>				x					x
Scincidae	<i>Menetia greyii</i>				x					
Scincidae	<i>Menetia surda</i>	Western Dwarf Skink			x					
Scincidae	<i>Morethia lineocellata</i>				x					
Scincidae	<i>Morethia ruficauda</i>				x					
Scincidae	<i>Morethia ruficauda exquisita</i>				x					
Scincidae	<i>Notoscincus ornatus ornatus</i>				x					
Scincidae	<i>Tiliqua multifasciata</i>	Central Blue-tongue			x					
Scincidae	<i>Tiliqua rugosa rugosa</i>	Bobtail			x					
Typhlopidae	<i>Anilius splendidus</i>		P2				x			
Varanidae	<i>Varanus acanthurus</i>	Spiny-tailed Goanna			x					
Varanidae	<i>Varanus brevicauda</i>	Short-tailed Pygmy Goanna			x					
Varanidae	<i>Varanus eremius</i>	Pygmy Desert Goanna			x					
Varanidae	<i>Varanus giganteus</i>	Perentie			x			x		
Varanidae	<i>Varanus gouldii</i>	Bungarra or Sand Goanna			x					x
Varanidae	<i>Varanus sp.</i>							x		
Varanidae	<i>Varanus tristis</i>	Racehorse Goanna			x					



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● people ● planet ● professional

Schedule of Modifications – Amendment 8 – Lots 505 on DP 64832, Exmouth

Section	Comments
Form 2A and section 3.2 Proposal	Remove (i) Change 'A8' to 'A11'. Under current (iii), include 'the' between 'Amend' and 'Scheme'. Add full stops to new (i) and (ii).
1.3.1 Engagement with the Shire of Exmouth	In the second sentence of the last paragraph, change to: 'This engagement included discussions regarding the future of thermal power within this proposal and the Shires concerns with emissions and impacts, mainly with regard to the noise produced by thermal stations.'
3.2 Proposal and section 5.2 Gascoyne Coast Sub-Regional Strategy and 6.3 Shire of Exmouth Local Planning Scheme No.4.	Modify and clarify that a 'Renewable Energy Facility' is capable of approval within the currently zoned Rural portion of the site.
5.4 Shire of Exmouth Local Planning Strategy 2015 – 2025	Paragraph 3, remove reference to the site having a public open space classification.
5.4.2 Industrial Strategy	Clarify how rezoning from 'light-industry' does not impact the future supply of industrial land.
6.1 Planning and Development Act 2005	Change to 'complex' amendment rather than 'standard' amendment and refer to Section 8 in-lieu of Section 7.
6.2.2 State Planning Policy 2.7 – Public Drinking Water	Review paragraph 6 and references to the subject site and lot numbers.
6.2.5 State Planning Policy 6.3 – Ningaloo Coast	Clarify how the proposal is entirely consistent with the Local Planning Strategy.
Scheme provisions	Insert scheme provisions as outlined in the table below.
Proposed Scheme Map	Identify an appropriate portion of the lot as 'A11' limited to a potential power generation facility and ancillary infrastructure further to the west of the subject site and retain the eastern portion of the 'light industry' zone, to the satisfaction of the Shires' Chief Executive Officer. Scheme maps to be inserted to the rear of the document.
Form 6A	To be inserted to the rear of the document.

No	Description of Land	Additional Use	Conditions
A11	Portion of Lot 505 on Deposited Plan 64832 as shown on the Scheme maps.	As a 'D' use <ul style="list-style-type: none"> Industry 	1. The additional use is limited to the land use of power generation facility and ancillary infrastructure within the Shire.

			<p>2. The local government may require the preparation of the following to accompany a development application:</p> <ul style="list-style-type: none">• Bushfire Management Plan;• Drainage Management Plan;• Acoustic Management Plan;• Environmental Management Plan; and• Technical environmental reports on the nature and extent of potential on and off-site impacts. <p>3. In considering an application for development approval, the local government shall consider the following matters in addition to those which it may have regard to under the Scheme:</p> <ul style="list-style-type: none">• Buffer separation distances as prescribed by the Environmental Protection Authority;• The level and extent of emissions likely to be generated by the proposed use;• Compatibility of uses internal and external to the site; and• Adequate provision of services.
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Monthly Financial Report

For the period ended

February 2022

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SHIRE OF EXMOUTH
MONTHLY FINANCIAL REPORT
(Containing the Statement of Financial Activity)
For the period ending 28 February 2022

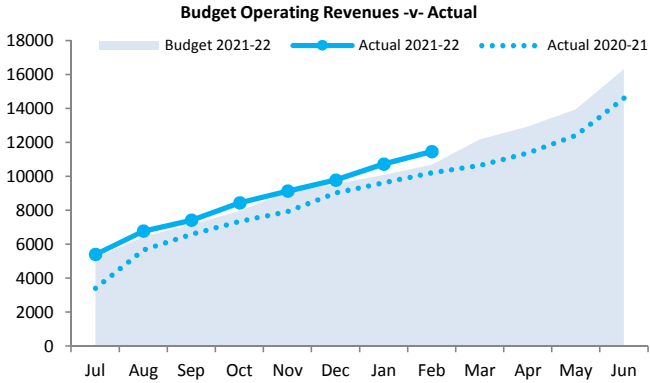
LOCAL GOVERNMENT ACT 1995
LOCAL GOVERNMENT (FINANCIAL MANAGEMENT) REGULATIONS 1996

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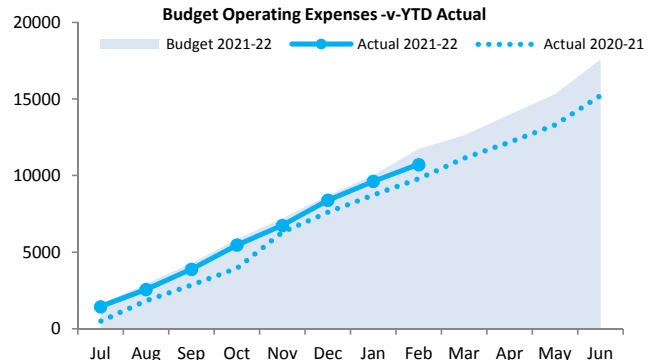
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OPERATING ACTIVITIES

OPERATING REVENUE

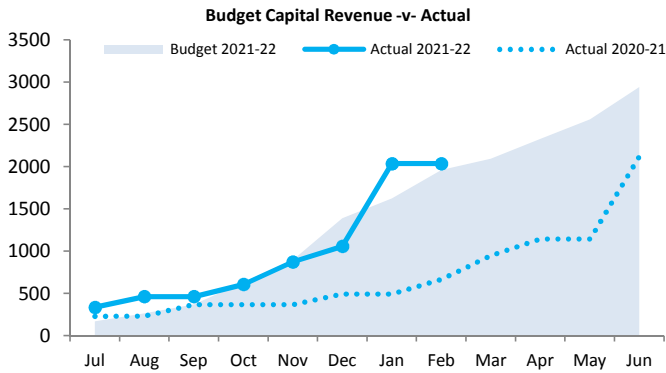


OPERATING EXPENSES

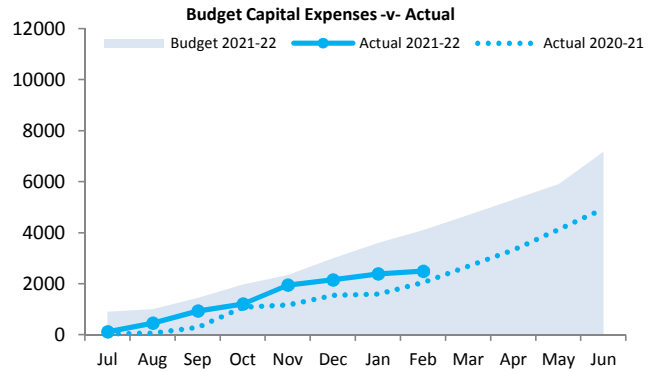


INVESTING ACTIVITIES

CAPITAL REVENUE



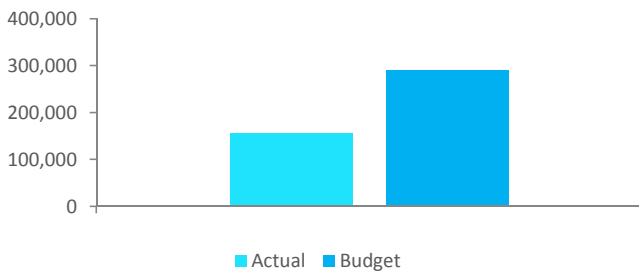
CAPITAL EXPENSES



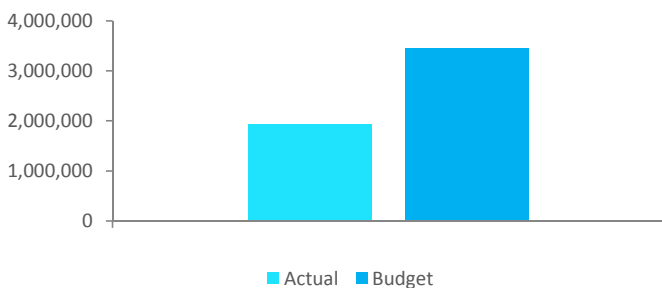
FINANCING ACTIVITIES

BORROWINGS

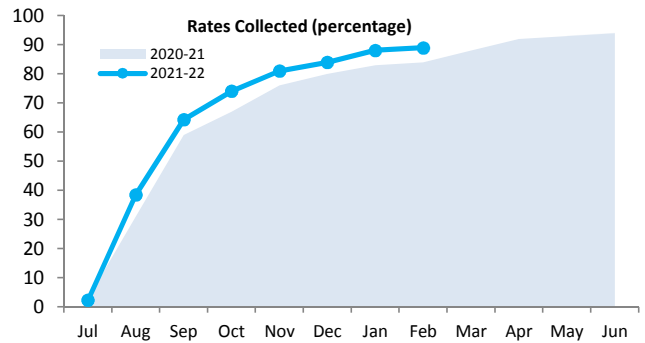
Principal Repayments



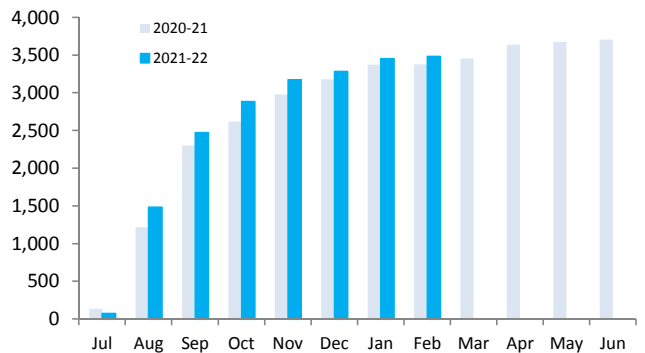
Principal Outstanding



RATES



Rates Received Amount Collected \$ ('000s)



This information is to be read in conjunction with the accompanying Financial Statements and Notes.

KEY TERMS AND DESCRIPTIONS

FOR THE PERIOD ENDED 28 FEBRUARY 2022

NATURE OR TYPE DESCRIPTIONS

REVENUE

RATES

All rates levied under the *Local Government Act 1995*. Includes general, differential, specified area rates, minimum rates, interim rates, back rates, ex-gratia rates, less discounts and concessions offered. Exclude administration fees, interest on instalments, interest on arrears, service charges and sewerage rates.

OPERATING GRANTS, SUBSIDIES AND CONTRIBUTIONS

Refers to all amounts received as grants, subsidies and contributions that are not non-operating grants.

NON-OPERATING GRANTS, SUBSIDIES AND CONTRIBUTIONS

Amounts received specifically for the acquisition, construction of new or the upgrading of identifiable non financial assets paid to a local government, irrespective of whether these amounts are received as capital grants, subsidies, contributions or donations.

