

Targeted Fauna Assessment



Proposed Solar Array

Reserve 1686 (Part)

Monkey Mia

October 2023

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SUMMARY

This report details the results of a targeted fauna assessment over a section of Reserve 1686 (Monkey Mia Conservation Reserve), Monkey Mia (the survey area)(Figure 1).

RAC Tourism Assets Pty. Ltd. (RAC) are investigating the development of a 1,28MW Solar PV Array adjacent to the Monkey Mia Dolphin Resort and within a section of Reserve 1686 (Figure 2). The survey area has a total extent of about 2.89 hectares (ha), As the removal/modification of areas of vegetation potentially in use by native fauna will possibly be required a fauna impact assessment has been undertaken.

The primary scope of works was to conduct a targeted survey for the Priority 4 western grasswren (*Amytornis textilis textilis*) within the defined survey area. A review of the potential for other fauna species of conservation significance to be present was also carried out.

The assessment has included a literature review and a series of daytime targeted surveys. The field component of the fauna assessment was carried out on the 4, 5, 6 and 7 August 2023. All survey work and reporting has been carried out by Greg Harewood (Zoologist).

Key Findings

Vegetation within the survey is comprised of an open scrub of bowgada wattle (*Acacia ramulosa*), dead finish (*A. tetragonophylla*) and Shark Bay poverty bush (*Eremophila maitlandii*) over an open low shrubland of pebble bush (*Stylobasium spathulatum*) and flannel bush (*Solanum lasiophyllum*) (Strategen 2017) with significant expanses of bare sand.

While the upper scrub layer is relatively dense the lower shrub layer, ground cover and leaf litter are very sparse/absent. Large hollow logs and significant log piles are also not present.

The sparse nature of the lower vegetation can possibly be attributed to the presence of goats (and to a lesser extent rabbits), the tracks and scats of which were very common across the entire survey area.

No evidence of western grasswrens was recorded within the survey area during the on-foot traverses (~12 hours over 4 days) or on the two autonomous (sound) recording units (~24 hours over 4 days).

Bamford recorded western grasswrens within the current survey area during a series of surveys in 2003 (Bamford 2003). Subsequent surveys around this same area in 2016 and 2017 did not detect this species (Bamford 2017).

Bamford states that the absence of grasswrens in this area as being consistent with the type of vegetation present and the preferred habitat of the species (Bamford 2017). Brooker (1998) described the favoured vegetation as having abundant leaf-litter, a high density of low (<1m) shrubs and a low density of tall shrubs. This habitat type is absent from the survey area. Bamford specifically states that vegetation “around the waste water treatment plant (WWTP) expansion area”, which corresponds in part to the current survey area “is not suitable for the birds” (Bamford 2017).

No evidence of any fauna species of conservation significance identified during the literature review was observed. Observations made in the field and a review of these species current distribution and habitat preference suggests that only one species is likely to occur, this being the peregrine falcon. This species is only likely to occur very infrequently and would not reside on site.

In cases where available information indicates at least some probability of fauna species occurring, likely impacts of the proposed development are anticipated to be very low primarily due to likely low degree of usage, low population densities and the very small total area of native vegetation/habitat present.

No overall change in the conservation status of any fauna species currently utilising the survey area is therefore anticipated if clearing of some or all of the vegetation present is undertaken. While some small, localised residual loss of fauna habitat may occur for some species, regional impacts on the status of any one species are anticipated to be negligible/non-existent.

1. INTRODUCTION

This report details the results of a targeted fauna assessment over a section of Reserve 1686 (Monkey Mia Conservation Reserve), Monkey Mia (the survey area)(Figure 1).

RAC Tourism Assets Pty. Ltd. (RAC) are investigating the development of a 1,28MW Solar PV Array adjacent to the Monkey Mia Dolphin Resort and within a section of Reserve 1686 (Figure 2). The survey area has a total extent of about 2.89 hectares (ha), As the removal/modification of areas of vegetation potentially in use by native fauna will possibly be required a fauna impact assessment has been undertaken.

Information obtained as part of this fauna assessment report will be used in conjunction with other environmental investigations to guide project planning which will aim to minimise potential environmental impacts. The outcome of the survey and information supplied in the fauna survey report will also be used to inform the environmental assessment and approvals process.