REVENUE FROM CONTRACTS WITH CUSTOMERS

Revenue from contracts with customers is recognised when the local government satisfies its performance obligations under the contract.

FEES AND CHARGES

Revenues (other than service charges) from the use of facilities and charges made for local government services, sewerage rates, rentals, hire charges, fee for service, photocopying charges, licences, sale of goods or information, fines, penalties and administration fees. Local governments may wish to disclose more detail such as rubbish collection fees, rental of property, fines and penalties, other fees and charges.

SERVICE CHARGES

Service charges imposed under *Division 6 of Part 6 of the Local Government Act 1995*. *Regulation 54 of the Local Government (Financial Management) Regulations 1996* identifies these as television and radio broadcasting, underground electricity and neighbourhood surveillance services. Exclude rubbish removal charges. Interest and other items of a similar nature received from bank and investment accounts, interest on rate instalments, interest on rate arrears and interest on debtors.

INTEREST EARNINGS

Interest and other items of a similar nature received from bank and investment accounts, interest on rate instalments, interest on rate arrears and interest on debtors.

OTHER REVENUE / INCOME

Other revenue, which can not be classified under the above headings, includes dividends, discounts, rebates etc.

PROFIT ON ASSET DISPOSAL

Excess of assets received over the net book value for assets on their disposal.

EXPENSES

EMPLOYEE COSTS

All costs associate with the employment of person such as salaries, wages, allowances, benefits such as vehicle and housing, superannuation, employment expenses, removal expenses, relocation expenses, worker's compensation insurance, training costs, conferences, safety expenses, medical examinations, fringe benefit tax, etc.

MATERIALS AND CONTRACTS

All expenditures on materials, supplies and contracts not classified under other headings. These include supply of goods and materials, legal expenses, consultancy, maintenance agreements, communication expenses, advertising expenses, membership, periodicals, publications, hire expenses, rental, leases, postage and freight etc. Local governments may wish to disclose more detail such as contract services, consultancy, information technology, rental or lease expenditures.

UTILITIES (GAS, ELECTRICITY, WATER, ETC.)

Expenditures made to the respective agencies for the provision of power, gas or water. Exclude expenditures incurred for the reinstatement of roadwork on behalf of these agencies.

INSURANCE

All insurance other than worker's compensation and health benefit insurance included as a cost of employment.

LOSS ON ASSET DISPOSAL

Shortfall between the value of assets received over the net book value for assets on their disposal.

DEPRECIATION ON NON-CURRENT ASSETS

Depreciation expense raised on all classes of assets.

INTEREST EXPENSES

Interest and other costs of finance paid, including costs of finance for loan debentures, overdraft accommodation and refinancing expenses.

OTHER EXPENDITURE

Statutory fees, taxes, allowance for impairment of assets, member's fees or State taxes. Donations and subsidies made to community groups.

**STATEMENT OF FINANCIAL ACTIVITY
FOR THE PERIOD ENDED 28 FEBRUARY 2022**

BY NATURE OR TYPE

	Ref Note	Amended Budget	YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)	Var.
		\$	\$	\$	\$	%	
Opening funding surplus / (deficit)	1(c)	1,388,551	1,388,551	1,388,551	0	0.00%	
Revenue from operating activities							
Rates	5	3,639,000	3,639,000	3,634,774	(4,226)	(0.12%)	
Specified area rates	5	52,000	52,000	52,030	30	0.06%	
Operating grants, subsidies and contributions	13	3,340,500	2,206,081	2,045,349	(160,732)	(7.29%)	
Fees and charges		8,740,000	5,710,564	5,438,988	(271,576)	(4.76%)	
Interest earnings		67,000	44,664	39,173	(5,491)	(12.29%)	
Other revenue		475,500	272,624	221,685	(50,939)	(18.68%)	▼
Profit on disposal of assets	7	2,000	1,328	1,862	534	40.21%	
		16,316,000	11,926,261	11,433,861	(492,400)	(4.13%)	
Expenditure from operating activities							
Employee costs		(7,105,000)	(4,796,276)	(4,556,990)	239,286	4.99%	
Materials and contracts		(4,539,500)	(3,023,690)	(2,298,364)	725,326	23.99%	▲
Utility charges		(807,000)	(537,864)	(532,781)	5,083	0.95%	
Depreciation on non-current assets		(3,697,000)	(2,377,240)	(2,354,812)	22,428	0.94%	
Interest expenses		(68,000)	(39,328)	(35,233)	4,095	10.41%	
Insurance expenses		(521,000)	(521,000)	(521,209)	(209)	(0.04%)	
Other expenditure		(841,000)	(427,263)	(428,283)	(1,020)	(0.24%)	
Loss on disposal of assets	7	(7,000)	(4,664)	(7,342)	(2,678)	(57.42%)	
		(17,585,500)	(11,727,325)	(10,735,014)	992,311	8.46%	
Non-cash amounts excluded from operating activities	1(a)	3,702,000	2,380,576	2,360,292	(20,284)	(0.85%)	
Amount attributable to operating activities		2,432,500	2,579,512	3,059,139	479,627		
Investing activities							
Proceeds from non-operating grants, subsidies and contributions	14	2,943,000	1,961,992	2,066,432	104,440	5.32%	
Proceeds from disposal of assets	7	146,000	146,000	129,387	(16,613)	(11.38%)	
Payments for property, plant and equipment	8	(7,176,000)	(4,104,034)	(2,500,460)	1,603,574	39.07%	▲
		(4,087,000)	(1,996,042)	(304,642)	1,691,401		
Amount attributable to investing activities		(4,087,000)	(1,996,042)	(304,642)	1,691,401		
Financing Activities							
Proceeds from new debentures	10	1,660,000	0	0	0	0.00%	
Transfer from reserves	3	2,276,000	0	0	0	0.00%	
Proceeds from Community Loans		15,000	0	0	0	0.00%	
Repayment of debentures	10	(290,500)	(150,190)	(156,228)	(6,038)	4.02%	
Principal elements of Finance lease payments		(135,000)	0	0	0	0.00%	
Transfer to reserves	3	(3,259,000)	(15,847)	(15,847)	0	0.00%	
Amount attributable to financing activities		266,500	(166,037)	(172,075)	(6,038)		
Closing funding surplus / (deficit)	1(c)	551	1,805,984	3,970,973			

KEY INFORMATION

▲ ▼ Indicates a variance between Year to Date (YTD) Actual and YTD Actual data as per the adopted materiality threshold.

Refer to Note for an explanation of the reasons for the variance.

This statement is to be read in conjunction with the accompanying Financial Statements and Notes.

KEY TERMS AND DESCRIPTIONS

FOR THE PERIOD ENDED 28 FEBRUARY 2022

STATUTORY REPORTING PROGRAMS

Shire operations as disclosed in these financial statements encompass the following service orientated activities/programs.

PROGRAM NAME AND OBJECTIVES

ACTIVITIES

GOVERNANCE

To provide a decision making process for the efficient allocation of resources.

Includes the activities of members of council and the administrative support available to the council for the provision of governance of the district. Other costs relate to the task of assisting elected members and ratepayers on matters which do not concern specific council services.

GENERAL PURPOSE FUNDING

To collect revenue to allow for the provision of services.

The collection of rate revenue and the maintenance of valuation and rating records to support the collection process. General purpose government grants and interest revenue.

LAW, ORDER, PUBLIC SAFETY

To provides services to help ensure a safer as environmentally conscious community.

The provision of bushfire control services, animal control and support for emergency services, as well as the maintenance and enforcement of local laws.

HEALTH

To provide an operational framework for environmental and community health.

Maternal and Infant health, preventative service and environmental health.

EDUCATION AND WELFARE

To provide services to disadvantaged persons, the elderly, children and youth.

Maintenance on playgroup and senior citizen buildings.

HOUSING

To provide housing for staff members.

Adminstration and operation of residential housing for council staff.

COMMUNITY AMENITIES

To provide services required by the community.

Maintenance of rubbish service to residents and maintenance of sanitary landfill sites. Town planning and regional development, maintenance of cemeteries and other community amenities.

RECREATION AND CULTURE

To establish and effectively manage infrastructure and resources which will help the social wellbeing of the community.

Maintenance of public halls, centres, swimming pools, beaches, recreation centre and various sporting facilities. Provision and manintenance of parks, gardens and playgrounds. Operation of library and radio broadcasting facilities.

TRANSPORT

To provide safe, effective and efficient transport services to the community.

Construction and maintenance of roads, streets, footpaths, depot, cycleways, parking facilities and traffic control. Cleaning of streets and maintenance of street trees, street lighting etc. Administration and operation of airport and aerodrome.

ECONOMIC SERVICES

The promotion of the district to increase economic activities and the provision of building control within the shire.

Tourism, area promotion and building control.

OTHER PROPERTY AND SERVICES

To monitor and control Council's overheads operating accounts.

The provision of private works to the public and the maintenance of cost pools for plant operating, public works overheads and adminstration costs.

**STATEMENT OF FINANCIAL ACTIVITY
FOR THE PERIOD ENDED 28 FEBRUARY 2022**

STATUTORY REPORTING PROGRAMS

	Ref Note	Amended Budget	YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)	Var.
		\$	\$	\$	\$	%	
Opening funding surplus / (deficit)	1(c)	1,388,551	1,388,551	1,388,551	0	0.00%	
Revenue from operating activities							
General purpose funding - general rates	5	3,639,000	3,639,000	3,634,774	(4,226)	(0.12%)	
General purpose funding - other		1,581,000	1,071,320	616,064	(455,256)	(42.49%)	▼
Law, order and public safety		103,000	24,304	33,234	8,930	36.74%	
Health		45,500	30,320	35,741	5,421	17.88%	
Education and welfare		3,000	1,992	443	(1,549)	(77.76%)	
Housing		57,000	37,992	50,653	12,661	33.33%	
Community amenities		1,523,000	1,015,296	1,402,091	386,795	38.10%	▲
Recreation and culture		1,052,000	702,944	731,526	28,582	4.07%	
Transport		6,982,000	4,462,813	3,943,739	(519,074)	(11.63%)	▼
Economic services		1,296,500	917,640	962,965	45,325	4.94%	
Other property and services		34,000	22,640	22,631	(9)	(0.04%)	
		16,316,000	11,926,261	11,433,861	(492,400)		
Expenditure from operating activities							
Governance		(305,000)	(203,272)	(479,584)	(276,312)	(135.93%)	▼
General purpose funding		(183,500)	(122,304)	(117,030)	5,274	4.31%	
Law, order and public safety		(424,500)	(286,692)	(282,562)	4,130	1.44%	
Health		(301,500)	(203,600)	(183,737)	19,863	9.76%	
Education and welfare		(82,000)	(54,640)	(57,135)	(2,495)	(4.57%)	
Housing		(50,000)	(33,264)	(58,439)	(25,175)	(75.68%)	▼
Community amenities		(2,142,500)	(1,434,818)	(1,131,503)	303,315	21.14%	▲
Recreation and culture		(5,987,500)	(3,996,200)	(3,587,696)	408,504	10.22%	▲
Transport		(5,927,500)	(3,897,504)	(3,483,835)	413,669	10.61%	▲
Economic services		(1,600,500)	(1,066,840)	(896,789)	170,051	15.94%	▲
Other property and services		(581,000)	(428,191)	(456,704)	(28,513)	(6.66%)	
		(17,585,500)	(11,727,325)	(10,735,014)	992,311		
Non-cash amounts excluded from operating activities	1(a)	3,702,000	2,380,576	2,360,292	(20,284)	(0.85%)	
Amount attributable to operating activities		2,432,500	2,579,512	3,059,139	479,627		
Investing Activities							
Proceeds from non-operating grants, subsidies and contributions	14	2,943,000	1,961,992	2,066,432	104,440	5.32%	
Proceeds from disposal of assets	7	146,000	146,000	129,387	(16,613)	(11.38%)	
Payments for property, plant and equipment and infrastructure	8	(7,176,000)	(4,104,034)	(2,500,460)	1,603,574	39.07%	▲
Amount attributable to investing activities		(4,087,000)	(1,996,042)	(304,642)	1,691,401		
Financing Activities							
Proceeds from new debentures	10	1,660,000	0	0	0	0.00%	
Transfer from reserves	3	2,276,000	0	0	0	0.00%	
Proceeds from Community Loans		15,000	0	0	0	0.00%	
Repayment of debentures	10	(290,500)	(150,190)	(156,228)	(6,038)	4.02%	
Principal elements of Finance lease payments		(135,000)	0	0	0	0.00%	
Transfer to reserves	3	(3,259,000)	(15,847)	(15,847)	0	0.00%	
Amount attributable to financing activities		266,500	(166,037)	(172,075)	(6,038)		
Closing funding surplus / (deficit)	1(c)	551	1,805,984	3,970,973			

KEY INFORMATION

▲▼ Indicates a variance between Year to Date (YTD) Actual and YTD Actual data as per the adopted materiality threshold.