2. SCOPE OF WORKS

The primary scope of works was to conduct a targeted survey for the Priority 4 (DBCA 2023) western grasswren (*Amytornis textilis textilis*) within the defined survey area. A review of the potential for other fauna species of conservation significance to be present was also carried out. The assessment has therefore involved:

1. A literature review (“desktop survey”) for threatened and priority fauna to identify species that have been recorded as being present or likely to be present in or around the survey area;
2. Targeted searches for western grasswren (*Amytornis textilis textilis*) within the defined survey area;
3. Targeted searches for evidence of the presence or likely presence of other fauna species of conservation significance (or suitable habitat) within the defined survey area; and
4. Compilation of a report summarising methods and results.

3. METHODS

3.1 LITERATURE REVIEW – FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

A list of conservation significant fauna recorded or likely to occur within the survey area has been compiled by a review of available databases and literature including, but not limited to the following data sources:

- Department of Biodiversity, Conservation and Attractions (DBCAs) Threatened Fauna Database (NatureMap) search (DBCAs 2023). A 10 kilometre (km) buffer around the survey area was applied to capture previous fauna records within the immediate vicinity;
- *Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act)* Protected Matters database search for fauna of national environmental significance (DCCEEW 2023). The minimum buffer (0 km) was applied to this search as the databases contains distribution data (areas) and not actual fauna records; and
- Literature search and review of other fauna surveys in the vicinity.

The conservation status of each species has been based on current lists produced under Federal and State Acts (*EPBC Act* and the *Biodiversity Conservation Act 2016 (BC Act)*).

3.2 FIELD SURVEYS

The field component of the fauna assessment was carried out on the 4, 5, 6 and 7 August 2023 by Greg Harewood (Zoologist). The survey was scheduled to fit in with project time lines however August represents one of the cooler months of the year, which Bamford (2017) notes as “a period when, in general, grasswrens were easier to find”...(more vocal and more inclined to move around in the open than in the warmer months”).

3.2.1 FAUNA HABITAT ASSESSMENT

Vegetation units, identified during a flora and vegetation survey of the survey area by Strategen (2017), have been used to define broad habitat types across the survey area. This information has been supplemented by observations made during the targeted site survey. The Environmental Protection authority (EPA 2020) state that vegetation can become a reasonable surrogate for outlining habitat when its main components, structure and the associated landform are also described.

The main objective of the assessment was to determine if it was likely that species of conservation significance would occur within the survey area based on their documented habitat preference and current known distribution.

3.2.2 WESTERN GRASSWREN TARGETED SURVEY

The western grasswren targeted survey has included a series of on foot traverses around the survey area in addition to the deployment of two autonomous recording units (ARUs)

over the four day survey period. The location of traverses and the ARUs within the survey area are shown in Figure 5.

Traverses within the survey area were carried out over an approximate two hour period in the afternoon of the 4 August 2023, two hours in the morning and afternoon of the 5 and 6 August 2023 and two hours in the morning of the 7 August 2023, giving a total of about 12 hours of transects within the survey area.

During the traverses evidence of western grasswrens were specifically searched for and any sightings/calls heard recorded.

The two ARUs deployed were Wildlife Acoustics SM4s. The units were set to record two hours in the late afternoon of the 4 August 2023, two hours in the early morning and late afternoon of the 5 and 6 August 2023 and two hours in the early morning of the 7 August 2023, giving a total of 24 hours of recordings within the survey area.

These recordings were subsequently replayed with the aim of identifying any distinctive calls of the western grasswren.

3.2.3 FAUNA OBSERVATIONS

Evidence of the presence or likely presence of fauna species of conservation significance (and suitable habitat) was searched for and recorded concurrent with the primary targeted survey. Opportunistic observations of all fauna species were made during all field survey work and recorded where positive species identifications were made. Opportunistic observations of fauna species outside of the defined survey area were also recorded.

This aspect of the assessment included but was not limited to:

- Undertaking a series of transects across the survey area.
- Searching for evidence (i.e. individuals, tracks, scats, calls) of potential conservation significant species under logs, rocks and leaf litter.
- Observing bird species with binoculars.

3.3 LIKELIHOOD OF OCCURRENCE – FAUNA OF CONSERVATION SIGNIFICANCE

Based on the information gathered during the site reconnaissance survey and the documented distribution and habitat preferences of the species of conservation significance identified as potentially being present in the general area, their likelihood of occurrence within the survey area itself has been assessed using “in-house” rankings and criteria. The rankings and criteria used were:

- **Would Not Occur:** There is no suitable habitat for the species in the survey area and/or there is no documented record of the species in the general area since records have been kept and/or the species is generally accepted as being locally/regionally extinct (supported by a lack of recent records).