Refer to Note for an explanation of the reasons for the variance.

The material variance adopted by Council for the 2021-22 year is \$25,000 or 10.00% whichever is the greater.

This statement is to be read in conjunction with the accompanying Financial Statements and notes.

NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY

FOR THE PERIOD ENDED 28 FEBRUARY 2022

EXPLANATION OF MATERIAL VARIANCES

The material variance thresholds are adopted annually by Council as an indicator of whether the actual expenditure or revenue varies from the year to date Actual materially.

The material variance adopted by Council for the 2021-22 year is \$25,000 or 10.00% whichever is the greater.

Reporting Program	Var. \$	Var. %	Explanation of Variance
	\$	%	
Revenue from operating activities			
Operating grants, subsidies and contributions	(160,732)	(7.29%)	Timing of Fincial Assistance Grant
Fees and charges	(271,576)	(4.76%)	Airport Securiy Screening Grant affected timing of airport fees & charges
Other revenue	(50,939)	(18.68%)	Timing of Ningaloo Visitor Centre commissions
Expenditure from operating activities			
Employee costs	239,286	4.99%	Vacant positions
Materials and contracts	725,326	23.99%	Timing of various operational projects
Investing activities			
Proceeds from non-operating grants, subsidies and contributions	104,440	5.32%	Timing of projects.
Payments for property, plant and equipment	1,603,574	39.07%	See note 8.

BASIS OF PREPARATION

The financial report has been prepared in accordance with Australian Accounting Standards (as they apply to local governments and not-for-profit entities) and interpretations of the Australian Accounting Standards Board, and the *Local Government Act 1995* and accompanying regulations.

The *Local Government Act 1995* and accompanying Regulations take precedence over Australian Accounting Standards where they are inconsistent.

The *Local Government (Financial Management) Regulations 1996* specify that vested land is a right-of-use asset to be measured at cost. All right-of-use assets (other than vested improvements) under zero cost concessionary leases are measured at zero cost rather than at fair value. The exception is vested improvements on concessionary land leases such as roads, buildings or other infrastructure which continue to be reported at fair value, as opposed to the vested land which is measured at zero cost. The measurement of vested improvements at fair value is a departure from AASB 16 which would have required the Shire to measure any vested improvements at zero cost.

Accounting policies which have been adopted in the preparation of this financial report have been consistently applied unless stated otherwise. Except for cash flow and rate setting information, the financial report has been prepared on the accrual basis and is based on historical costs, modified, where applicable, by the measurement at fair value of selected non-current assets, financial assets and liabilities.

THE LOCAL GOVERNMENT REPORTING ENTITY

All funds through which the Shire controls resources to carry on its functions have been included in the financial statements forming part of this financial report.

In the process of reporting on the local government as a single unit, all transactions and balances between those funds (for example, loans and transfers between funds) have been eliminated.

All monies held in the Trust Fund are excluded from the financial statements. A separate statement of those monies appears at Note 15 to these financial statements.

SIGNIFICANT ACCOUNTING POLICES

CRITICAL ACCOUNTING ESTIMATES

The preparation of a financial report in conformity with Australian Accounting Standards requires management to make judgements, estimates and assumptions that effect the application of policies and reported amounts of assets and liabilities, income and expenses.

The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances; the results of which form the basis of making the judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

GOODS AND SERVICES TAX

Revenues, expenses and assets are recognised net of the amount of GST, except where the amount of GST incurred is not recoverable from the Australian Taxation Office (ATO). Receivables and payables are stated inclusive of GST receivable or payable. The net amount of GST recoverable from, or payable to, the ATO is included with receivables or payables in the statement of financial position. Cash flows are presented on a gross basis. The GST components of cash flows arising from investing or financing activities which are recoverable from, or payable to, the ATO are presented as operating cash flows.

ROUNDING OFF FIGURES

All figures shown in this statement are rounded to the nearest dollar.

PREPARATION TIMING AND REVIEW

Date prepared: All known transactions up to 14 September 2021

(a) Non-cash items excluded from operating activities

The following non-cash revenue and expenditure has been excluded from operating activities within the Statement of Financial Activity in accordance with Financial Management Regulation 32.

	Notes	Amended Budget	YTD Budget (a)	YTD Actual (b)
Non-cash items excluded from operating activities				
		\$	\$	\$
Adjustments to operating activities				
Less: Profit on asset disposals	7	(2,000)	(1,328)	(1,862)
Add: Loss on asset disposals	7	7,000	4,664	7,342
Add: Depreciation on assets		3,697,000	2,377,240	2,354,812
Total non-cash items excluded from operating activities		3,702,000	2,380,576	2,360,292

(b) Adjustments to net current assets in the Statement of Financial Activity

The following current assets and liabilities have been excluded from the net current assets used in the Statement of Financial Activity in accordance with *Financial Management Regulation* 32 to agree to the surplus/(deficit) after imposition of general rates.

		Last Year Closing 30 June 2021	This Time Last Year 28 February 2021	Year to Date 28 February 2022
Adjustments to net current assets				
Less: Reserves - restricted cash	3	(10,618,672)	(9,039,956)	(10,634,519)
Less: Loans receivable		(16,700)	(5,250)	(16,700)
Less: Land held for resale		0		0
Add: Borrowings	10	290,666	105,380	134,437
Add: Provisions - employee	12	712,559	769,874	712,559
Add: Lease liabilities	11	134,745	148,937	134,745
Add: Contract Liabilities		409,363	0	409,363
Total adjustments to net current assets		(9,088,039)	(8,021,015)	(9,260,115)

(c) Net current assets used in the Statement of Financial Activity

Current assets				
Cash and cash equivalents	2	12,640,020	12,747,196	12,958,889
Rates receivables	4	234,502	580,317	387,941
Receivables	4	2,196,416	1,127,965	1,505,746
Other current assets	6	114,747	88,437	192,287
Less: Current liabilities				
Payables	9	(3,137,428)	(572,969)	(398,338)
Borrowings	10	(290,666)	(105,380)	(134,437)
Contract liabilities	12	(409,363)	0	(409,363)
Lease liabilities	11	(134,745)	(148,937)	(134,745)
Provisions	12	(736,893)	(769,874)	(736,893)
Less: Total adjustments to net current assets	1(b)	(9,088,039)	(8,021,015)	(9,260,115)
Closing funding surplus / (deficit)		1,388,551	4,925,740	3,970,973

CURRENT AND NON-CURRENT CLASSIFICATION

In the determination of whether an asset or liability is current or non-current, consideration is given to the time when each asset or liability is expected to be settled. Unless otherwise stated assets or liabilities are classified as current if expected to be settled within the next 12 months, being the Council's operational cycle.

Description	Classification	Unrestricted	Restricted	Total Cash	Trust	Institution	Interest Rate	Maturity Date
		\$	\$	\$				
Cash on hand								
Petty Cash and Floats	Cash and cash equivalents	2,650	0	2,650	0			
Municipal Fund	Cash and cash equivalents	2,207,066	0	2,207,066	0	Westpac	0.00%	At Call
Reserve Fund	Cash and cash equivalents	0	2,634,519	2,634,519	0	Westpac	0.01%	At Call
Trust Fund	Cash and cash equivalents	0	0	114,654	114,654	Westpac	0.00%	At Call
Term Deposits								
Reserve Term Deposit	Cash and cash equivalents	0	1,000,000	1,000,000	0	NAB	0.38%	03/2022
Reserve Term Deposit	Cash and cash equivalents	0	1,000,000	1,000,000	0	NAB	0.38%	04/2022
Reserve Term Deposit	Cash and cash equivalents	0	3,500,000	3,500,000	0	NAB	0.28%	05/2022
Reserve Term Deposit	Cash and cash equivalents	0	2,500,000	2,500,000	0	AMP	1.00%	06/2022
Total		2,209,716	10,634,519	12,958,889	114,654			
Comprising								
Cash and cash equivalents		2,209,716	10,634,519	12,958,889	114,654			
		2,209,716	10,634,519	12,958,889	114,654			

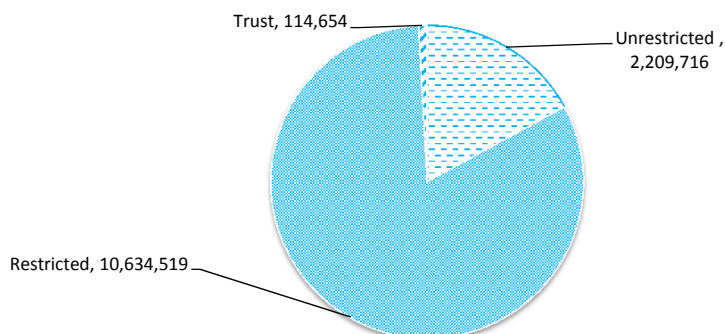
KEY INFORMATION

Cash and cash equivalents include cash on hand, cash at bank, deposits available on demand with banks and other short term highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value and bank overdrafts. Bank overdrafts are reported as short term borrowings in current liabilities in the statement of net current assets.

The local government classifies financial assets at amortised cost if both of the following criteria are met:

- the asset is held within a business model whose objective is to collect the contractual cashflows, and
- the contractual terms give rise to cash flows that are solely payments of principal and interest.

Financial assets at amortised cost held with registered financial institutions are listed in this note other financial assets at amortised cost are provided in Note 4 - Other assets.



**NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
FOR THE PERIOD ENDED 28 FEBRUARY 2022**

OPERATING ACTIVITIES

NOTE 3

CASH RESERVES

Cash backed reserve

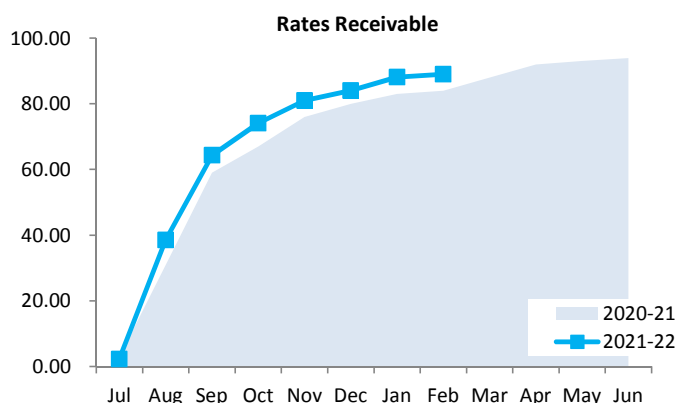
Reserve name	Opening Balance	Budget Interest Earned	Actual Interest Earned	Budget Transfers In (+)	Actual Transfers In (+)	Budget Transfers Out (-)	Actual Transfers Out (-)	Budget Closing Balance	Actual YTD Closing Balance
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Leave Reserve	699,202	3,000	1,094	0	0	0	0	702,202	700,296
Aviation Reserve	1,172,684	5,000	1,838	0	0	(84,000)	0	1,093,684	1,174,522
Building Infrastructure Reserve	81,401	0	178	0	0	0	0	81,401	81,579
Community Development Reserve	1,382,658	5,000	2,168	0	0	(18,000)	0	1,369,658	1,384,826
Community Interest Free Reserve	278,065	1,000	435	0	0	0	0	279,065	278,500
Insurance/Natural Disaster Reserve	183,974	1,000	288	0	0	0	0	184,974	184,262
Land Acquisition Reserve	1,725,802	6,000	2,604	0	0	(360,000)	0	1,371,802	1,728,406
Marina Canal Reserve	411,149	2,000	639	52,000	0	0	0	465,149	411,788
Marine Village Asset Replacement Reserve	33,442	0	52	0	0	0	0	33,442	33,494
Mosquito Management Reserve	10,161	0	16	0	0	0	0	10,161	10,177
Ningaloo Centre Reserve	257,175	0	403	38,000	0	0	0	295,175	257,578
Plant Reserve	550,296	3,000	826	529,000	0	(650,000)	0	432,296	551,122
Public Radio Infrastructure Reserve	5,185	0	8	0	0	0	0	5,185	5,193
Rehabilitation Reserve	253,435	1,000	397	0	0	0	0	254,435	253,832
Roads Reserve	901,228	4,000	1,381	0	0	0	0	905,228	902,609
Shire Staff Housing Reserve	137,092	1,000	215	900,000	0	(100,000)	0	938,092	137,307
Shire President COVID-19 Relief Fund	40,209	0	63	0	0	0	0	40,209	40,272
Swimming Pool Reserve	650,793	3,000	1,009	1,700,000	0	(57,000)	0	2,296,793	651,802
Tourism Development Reserve	358,832	1,000	546	0	0	(5,000)	0	354,832	359,378
Town Planning Scheme Reserve	21,969	0	34	0	0	0	0	21,969	22,003
Waste Management Reserve	1,054,557	4,000	1,653	0	0	(593,000)	0	465,557	1,056,210
Unspent Grants & Contributions Reserve	409,363	0	0	0	0	(409,000)	0	363	409,363
	10,618,672	40,000	15,847	3,219,000	0	(2,276,000)	0	11,601,672	10,634,519

KEY INFORMATION

In accordance with Council resolutions or adopted budget in relation to each reserve account, the purpose for which the reserves are set aside and their anticipated date of use are as follows:

Name of Reserve	Purpose of the reserve
Leave Reserve	To be used for annual and long service leave requirements.
Aviation Reserve	To be used to fund aviation improvements.
Building Infrastructure Reserve	To be used for the development, preservation and maintenance of building infrastructure with the the Shire of Exmouth.
Community Development Reserve	To be used for major community development initiatives.
Community Interest Free Reserve	To be to fund major community development projects.
Insurance/Natural Disaster Reserve	To be used for the purpose of funding insurance claims where the excess is higher than the cost of repairs in addition to any weather related insurance/WANDRRRA claims.
Land Acquisition Reserve	To be used to fund the acquisition and disposal of land and buildings and provide contributions for land development within the Shire of Exmouth.
Marina Canal Reserve (Specified Area Rates)	These funds are derived from levying specified area rate titles Marina Specified Area Rates.
Marina Village Asset Replacement Reserve	To be used for the preservation and maintenance of infrastructure related to the Exmouth Marina Village.
Mosquito Management Reserve	To be used in years where mosquito-borne disease/nuisance is greater than normal.
Ningaloo Centre Reserve	To be used for the preservation and maintenance of the Ningaloo Centre.
Plant Reserve	To be used for the purchase of major plant and equipment.
Public Radio Infrastructure Reserve	To be used to maintain the rebroadcasting infrastructure.
Rehabilitation Reserve	To be used to manage the funds associated with the environmental rehabilitation of the sand and gravel pits within the Shire of Exmouth.
Roads Reserve	To be used for the preservation and maintenance of roads.
Shire President COVID-19 Relief Fund	To be used to support the community who are severely financially affected by COVID-19.
Shire Staff Housing Reserve	To be used to fund housing for staff.
Swimming Pool Reserve	To be used to fund swimming pool upgrades.
Tourism Development Reserve	To be used to fund the development and implementation of initiatives to achieve the strategic tourism and economic developments of the Shire of Exmouth.
Town Planning Scheme Reserve	To be used fro the prupose of funding a review of the future Town Planning Scheme.
Waste & Recycle Management Reserve	To be used to fund capital and operational costs of Refuse Site including implementation of post closure plan.

Rates receivable	30 June 2021	28 Feb 2022
	\$	\$
Opening arrears previous years	510,805	234,502
Levied this year	3,489,748	3,686,804
Less - collections to date	(3,766,051)	(3,483,339)
Less - deferred rates		(50,026)
Equals current outstanding	234,502	387,941
Net rates collectable	234,502	387,941
% Collected	94.1%	88.8%

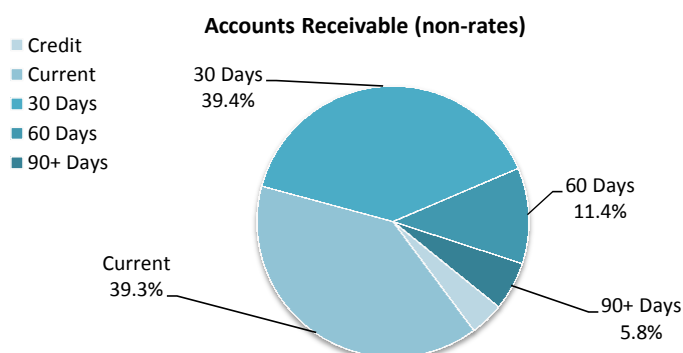


Receivables - general	Credit	Current	30 Days	60 Days	90+ Days	Total
	\$	\$	\$	\$	\$	\$
Receivables - general	(61,600)	600,518	600,880	174,564	88,772	1,403,134
Percentage	(4.4%)	42.8%	42.8%	12.4%	6.3%	
Balance per trial balance						
Sundry receivable						1,403,134
GST receivable						37,322
Community Loans						16,700
Property Service Charges						48,590
Total receivables general outstanding						1,505,746

Amounts shown above include GST (where applicable)

KEY INFORMATION

Trade and other receivables include amounts due from ratepayers for unpaid rates and service charges and other amounts due from third parties for goods sold and services performed in the ordinary course of business. Receivables expected to be collected within 12 months of the end of the reporting period are classified as current assets. All other receivables are classified as non-current assets. Collectability of trade and other receivables is reviewed on an ongoing basis. Debts that are known to be uncollectible are written off when identified. An allowance for impairment of receivables is raised when there is objective evidence that they will not be collectible.



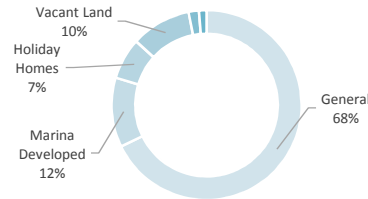
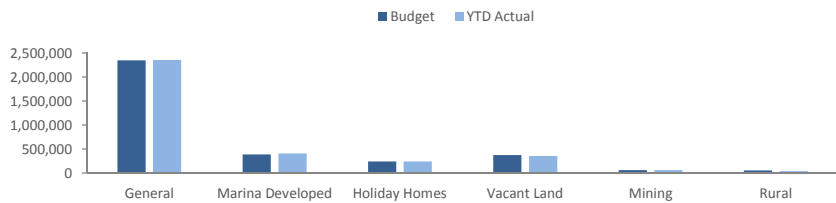
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
FOR THE PERIOD ENDED 28 FEBRUARY 2022

OPERATING ACTIVITIES
NOTE 5
RATE REVENUE

General rate revenue	Budget							YTD Actual			
	Rate in \$ (cents)	Number of Properties	Rateable Value	Rate Revenue	Interim Rate	Back Rate	Total Revenue	Rate Revenue	Interim Rates	Back Rates	Total Revenue
RATE TYPE				\$	\$	\$	\$	\$	\$	\$	\$
Gross rental value											
General	0.078700	1,204	29,784,024	2,341,000	6,000	2,000	2,349,000	2,344,003	9,869	(1,859)	2,352,013
Marina Developed	0.106200	102	3,652,407	385,000	0	0	385,000	387,886	22,825	413	411,124
Holiday Homes	0.109100	87	2,197,000	240,000	0	0	240,000	239,693	3,593	334	243,620
Vacant Land	0.157300	232	2,348,030	373,000	0	0	373,000	369,346	(13,733)	0	355,613
Unimproved value											
Mining	0.167600	11	361,992	60,000	0	0	60,000	60,670	0	0	60,670
Rural	0.083800	6	537,400	54,000	0	0	54,000	45,034	0	0	45,034
Sub-Total		1,642	38,880,853	3,453,000	6,000	2,000	3,461,000	3,446,631	22,554	(1,112)	3,468,074
Minimum payment	Minimum \$										
Gross rental value											
General	950	60	549,082	57,000	0	0	57,000	57,000	0	0	57,000
Marina Developed	950	1	0	1,000	0	0	1,000	950	0	0	950
Vacant Land	750	141	465,880	106,000	0	0	106,000	105,750	0	0	105,750
Unimproved value											
Mining	250	10	8,574	2,000	0	0	2,000	2,500	0	0	2,500
Rural	750	1	5,800	1,000	0	0	1,000	750	0	0	750
Sub-total		213	1,029,336	167,000	0	0	167,000	166,950	0	0	166,950
Total general rates							3,628,000				3,635,024
Specified area rates	Rate in \$ (cents)										
Marina Specified Area	0.014000		3,669,077	51,000	0	0	51,000	51,367	413	0	51,780
Total specified area rates			3,669,077	51,000	0	0	51,000	51,367	413	0	51,780
Total							3,679,000				3,686,804

KEY INFORMATION

Prepaid rates are, until the taxable event for the rates has occurred, refundable at the request of the ratepayer. Rates received in advance give rise to a financial liability. On 1 July 2020 the prepaid rates were recognised as a financial asset and a related amount was recognised as a financial liability and no income was recognised. When the taxable event occurs the financial liability is extinguished and income recognised for the prepaid rates that have not been refunded.