- Locally Extinct: Populations no longer occur within a small part of the species natural range, in this case within 10 or 20km of the survey area. Populations do however persist outside of this area.
- Regionally Extinct: Populations no longer occur in a large part of the species natural range, in this case within the Carnarvon/Yalgoo/Geraldton Sandplain bioregions. Populations do however persist outside of this area.
- Unlikely to Occur: The survey area is outside of the currently documented distribution for the species in question, or no suitable habitat (type, quality and extent) was identified as being present during the field assessment. Individuals of some species may occur occasionally as vagrants/transients especially if suitable habitat is located nearby but the survey area itself would not support a population or part population of the species.
- Possibly Occurs: The survey area is within the known distribution of the species in question and habitat of at least marginal quality was identified as being present during the field assessment, supported in some cases by recent records being documented in literature from within or near the survey area. In some cases, while a species may be classified as possibly being present at times, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.
- Known to Occur: The species in question was positively identified as being present (for sedentary species) or as using the survey area as habitat for some other purpose (for non-sedentary/mobile species) during the field survey. This information may have been obtained by direct observation of individuals or by way of secondary evidence (e.g. foraging debris, tracks and scats). In some cases, while a species may be classified as known to occur, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

4. SURVEY LIMITATIONS

No seasonal sampling was carried out as part of this fauna assessment. The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. It should be recognised that site conditions can change with time.

Lack of observational data on some species should also not necessarily be taken as an indication that a species is absent from the site or does not utilise it for some purpose at times.

5. RESULTS

5.1 LITERATURE REVIEW – FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

The fauna species of conservation significance identified during the literature review as potentially occurring in the general area are listed in Table 1. The location of records from the DBCA threatened fauna database (excluding the western grasswren) are shown in Figure 3. Western grasswren records from surveys undertaken by Bamford in 2003, 2015, 2016 and 2017 (Bamford 2003 & 2017) are shown in Figure 4.

The NatureMap (DBCA 2023) and Protected Matter Search Tool (DCCEEW 2023) results, used as a primary source for compiling this listing, are held within Appendix B.

Given the survey area's proximity to the ocean, numerous migratory shorebirds along with various marine and wetland fauna species appeared in the database searches. These species are not specifically listed or discussed given there is no suitable habitat for any within the survey area. None of these species would, under normal circumstances, occur within the survey area or be impacted on by the proposal.

Table 1: Conservation significant fauna previously recorded or potentially occurring within the general vicinity of the survey area.

Species	Conservation Status ¹	
	BC Act	EPBC Act
Western Spiny-tailed Skink <i>Egernia stokesii badia</i>	VU	EN
Woma <i>Aspidites ramsayi</i> (southwest subpop.)	P1	-
Malleefowl <i>Leipoa ocellata</i>	VU	VU
Migratory Shorebirds, other Marine & Wetland Species	Various	Various
Peregrine Falcon <i>Falco peregrinus</i>	OS	-
Osprey <i>Pandion haliaetus</i>	MI	Mig
Grey Falcon <i>Falco hypoleucos</i>	VU	VU
Southern Whiteface <i>Aphelocephala leucopsis</i>	-	VU
Western Grasswren <i>Amytornis textilis textilis</i>	P4	-
Dirk Hartog Black and White Fairy-wren <i>Malurus leucopterus leucopterus</i>	VU	VU
Fork-tailed Swift <i>Apus pacificus</i>	MI	Mig
Grey Wagtail <i>Motacilla cinerea</i>	MI	Mig
Quenda <i>Isoodon fusciventer</i>	P4	-
Greater Bilby <i>Macrotis lagotis</i>	VU	VU
Banded Hare-wallaby <i>Lagostrophus fasciatus fasciatus</i>	VU	VU
Woylie <i>Bettongia penicillata ogilbyi</i>	CR	EN

¹ See Appendix A for conservation status codes

5.2 FIELD SURVEYS

5.2.1 FAUNA HABITAT ASSESSMENT

The survey area is located near the crest of a sand dune. The single vegetation type present is comprised of an open scrub of bowgada wattle (*Acacia ramulosa*), dead finish (*A. tetragonophylla*) and Shark Bay poverty bush (*Eremophila maitlandii*) over an open low shrubland of pebble bush (*Stylobasium spathulatum*) and flannel bush (*Solanum lasiophyllum*) (Strategen 2017) with significant expanses of bare sand.