Other current assets	Opening Balance 1 July 2021	Asset Increase	Asset Reduction	Closing Balance 28 February 2022
	\$	\$	\$	\$
Inventory				
Fuel and materials on hand	18,586	88,332	(49,397)	57,521
Stock - Visitor Centre Merchandise	96,161	38,605	0	134,766
Total other current assets	114,747	126,937	(49,397)	192,287
Amounts shown above include GST (where applicable)				

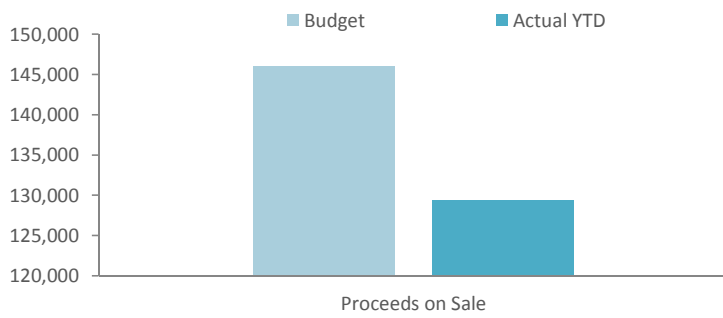
KEY INFORMATION

Inventory

Inventories are measured at the lower of cost and net realisable value.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

Asset Ref.	Asset description	Budget				YTD Actual			
		Net Book Value	Proceeds	Profit	(Loss)	Net Book Value	Proceeds	Profit	(Loss)
		\$	\$	\$	\$	\$	\$	\$	\$
	Plant and equipment								
	Transport								
	Plant replacement	146,000	146,000	0	0	130,595	129,387	1,862	(7,342)
		146,000	146,000	0	0	130,595	129,387	1,862	(7,342)



Account Description	Amended		YTD Actual	Variance (Under)/Over	Timing		Comments
	Budget	YTD Budget			Start	Finish	
Buildings - Non Specialised							
Property renewals	170,000	(280,000)	2,343	282,343	Q1	Q4	
Staff Housing	830,000	553,336	538,626	(14,710)	Q1	Q2	Claim 1-3 progress payments.
Executive House	910,000	1,000,000	878,597	(121,403)	Q1	Q1	Purchase finalised.
Buildings - Specialised							
Aviation Check-In Airconditioning	50,000	50,000	42,201	(7,799)	Q1	Q2	RFQ closed.
Depot Office Expansion	100,000	66,664	0	(66,664)	Q2	Q3	
Ningaloo Centre Solar Panels	23,000	15,328	0	(15,328)	Q4	Q4	
Ningaloo Turtle Rehabilitation Centre	68,000	45,328	0	(45,328)	Q1	Q4	
Boundary Fencing Qualing Scarp Waste Site	10,000	10,000	0	(10,000)	Q2	Q2	
Aviation Screening Point Upgrade	245,000	245,000	87,882	(157,118)	Q1	Q3	Deposit for screening tunnel.
Ningaloo Centre solar panels (accrual)	0	0	28,572	28,572			Carried over from 20/21.
Plant and equipment							
LEA Tandem Trailer	9,000	6,000	9,046	3,046	Q2	Q3	
Plant Replacement Program	650,000	72,222	123,338	51,116	Q3	Q4	Carried over from 20/21.
Waste Compactor	245,000	136,111	0	(136,111)	Q2	Q4	
Infrastructure - Roads							
Footpath Program	200,000	111,111	4,870	(106,241)	Q2	Q4	
Murat Road - Edge Repairs	335,000	335,000	291,300	(43,700)	Q2	Q2	
Yardie Creek Road - Reseal and Line Marking	1,250,000	844,444	434,128	(410,316)	Q2	Q4	
Walk Bridge Replacement	50,000	5,556	0	(5,556)	Q3	Q4	
Infrastructure - Other							
Aviation Check-In Counters Upgrade	25,000	0	281	281	Q3	Q4	
Bike Park	368,000	245,328	79,630	(165,698)	Q2	Q3	Deposit for works.
Youth Precinct	170,000	113,328	37,633	(75,695)	Q2	Q3	Deposit for play equipment.
Swimming Pool Renewal	20,000	0	16,425	16,425			
Wastewater Treatment Plant Upgrade	20,000	0	4,545	4,545	Q3	Q3	
Septage Ponds	180,000	75,000	0	(75,000)	Q2	Q3	RFQ closed.
Tip Shop	20,000	11,111	0	(11,111)	Q2	Q4	
Waste Site Setup	30,000	16,667	0	(16,667)	Q2	Q4	
Recycling bins & bring it recycling centre	75,000	62,500	13,866	(48,634)	Q2	Q3	
Town Beach Upgrade	728,000	364,000	188,231	(175,769)	Q2	Q3	
Installation and leasing 8 jetties (accrual)	0	0	(291,327)	(291,327)			Carried over from 20/21.
Boat Ramp Lighting (accrual)	0	0	1,655	1,655			Carried over from 20/21.
Overflow Ablutions (accrual)	0	0	8,619	8,619			Carried over from 20/21.
Sentinel Chicken Pen Upgrades	15,000	0	0	0	Q4	Q4	
Electrical Work at Horse Club	30,000	0	0	0	Q3	Q4	
Pool Painting & New Cover	37,000	0	0	0	Q4	Q4	
Illegal Camping Prevention	250,000	0	0	0	Q3	Q4	
Federation Park Power Renewal	18,000	0	0	0	Q3	Q4	
Chlorine Storage	45,000	0	0	0	Q4	Q4	
	7,176,000	4,104,034	2,500,460	(1,603,574)			

Payables - general	Credit	Current	30 Days	60 Days	90+ Days	Total
	\$	\$	\$	\$	\$	\$
Payables - general	0	37	(281)	247	(1,394)	(1,391)
Percentage	0%	-2.7%	20.2%	-17.8%	100.2%	
Balance per trial balance						
Sundry creditors						(1,391)
ATO liabilities						11,550
Bonds, retentions and advance bookings and ESL liability						220,143
BSL						2,246
BCITF						18,817
Trust Liabilities						114,654
Prepaid Rates						32,319
Total payables general outstanding						398,338

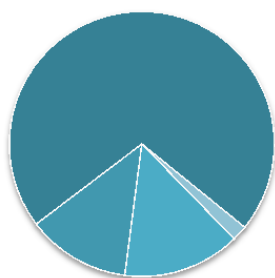
Amounts shown above include GST (where applicable)

KEY INFORMATION

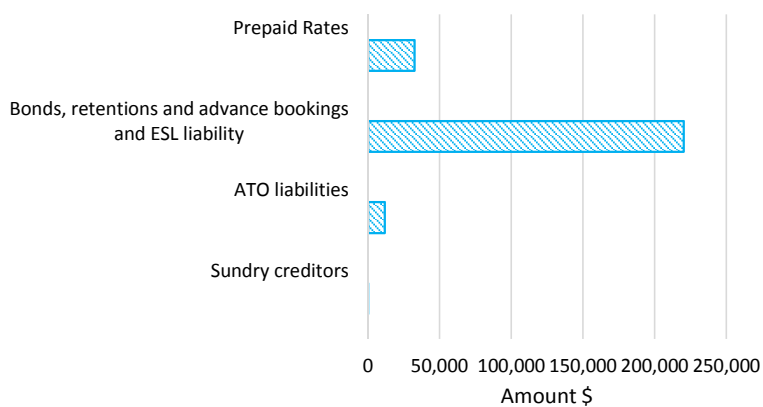
Trade and other payables represent liabilities for goods and services provided to the Shire that are unpaid and arise when the Shire becomes obliged to make future payments in respect of the purchase of these goods and services. The amounts are unsecured, are recognised as a current liability and are normally paid within 30 days of recognition.

- Credit
- Current
- 30 Days
- 60 Days
- 90+ Days

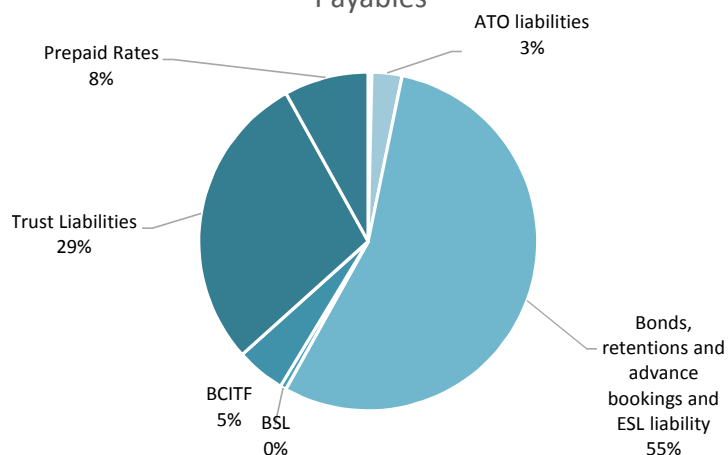
Aged Payables



Payables



Payables



Repayments - borrowings

Information on borrowings Particulars	Loan No.	1 July 2021	New Loans		Principal Repayments		Principal Outstanding		Interest Repayments	
			Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
		\$	\$	\$	\$	\$	\$	\$	\$	
Housing										
Staff Dwellings	80	480,257	0	0	47,653	72,000	432,604	408,257	14,491	21,000
Staff Dwellings	83	540,000	0	0	25,201	50,500	514,799	489,500	3,885	8,000
Staff Dwellings		0	0	860,000	0	0	0	860,000	0	0
Staff Dwellings		0	0	800,000	0	0	0	800,000	0	0
Community amenities										
Rubbish Truck	81	85,975	0	0	42,730	86,000	43,245	-25	1,036	2,000
Recreation and culture										
Ningaloo Centre	82	779,724	0	0	29,637	60,000	750,087	719,724	12,982	25,000
Other property and services										
1 Bennett Street	76	197,666	0	0	11,007	22,000	186,659	175,666	4,981	10,000
Total		2,083,622	0	1,660,000	156,228	290,500	1,927,394	3,453,122	37,376	66,000
Current borrowings		290,500					134,437			
Non-current borrowings		1,793,122					1,792,957			
		2,083,622					1,927,394			

All debenture repayments were financed by general purpose revenue.

KEY INFORMATION

All loans and borrowings are initially recognised at the fair value of the consideration received less directly attributable transaction costs. After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortised cost using the effective interest method. Fees paid on the establishment of loan facilities that are yield related are included as part of the carrying amount of the loans and borrowings.

Movement in carrying amounts

Information on leases Particulars	Lease No.	1 July 2021	New Leases		Principal Repayments		Principal Outstanding		Interest Repayments	
			Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
		\$	\$	\$	\$	\$	\$	\$	\$	\$
Housing										
25/30 Dugong Close		13,000	0	0	0	0	13,000	13,000	0	0
Transport										
Aviation - X-Ray Scanner		113,000	0	0	0	0	113,000	113,000	0	2,000
Aviation - RAAF Airport Lease		9,000	0	0	0	0	9,000	9,000	0	0
Total		135,000	0	0	0	0	135,000	135,000	0	2,000
Current lease liabilities		134,745					134,745			
Non-current lease liabilities		6,122					6,122			
		140,867					140,867			

All lease repayments were financed by general purpose revenue.

KEY INFORMATION

At inception of a contract, the Shire assesses if the contract contains or is a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. At the commencement date, a right of use asset is recognised at cost and lease liability at the present value of the lease payments that are not paid at that date. The lease payments are discounted using that date. The lease payments are discounted using the interest rate implicit in the lease, if that rate can be readily determined. If that rate cannot be readily determined, the Shire uses its incremental borrowing rate.

All contracts classified as short-term leases (i.e. a lease with a remaining term of 12 months or less) and leases of low value assets are recognised as an operating expense on a straight-line basis over the term of the lease.

Other current liabilities	Note	Opening Balance 1 July 2021	Liability transferred from/(to) non current	Liability Increase	Liability Reduction	Closing Balance 28 February 2022
		\$		\$	\$	\$
Total other liabilities		409,363	0	0	0	409,363
Provisions						
Provision for annual leave		450,789	0	0	0	450,789
Provision for long service leave		286,104	0	0	0	286,104
Total Provisions		736,893	0	0	0	736,893
Total other current liabilities		1,146,256	0	0	0	1,146,256

Amounts shown above include GST (where applicable)

KEY INFORMATION

Provisions

Provisions are recognised when the Shire has a present legal or constructive obligation, as a result of past events, for which it is probable that an outflow of economic benefits will result and that outflow can be reliably measured.

Provisions are measured using the best estimate of the amounts required to settle the obligation at the end of the reporting period.

Employee benefits

Short-term employee benefits

Provision is made for the Shire's obligations for short-term employee benefits. Short-term employee benefits are benefits (other than termination benefits) that are expected to be settled wholly before 12 months after the end of the annual reporting period in which the employees render the related service, including wages, salaries and sick leave. Short-term employee benefits are measured at the (undiscounted) amounts expected to be paid when the obligation is settled.

The Shire's obligations for short-term employee benefits such as wages, salaries and sick leave are recognised as a part of current trade and other payables in the calculation of net current assets.

Other long-term employee benefits

The Shire's obligations for employees' annual leave and long service leave entitlements are recognised as provisions in the statement of financial position.

Long-term employee benefits are measured at the present value of the expected future payments to be made to employees. Expected future payments incorporate anticipated future wage and salary levels, durations of service and employee departures and are discounted at rates determined by reference to market yields at the end of the reporting period on government bonds that have maturity dates that approximate the terms of the obligations. Any remeasurements for changes in assumptions of obligations for other long-term employee benefits are recognised in profit or loss in the periods in which the changes occur. The Shire's obligations for long-term employee benefits are presented as non-current provisions in its statement of financial position, except where the Shire does not have an unconditional right to defer settlement for at least 12 months after the end of the reporting period, in which case the obligations are presented as current provisions.

Provider	Unspent operating grant, subsidies and contributions liability					Operating grants, subsidies and contributions revenue		
	Liability	Increase in Liability	Decrease in Liability (As revenue)	Liability	Current Liability	Amended Budget Revenue	YTD Budget	YTD Revenue Actual
	1 July 2021			28 Feb 2022	28 Feb 2022			
	\$	\$	\$	\$	\$	\$	\$	\$
Operating grants and subsidies								
General purpose funding								
Grants Commission - General Purpose	0	0	0	0	0	1,400,000	933,328	473,996
Health								
CLAG - Fight the Bite	0	0	0	0	0	3,500	2,328	2,481
Community amenities								
DPLH - Coastal Hazard Risk Management and Adaption Plan	0	0	0	0	0	90,000	60,000	45,000
Recreation and culture								
Various - Community Grant	0	0	0	0	0	62,000	41,328	27,200
Transport								
Grants Commission - Untied Road Grant	0	0	0	0	0	435,000	269,121	154,864
DASCS - Domestic Airports Security Costs Support	0	0	0	0	0	1,239,000	826,000	1,235,064
Economic services								
Tourism Trainee Grant	0	0	0	0	0	40,000	26,664	37,000
Booking Platform	0	0	0	0	0	28,000	18,664	10,000
	0	0	0	0	0	3,297,500	2,177,433	1,985,605
Operating contributions								
Recreation and culture								
Various - Community Contributions & Donations	0	0	0	0	0	0	0	6,000
NADC - Reimbursements	0	0	0	0	0	0	0	682
Other property and services								
ATO - Diesel Fuel Subsidy	0	0	0	0	0	20,000	13,328	12,182
Other					0	23,000	15,320	40,880
	0	0	0	0	0	43,000	28,648	59,744
TOTALS	0	0	0	0	0	3,340,500	2,206,081	2,045,349

Provider	Unspent non operating grants, subsidies and contributions liability					Non operating grants, subsidies and contributions revenue		
	Liability	Increase in Liability	Decrease in Liability	Liability	Current Liability	Amended Budget	YTD Budget	YTD Revenue
	1 July 2021		(As revenue)	28 Feb 2022	28 Feb 2022	Revenue	Budget	Actual
	\$	\$	\$	\$	\$	\$	\$	\$
Non-operating grants and subsidies								
Recreation and culture								
Various - Recreation Facilities	0	0	0	0	0	300,000	200,000	150,000
BHP - Town Beach revitalisation	0	0	0	0	0	728,000	485,336	108,644
CSRFF - Swimming Pool Upgrade	0	0	0	0	0	0	0	0
Ningaloo Centre Solar Panels	0	0	0	0	0	860,000	573,328	1,009,696
Transport								
MRWA - Regional Road Group	0	0	0	0	0	177,000	118,000	173,946
Roads to Recovery Grant	0	0	0	0	0	270,000	180,000	267,432
Local Roads and Community Infrastructure	0	0	0	0	0	608,000	405,328	230,499
Expenditure POS Cash-in-Lieu, Murat Road footpath	0	0	0	0	0	0	0	126,215
	0	0	0	0	0	2,943,000	1,961,992	2,066,432

**NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
FOR THE PERIOD ENDED 28 FEBRUARY 2022**

**NOTE 15
TRUST FUND**

Funds held at balance date which are required by legislation to be credited to the trust fund and which are not included in the financial statements are as follows:

Description	Opening Balance 1 July 2021	Amount Received	Amount Paid	Closing Balance 28 Feb 2022
	\$	\$	\$	\$
Cash in Lieu POS	171,855	0	(126,215)	45,640
Bond Deed Exmouth Marina Holdings	18,186	0	0	18,186
Exmouth Volunteer Fire & Rescue	50,828	0	0	50,828
	240,869	0	(126,215)	114,654

MONTHLY LIST OF PAYMENTS - FEBRUARY 2022

Municipal Account:

Cheque numbers 13808-13810	\$	1,190.00
Direct Debits and EFT Payments EFT21877-EFT22052	\$	781,477.05
Credit Card Purchases	\$	9,731.30
Total Municipal Account	\$	792,398.35

Trust Account:

Cheque number	\$	-
EFT Payments	\$	-
Total Trust Account	\$	-

TOTAL PAYMENTS - FEBRUARY 2022 **\$ 792,398.35**

Reference	Date	Name	Description	Municipal Account	Trust Account
13808	02/02/2022	DEPARTMENT OF TRANSPORT - EXMOUTH	SPECIAL SERIES NUMBER PLATE	200.00	
13809	04/02/2022	WA COUNTRY HEALTH SERVICE - MIDWEST	RECRUITMENT COSTS	990.00	
13810	17/02/2022	DEPARTMENT OF TRANSPORT - EXMOUTH	ANNUAL COMMERCIAL JETTY RENEWAL FEE	790.80	
			TOTAL CHEQUES	\$ 1,190.00	\$ -
DD7183.1	01/02/2022	HP FINANCIAL SERVICES	LEASE PAYMENT	4367.00	
DD7183.2	01/02/2022	WESTNET PTY LTD	MONTHLY INTERNET CHARGES - FEB 2022	69.99	
DD7194.1	09/02/2022	SUPERANNUATION	PAYROLL DEDUCTIONS	39960.57	
DD7258.1	13/02/2022	TELSTRA CORPORATION	TELSTRA MONTHLY ACCOUNT JANUARY 2022	973.51	
DD7221.1	14/02/2022	MESSAGE4U PTY LTD	MESSAGE MEDIA BUNDLE FEB 2022	44.00	
DD7224.1	15/02/2022	TELAIR PTY LTD	MONTHLY AIRPORT INTERNET CHARGES - FEB 2022	743.48	
DD7224.2	15/02/2022	TELSTRA CORPORATION	MONTHLY SEWERAGE FARM BROADBAND ACCOUNT	69.95	
DD7232.1	16/02/2022	PAYMATE	PAYMATE MONTHLY SUBSCRIPTION - WATER DISPENSER FEB 22	165.00	
DD7242.1	22/02/2022	NAYAX	AIRPORT VENDING MACHINE MONTHLY SERVICE FEE - FEB 2022	54.34	
DD7230.1	23/02/2022	WESTERN AUSTRALIAN TREASURY CORP.	LOAN PAYMENT	7768.00	
DD7235.1	23/02/2022	SUPERANNUATION	PAYROLL DEDUCTIONS	40735.60	
DD7246.1	25/02/2022	WESTNET PTY LTD	MONTHLY INTERNET CHARGES - FEB 2022	49.99	
DD7258.2	26/02/2022	TELSTRA CORPORATION	TELSTRA MAIN ACCOUNT - FEB 2022	7277.16	
			TOTAL DIRECT DEBIT PAYMENTS	\$ 102,278.59	\$ -
EFT21877	02/02/2022	RATEPAYER	RATES REFUND	657.90	
EFT21878	02/02/2022	EDGE PLANNING AND PROPERTY (C.N. THOMPSON & S.D. THOMPSON T/AS)	PLANNING SERVICES FOR NOVEMBER AND DECEMBER 2021	250.80	
EFT21879	02/02/2022	EXMOUTH WHOLESALERS	STAFF RECEPTION	90.00	
EFT21880	02/02/2022	MANDALAY TECHNOLOGIES PTY LTD	WASTE MANAGEMENT SOFTWARE	2335.68	
EFT21881	02/02/2022	RATEPAYER	RATES REFUND	1201.00	
EFT21882	02/02/2022	PLE COMPUTERS	IT EQUIPMENT	299.00	
EFT21883	02/02/2022	SYSTEMS EDGE MANAGEMENT SERVICES PTY LTD T/A PRACSYS	50% DEPOSIT, ANALYSIS OF SWIMMING POOL REDEVELOPMENT PROJECT	8241.20	
EFT21884	02/02/2022	WATER CORPORATION	UTILITIES	30267.53	
EFT21885	04/02/2022	TELSTRA CORPORATION	TELSTRA MAIN ACCOUNT DECEMBER 2021	7380.71	
EFT21886	04/02/2022	ABCO PRODUCTS PTY LTD	20 X SANITARY BINS	2651.56	
EFT21887	04/02/2022	AFFORDABLE SIGNS	BRASS NAME PLATES	176.00	
EFT21888	04/02/2022	AMPAC DEBT RECOVERY	DEBT RECOVERY EXPENSES	596.86	
EFT21889	04/02/2022	AUSTRALIA POST	AUSTRALIA POST MONTHLY ACCOUNT	1639.59	

Reference	Date	Name	Description	Municipal Account	Trust Account
EFT21890	04/02/2022	BLUEBONE MUSIC	LIVE MUSIC FOR INTERNATOINAL VOLUNTEERS DAY 2021 EVENT	400.00	
EFT21891	04/02/2022	BOYA EQUIPMENT	PLANT PARTS	33.56	
EFT21892	04/02/2022	CAPRICORN EXTINGUISHERS	FIRE EXTINGUISHER SERVICE	827.10	
EFT21893	04/02/2022	CAPRICORN PEST CONTROL	PEST CONTROL SHIRE OFFICES	495.00	
EFT21894	04/02/2022	CARNARVON MOTOR GROUP	PURCHASE OF VEHICLE	68777.82	
EFT21895	04/02/2022	CORAL COAST SHADE SAILS	STAFF HOUSING MAINTENANCE	1650.00	
EFT21896	04/02/2022	EVENTS INDUSTRY ASSOCIATION(WA) INCORPORATED	EIA MEMBERSHIP - NINGALOO CENTRE	500.00	
EFT21897	04/02/2022	EXMOUTH FUEL SUPPLIES	POOL BBQ GAS BOTTLE	47.00	
EFT21898	04/02/2022	EXMOUTH HARDWARE & BUILDING SUPPLIES	MULCH	3163.36	
EFT21899	04/02/2022	EXMOUTH VET CLINIC	VETINARY SERVICES FOR CHICKEN	178.05	
EFT21900	04/02/2022	EXMOUTH WHOLESALERS	AIRPORT VENDING MACHINE MERCHANDISE	3822.78	
EFT21901	04/02/2022	EXY PLUMBING & CONTRACTING	REPAIR & REPLACE PARTS TO NINGALOO CENTRE CAFE SENSOR BASIN	3268.05	
EFT21902	04/02/2022	EXMOUTH TYRE & DIESEL SERVICES GREY EAGLE HOLDINGS PTY LTD T/A	PLANT TYRES	2470.00	
EFT21903	04/02/2022	FIRE SERVICES AUSTRALIA (WA) PTY LTD	MONTHLY TESTING OF FIRE SERVICES	444.31	
EFT21904	04/02/2022	GASCOYNE OFFICE EQUIPMENT	RICOH MONTHLY SERVICE AGREEMENT DECEMBER 2021	2403.31	
EFT21905	04/02/2022	IXOM OPERATIONS PTY LTD	70KG CHLORINE GAS BOTTLES	3787.08	
EFT21906	04/02/2022	KAYFER DESIGNS	DESIGN AND ARCHITECTURAL DRAWINGS FOR TENDER DOCUMENTATION	3990.00	
EFT21907	04/02/2022	RATEPAYER	BUILDING INCENTIVE PAYMENT	20000.00	
EFT21908	04/02/2022	LANDGATE	CERTIFICATE OF TITLE COPIES	210.64	
EFT21909	04/02/2022	MUMBY'S AUTO ELECTRICAL AND AIR CONDITIONING	PLANT MAINTENANCE	914.00	
EFT21910	04/02/2022	McLEODS BARRISTERS AND SOLICITORS	LEGAL FEES	176.00	
EFT21911	04/02/2022	NETWORK POWER SOLUTIONS PTY LTD	REPAIR AQUARIUM CHILLER	555.00	
EFT21912	04/02/2022	NGT GLOBAL PTY LTD T/AS VICTORY FREIGHTLINES	FREGHT FOR AQUARIUM	716.50	
EFT21913	04/02/2022	NINGALOO CARAVAN AND HOLIDAY PARK (PHOBOS NOMINEES)	UTILITIES	1131.36	
EFT21914	04/02/2022	NINGALOO WATER & ICE	15L WATER BOTTLES FOR DEPOT	96.00	
EFT21915	04/02/2022	OCTAGON LIFTS	ANNUAL LIFT SERVICE AT NINGALOO CENTRE	4526.31	
EFT21916	04/02/2022	PISCES ENTERPRISES PTY LTD	ANIMAL FOOD	154.12	
EFT21917	04/02/2022	PSCP INVESTMENTS PTY LTD T/A FINISHING WA	BINDING COUNCIL MINUTES	228.80	
EFT21918	04/02/2022	QUALITY PRESS (PREVIOUSLY CLOCKWORK)	BUSINESS CARDS FOR SHIRE PRESIDENT	192.50	
EFT21919	04/02/2022	RAY WHITE TRUST ACCOUNT	RENT FOR STORAGE UNIT - 15/02 - 14/03	383.66	
EFT21920	04/02/2022	EMPLOYEE	STAFF REIMBURSEMENT	632.02	
EFT21921	04/02/2022	SCOPE BUSINESS IMAGING	PREVENTATIVE SERVICE PLAN	1727.34	
EFT21922	04/02/2022	STATE LIBRARY OF WESTERN AUSTRALIA	FREIGHT RECOUP	448.71	
EFT21923	04/02/2022	STATEWIDE VEHICLE HOIST SERVICE WA	SERVICE & REPAIR VEHICLE HOIST	2893.00	
EFT21924	04/02/2022	RATEPAYER	BUILDING INCENTIVE PAYMENT	20000.00	
EFT21925	04/02/2022	TACKLE WORLD EXMOUTH (BLUE WATER)	FISH FOOD FOR AQUARIUM	682.73	
EFT21926	04/02/2022	TOLL TRANSPORT PTY LTD	FREIGHT SERVICES	432.04	
EFT21927	04/02/2022	TECHWEST	SECURITY MONITORING SYSTEM - JANUARY 2022	132.00	
EFT21928	04/02/2022	WA RETURN RECYCLE RENEW LIMITED	BAGS FOR CONTAINER FOR CHANGE PROGRAM	770.00	
EFT21929	04/02/2022	WORKWEAR GROUP PTY LTD	STAFF UNIFORMS	530.90	
EFT21930	04/02/2022	LGISWA	ACTUAL WAGES ADJUSTMENT FOR PERIOD 30/6/20-30/6/21	11782.62	
EFT21931	11/02/2022	AQUATIC ADVENTURE EXMOUTH	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	3111.00	
EFT21932	11/02/2022	BIRDS EYE VIEW NINGALOO	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	610.30	
EFT21933	11/02/2022	CAPE IMMERSION TOURS	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	1623.50	

Reference	Date	Name	Description	Municipal Account	Trust Account
EFT21934	11/02/2022	COASTAL ADVENTURE TOURS	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	752.25	
EFT21935	11/02/2022	CORAL BAY CHARTERS & GLASS BOTTOM BOATS	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	1657.50	
EFT21936	11/02/2022	CORAL BAY ECOTOURS	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	1281.80	
EFT21937	11/02/2022	CRUISE NINGALOO PTY LTD	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	1071.00	
EFT21938	11/02/2022	DEPARTMENT OF BIODIVERSITY, CONSERVATION AND ATTRACTIONS - EXMOUTH	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	4152.25	
EFT21939	11/02/2022	DIVE NINGALOO	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	5474.00	
EFT21940	11/02/2022	EXMOUTH ADVENTURE COMPANY	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	373.15	
EFT21941	11/02/2022	EXMOUTH BUS CHARTERS	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	119.00	
EFT21942	11/02/2022	EXMOUTH ESCAPE RESORT	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	433.50	
EFT21943	11/02/2022	NINGALOO AVIATION	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	884.00	
EFT21944	11/02/2022	NINGALOO CARAVAN AND HOLIDAY PARK (PHOBOS NOMINEES)	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	2592.70	
EFT21945	11/02/2022	NINGALOO CORAL BAY - BAYVIEW	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	2052.75	
EFT21946	11/02/2022	NINGALOO ECOLOGY CRUISES	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	6120.00	
EFT21947	11/02/2022	NINGALOO REEF DIVE	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	548.25	
EFT21948	11/02/2022	NINGALOO REEF TO RANGE TOURS	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	595.00	
EFT21949	11/02/2022	POTSHOT RESORT HOTEL	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	1168.75	
EFT21950	11/02/2022	RAC TOURISM ASSETS PTY LTD	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	350.20	
EFT21951	11/02/2022	SHIRE OF EXMOUTH	NINGALOO VISITOR CENTRE COMMISSION FOR OPERATOR BOOKINGS JANUARY 2022	6822.20	
EFT21952	11/02/2022	VIEW NINGALOO	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	3305.65	
EFT21953	11/02/2022	YARDIE CREEK BOAT TOURS	NINGALOO VISITOR CENTRE OPERATOR PAYMENTS JANUARY 2022	382.50	
EFT21954	11/02/2022	ADDICTED2FISH	AQUARIUM PARTS	3693.55	
EFT21955	11/02/2022	AUSTRALIAN TAX OFFICE (PAYG)	PAYROLL DEDUCTION	43170.98	
EFT21956	11/02/2022	BLACKWOODS (J.BLACKWOOD & SON PTY LTD)	EQUIPMENT FOR AQUARIUM	2350.97	
EFT21957	11/02/2022	BOOEASY PTY LTD	NVC BOOKINGS COMMISSION FOR JANUARY 2022	1000.58	
EFT21958	11/02/2022	BOYA EQUIPMENT	DEPOT PARTS	187.87	
EFT21959	11/02/2022	BREATHALYSER SALES & SERVICE	REPLACEMENT BREATHALYSER	731.50	
EFT21960	11/02/2022	CAPRICORN EXTINGUISHERS	SHIRE HOUSING - FIRE EXTINGUISHER SERVICE	49.50	
EFT21961	11/02/2022	CARNARVON MOTOR GROUP	REVERSING CAMERA	506.57	
EFT21962	11/02/2022	CASTROL AUSTRALIA PTY LTD	DEPOT CONSUMABLES	473.00	
EFT21963	11/02/2022	CHADSON ENGINEERING PTY LTD	SPRAY PARK CHLORINE TABLETS	207.90	
EFT21964	11/02/2022	DEPARTMENT OF DEFENCE - TREASURY AND BANKING	AIRPORT UTILITIES	30376.93	
EFT21965	11/02/2022	ERGOLINK	OFFICE CHAIR	299.81	
EFT21966	11/02/2022	EVA CROSS	NVC MERCHANDISE	710.00	
EFT21967	11/02/2022	EXY PLUMBING & CONTRACTING	PLUMBING WORKS	722.16	
EFT21968	11/02/2022	FIRE PROTECTION ASSOCIATION (FPA) AUSTRALIA	EMPLOYEE TRAINING	2600.00	
EFT21969	11/02/2022	GREAT SOUTHERN FUEL SUPPLIES - GERALDTON	BULK FUEL PURCHASE	24110.67	
EFT21970	11/02/2022	HESPERIAN PRESS	NVC MERCHANDISE	1616.95	
EFT21971	11/02/2022	RATEPAYER	BUILDING INCENTIVE PAYMENT	20000.00	
EFT21972	11/02/2022	RATEPAYER	RATES REFUND	812.05	
EFT21973	11/02/2022	KAYFER DESIGNS	SANTOS YOUTH PRECINCT DESIGN	740.00	
EFT21974	11/02/2022	KLEENIT PTY LTD	FINAL PUBLIC AMENITIES CLEANING CONTRACT F/E 9/1/22	7062.00	
EFT21975	11/02/2022	RATEPAYER	RATES REFUND	491.54	
EFT21976	11/02/2022	LOCAL GOVT RACING & CEMETERIES EMP UNION	PAYROLL DEDUCTION	19.40	
EFT21977	11/02/2022	MARK'S SIGNS	SHIRE HOUSING - POOL SERVICE JANUARY 2022	696.30	

Reference	Date	Name	Description	Municipal Account	Trust Account
EFT21978	11/02/2022	MOON BAY TRADING CO PTY LTD T/A SML SECURITY COMMUNICATIONS & FIRE	AIRPORT AND HELIPORT CCTV CAMERA SYSTEMS	330.00	
EFT21979	11/02/2022	MOORE AUSTRALIA (WA) PTY LTD	COMPLIANCE AUDIT REGULATION 5 AND 17	21081.37	
EFT21980	11/02/2022	NETWORK POWER SOLUTIONS PTY LTD	ELECTRICAL WORKS (POWERPOLE KRAIT ST PARK & VARIOUS MAINTENANCE)	24732.50	
EFT21981	11/02/2022	NUTRIEN AG SOLUTIONS LTD	CHEMICALS	4598.98	
EFT21982	11/02/2022	PATHWEST LABORATORY WA	RECRUITMENT COSTS	70.00	
EFT21983	11/02/2022	PISCES ENTERPRISES PTY LTD	TERRARIUM FOOD	435.91	
EFT21984	11/02/2022	PROPERTY VALUATION & ADVISORY (WA) PTY LTD	DESKTOP RENTAL ASSESSMENT SHIRE BUILDING	3300.00	
EFT21985	11/02/2022	SIGMA CHEMICALS	POOL CHEMICALS	590.70	
EFT21986	11/02/2022	SPECIALISED & PRECISION ENGINEERING	PLANT REPAIRS	1802.35	
EFT21987	11/02/2022	TANK STREAM DESIGN PTY LTD	NVC MERCHANDISE	12346.61	
EFT21988	11/02/2022	THE RIGGING SHED	DEPOT PARTS	2119.70	
EFT21989	11/02/2022	TIFFANY CLITHEROE T/AS T-HEROE DESIGNS	NVC MERCHANDISE	1864.50	
EFT21990	17/02/2022	WATER CORPORATION	UTILITIES	786.96	
EFT21991	17/02/2022	ABCO PRODUCTS PTY LTD	CONSUMABLES	813.52	
EFT21992	17/02/2022	AERODROME MANAGEMENT SERVICES PTY LTD (AMS)	ASIC RENEWAL FOR STAFF	920.00	
EFT21993	17/02/2022	AMPAC DEBT RECOVERY	DEBT RECOVERY EXPENSES (RECOVERABLE)	854.28	
EFT21994	17/02/2022	ATOM SUPPLY / GERALDTON INDUSTRIAL SUPPLIES	DEPOT PARTS	223.40	
EFT21995	17/02/2022	BLUE MEDIA EXMOUTH	FRAMED IMAGE	475.00	
EFT21996	17/02/2022	BOYA EQUIPMENT	DEPOT PARTS	932.80	
EFT21997	17/02/2022	CAPRICORN PEST CONTROL	PEST CONTROL AT NINGALOO CENTRE	2486.00	
EFT21998	17/02/2022	CARNARVON MOTOR GROUP	PLANT PARTS	572.86	
EFT21999	17/02/2022	CARROLL & RICHARDSON FLAGWORLD PTY LTD	SHIRE FLAGS	1083.50	
EFT22000	17/02/2022	EMPLOYEE	EMPLOYEE REIMBURSEMENT	522.72	
EFT22001	17/02/2022	CORSIGN WA PTY LTD	DEPOT PARTS	813.56	
EFT22002	17/02/2022	DAVID GRAY & CO PTY LTD	PURCHASE OF 240L BINS AND BIN PARTS	1437.48	
EFT22003	17/02/2022	DUALCO CONTRACTING (WA) PTY LTD	DEGASS FRIDGE/FREEZERS	1183.93	
EFT22004	17/02/2022	EXMOUTH BETTA HOME LIVING	CORDLESS VACUUM FOR DEPOT	169.00	
EFT22005	17/02/2022	EXMOUTH BUS CHARTERS	AIRPORT SHUTTLE SERVICE FEE FEBRUARY 2022	6000.00	
EFT22006	17/02/2022	EXMOUTH EXCAVATIONS	WASTE WATER PLANT MAINTENANCE	6950.00	
EFT22007	17/02/2022	EXMOUTH HARDWARE & BUILDING SUPPLIES	BUILDING HARDWARE ACCOUNT JANUARY 2022	2715.50	
EFT22008	17/02/2022	EXMOUTH INDUSTRIAL SERVICES	PLANT PARTS	254.28	
EFT22009	17/02/2022	EXMOUTH NEWSAGENCY & TOYWORLD	MONTHLY NEWSAGENCY ACCOUNT	91.70	
EFT22010	17/02/2022	EXMOUTH VET CLINIC	ASSISTANCE FOR CHICKEN	72.05	
EFT22011	17/02/2022	EXMOUTH WHOLESALERS	CONSUMABLES	2146.23	
EFT22012	17/02/2022	EXY PLUMBING & CONTRACTING	WASTE TREATMENT FARM PARTS	6395.94	
EFT22013	17/02/2022	HT CLEANING SERVICES PTY LTD	NINGALOO CENTRE CLEANING	13670.98	
EFT22014	17/02/2022	INMARSAT AUSTRALIA PTY LTD	RANGER SATELLITE MONTHLY SERVICES	81.05	
EFT22015	17/02/2022	IXOM OPERATIONS PTY LTD	CHLORINE GAS BOTTLES MONTHLY SERVICE FEES	1473.12	
EFT22016	17/02/2022	MARKETFORCE	ADVERTISING	2813.06	
EFT22017	17/02/2022	MUMBY'S AUTO ELECTRICAL AND AIR CONDITIONING	PLANT MAINTENANCE	302.60	
EFT22018	17/02/2022	NETWORK POWER SOLUTIONS PTY LTD	SHIRE DEPOT MAINTENANCE	291.00	
EFT22019	17/02/2022	NINGALOO BAKEHOUSE	AUSTRALIA DAY CELEBRATIONS CATERING	300.00	
EFT22020	17/02/2022	NINGALOO COOKING STUDIO	CATERING FOR CLUBS WORKSHOP	210.00	
EFT22021	17/02/2022	OFFICEWORKS	STATIONERY ORDER	1995.07	

Reference	Date	Name	Description	Municipal Account	Trust Account
EFT22022	17/02/2022	PERITUS TECHNOLOGY PTY LTD	AIRPORT PARKING TRANSACTION FEES DECEMBER 2021	268.28	
EFT22023	17/02/2022	QUBE LOGISTICS (AUST) PTY LTD	FREIGHT	1797.74	
EFT22024	17/02/2022	RAY WHITE TRUST ACCOUNT	STORAGE UNIT RENT	383.66	
EFT22025	17/02/2022	ROYAL LIFE SAVING SOCIETY WA INC.	LIFEGUARD BUMBAGS	165.00	
EFT22026	17/02/2022	SCENT AUSTRALIA PTY LTD	MONTHLY AMBIENT SCENTING FOR NINGALOO CENTRE	143.00	
EFT22027	17/02/2022	SEEK LIMITED	RECRUITMENT COSTS	291.50	
EFT22028	17/02/2022	SETON AUSTRALIA	DEPOT MASKS	5119.95	
EFT22029	17/02/2022	SIGMA CHEMICALS	SWIMMING POOL SUPPLIES	1093.50	
EFT22030	17/02/2022	SMITHS DETECTION (AUSTRALIA) PTY LTD	AIRPORT CONSUMABLES	3025.00	
EFT22031	17/02/2022	SPECIALISED & PRECISION ENGINEERING	PLANT MAINTENANCE	88.40	
EFT22032	17/02/2022	EMPLOYEE	STAFF PPE	122.95	
EFT22033	17/02/2022	STEPHEN MICHAEL FOUNDATION	COMMUNITY AND SPORTING GRANT	1650.00	
EFT22034	17/02/2022	SUNNY INDUSTRIAL BRUSHWARE	PARTS FOR PLANT	465.19	
EFT22035	17/02/2022	SYSTEMS EDGE MANAGEMENT SERVICES PTY LTD T/A PRACSYS	50% FINAL COST BENEFIT ANALYSIS REPORT POOL REDEVELOPMENT	8241.20	
EFT22036	17/02/2022	TANK STREAM DESIGN PTY LTD	NVC MERCHANDISE	495.35	
EFT22037	17/02/2022	THE HONDA SHOP	DEPOT PARTS	1265.00	
EFT22038	17/02/2022	TRILITY SOLUTIONS T/AS HYDRAMET PTY LTD	SWIMMING POOL PARTS	287.76	
EFT22039	17/02/2022	VANGUARD PRESS	NVC HOLIDAY PLANNER JANUARY 2022 COSTS	406.65	
EFT22040	17/02/2022	VISIMAX	RANGER SUPPLIES	343.97	
EFT22041	17/02/2022	VISUAL CONTRAST	GRAPHIC DESIGN FOR NC	1034.00	
EFT22042	17/02/2022	WA HOLIDAY GUIDE PTY LTD	NVC BOOKING FEES DECEMBER 2021 AND JANUARY 2022	170.45	
EFT22043	17/02/2022	WALGA	TRAINING - SHIRE PRESIDENT, 2 X COUNCILLORS	2925.00	
EFT22044	17/02/2022	WESTRAC PTY LTD	DEPOT PARTS	654.88	
EFT22045	17/02/2022	HORIZON POWER - ACCOUNTS	UTILITIES	21063.40	
EFT22046	22/02/2022	CONSTRUCTION TRAINING FUND	BCITF PAYMENTS JANUARY 2022	4326.00	
EFT22047	22/02/2022	DEPARTMENT OF MINES, INDUSTRY REGULATION AND SAFETY	BSL PAYMENTS JANUARY 2022	9232.59	
EFT22048	22/02/2022	SHIRE OF EXMOUTH	BSL COLLECTION FEES JANUARY 2022	421.00	
EFT22049	25/02/2022	AUSTRALIAN TAX OFFICE (PAYG)	PAYROLL DEDUCTIONS	46416.00	
EFT22051	25/02/2022	BALANCE UTILITY SOLUTIONS PTY LTD	FINAL PAYMENT FOR NINGALOO CENTRE SOLAR SYSTEM UPGRADE	25498.45	
EFT22052	25/02/2022	LOCAL GOVT RACING & CEMETERIES EMP UNION	PAYROLL DEDUCTIONS	19.40	
				\$ 679,198.46	\$ -
	28/01/2022	QANTAS	FLIGHTS FOR STAFF TRAINING	\$ 320.90	
	31/01/2022	FACEBOOK ADS	ADVERTISEMENT COMMUNITY DEVELOPMENT	\$ 72.10	
	08/02/2022	TOURISM COUNCIL WA	TOURISM AWARD	\$ 190.00	
	08/02/2022	QANTAS	COUNCILLOR RETURN FLIGHT FOR WALGA TRAINING	\$ 296.15	
	10/02/2022	SURVEY MONKEY	IT SUBSCRIPTION	\$ 1,470.84	
	11/02/2022	ADOBE	MONTHLY SUBSCRIPTION FEE	\$ 43.99	
	12/02/2022	COLES EXPRESS PARABURDOO	FUEL	\$ 240.01	
	13/02/2022	BP KARRATHA	FUEL	\$ 184.01	
	14/02/2022	SEEK	RECRUITMENT ADVERTISEMENT	\$ 324.50	
	19/02/2022	BP KARRATHA	FUEL	\$ 122.01	
	20/02/2022	ADOBE	MONTHLY SUBSCRIPTION FEE	\$ 39.59	
			TOTAL CREDIT CARD CEO	\$ 3,304.10	
	04/02/2022	APPLE	IT SUBSCRIPTION	\$ 17.99	

Reference	Date	Name	Description	Municipal Account	Trust Account
	05/02/2022	GETSLING	IT SUBSCRIPTION	\$ 81.81	
	08/02/2022	NATIONAL GEOGRAPHIC	SUBSCRIPTION	\$ 71.07	
	10/02/2022	REZDY	IT SUBSCRIPTION	\$ 280.61	
	13/02/2022	AMAZON	IPAD COVER TOURISM AWARD VOTING	\$ 93.91	
	18/02/2022	PUMA ENERGY GLENFIELD	FUEL	\$ 71.36	
	18/02/2022	BILLABONG SHELL	FUEL	\$ 78.47	
	18/02/2022	BP CARNARVON	FUEL	\$ 126.41	
	18/02/2022	BP CARNARVON	FUEL	\$ 8.83	
	19/02/2022	MUCHEA IGA X-PRESS	FUEL	\$ 43.04	
	19/02/2022	LAKE GRACE ROADHOUSE	FUEL	\$ 60.07	
	19/02/2022	BADGINGARRA ROADHOUSE	FUEL	\$ 74.63	
	19/02/2022	BP WILLIAMS	FUEL	\$ 65.30	
	20/02/2022	EG GROUP	FUEL	\$ 94.35	
	20/02/2022	HOPETOON FUEL	FUEL	\$ 80.77	
	21/02/2022	BP CARNARVON	FUEL	\$ 68.56	
	21/02/2022	METRO GERALDTON	FUEL	\$ 93.26	
	21/02/2022	BILLABONG ROADHOUSE	FUEL	\$ 60.96	
			TOTAL CREDIT CARD EMCC	\$ 1,471.40	
	08/02/2022	CATCH.COM.AU	REPLACEMENT COFFEE MACHINE STAFF LUNCH ROOM	\$ 693.85	
	17/02/2022	ZOOM	IT SUBSCRIPTION	\$ 23.78	
	23/02/2022	DEPARTMENT OF TRANSPORT	PLANT REGISTRATIOn	\$ 148.75	
			TOTAL CREDIT CARD EMCS	\$ 866.38	
	28/01/2022	SOCKIES	BULK FACEMASKS	\$ 2,698.65	
	06/02/2022	QANTAS	FLIGHTS FOR STAFF INDUCTION & TRAINING	\$ 513.90	
	16/02/2022	BP CARNARVON	FUEL	\$ 224.01	
	16/02/2022	BP MUCHEA	FUEL	\$ 178.51	
	20/02/2022	PUMA ENERGY GLENFIELD	FUEL	\$ 137.40	
	23/02/2022	EXMOUTH POST OFFICE	STAFF FAREWELL GIFT	\$ 205.95	
	23/02/2022	HEALTH DEPARTMENT PERTH	AMENDMENT AND RENEWAL OF INDUSTRIAL PERMIT 905 (CHLORINE GAS)	\$ 82.00	
	24/02/2022	AUSTRALIA POST ONLINE SHOP	TELSTRA PREPAID 4GX WI-FI	\$ 49.00	
			TOTAL CREDIT CARD EMDS	\$ 4,089.42	
			TOTAL CREDIT CARD PURCHASES	\$ 9,731.30	
			TOTAL PAYMENTS - JANUARY 2022	\$ 792,398.35	\$ -