Representative images of the single identified fauna habitat present are provided in Table 2.

Table 2: Representative images of the fauna habitat within the survey area

Fauna Habitat Description	Representative Images
<p>Open Scrub of bowgada wattle (<i>Acacia ramulosa</i>), dead finish (<i>A. tetragonophylla</i>) and Shark Bay poverty bush (<i>Eremophila maitlandii</i>) over an Open Low Shrubland of pebble bush (<i>Stylobasium spathulatum</i>) and flannel bush (<i>Solanum lasiophyllum</i>) with significant expanses of bare sand</p>	<p>The table contains two photographs of the fauna habitat. The top photograph shows a sand dune crest with dense scrub vegetation, including bowgada wattle, dead finish, and Shark Bay poverty bush. The bottom photograph shows a low shrubland with pebble bush and flannel bush, along with significant expanses of bare sand. Both images include a ZOOTOPIA watermark and a timestamp.</p>

As is evidenced from the provided images, while the upper scrub layer is relatively dense the lower shrub layer, ground cover and leaf litter are very sparse/absent. Large hollow logs and significant log piles are also not present.

The sparse nature of lower vegetation can possibly be attributed to the presence of goats (and to a lesser extent rabbits), the tracks and scats of which were very common across the entire survey area.

5.2.2 WESTERN GRASSWREN TARGETED SURVEY

No evidence of western grasswrens was recorded within the survey area during the on-foot traverses or on the ARUs.

Bamford recorded western grasswrens within the current survey area during a series of surveys in 2003 (Bamford 2003). The location of these observations are shown in Figure 4. Subsequent surveys around this same area in 2016 and 2017 (Bamford 2017) did not detect this species in this area.

Bamford states that the absence of western grasswrens in this area as being consistent with the type of vegetation present and the preferred habitat of the species (Bamford 2017). Brooker (1998) described the favoured vegetation as having abundant leaf-litter, a high density of low (<1m) shrubs and a low density of tall shrubs. This habitat type is absent from the survey area. Bamford specifically states that vegetation “around the waste water treatment plant (WWTP) expansion area”, which corresponds in part to the current survey area “is not suitable for the birds” (Bamford 2017).

It is assumed that the vegetation has undergone some change since the species was recorded here by Bamford in 2003, possibly as a consequence of grazing by goats and rabbits which, as previously mentioned, have an obvious presence within the survey area.

Despite not being observed within the survey area during the survey period, western grasswren individuals may occasionally be present, given the presence of suitable habitat in adjoining areas. The survey area itself does not however appear to be an area of significance for the species long term survival in the general area.

5.2.3 FAUNA OBSERVATIONS

Evidence of seventeen (17) fauna species was recorded within the defined survey area during the survey period (Appendix C). Most of these species were relatively common bird species (14), with three mammal species also being recorded (two introduced).

No species of conservation significance were recorded.

Thirty-three (33) fauna species were record opportunistically outside of the defined survey area (Appendix C). Two species of conservation significance were recorded, these being a single western grasswren (Priority 4) ~450m north of the defined survey area and a caspian tern flying overhead in a similar location.

5.3 LIKELIHOOD OF OCCURRENCE - CONSERVATION SIGNIFICANT FAUNA SPECIES

Based on the information gathered during the site reconnaissance survey and the documented distribution and habitat preferences of the species of conservation significance identified as potentially being present in the general area, their likelihood of

occurrence within the survey area itself has been assessed. A summary of this assessment is presented in Table 3.

As indicated in previous sections no fauna species of conservation significance (listed as State or Federal threatened/migratory species or as DBCA priority species) were positively identified as utilising the survey area for some purpose during the survey period.

Only one species of conservation significance has been rated as “possibly occurring”, this being the peregrine falcon. This species is a wide ranging species that preys on other bird species while in flight. It may occasionally forage over the survey area but the frequency of occurrence would be very low. There are no suitable nest sites for this species within the survey area.

A number of species of conservation significance (as listed in Table 3), while possibly present in the wider area (e.g. Francois Peron National Park) are not listed as potentially occurring within the survey area primarily due to a complete lack of suitable habitat (quality and extent) and/or known local/regional extinction.

No overall change in the conservation status of any fauna species currently utilising the survey area is anticipated. While some small, localised residual loss of fauna habitat may occur for some species, regional impacts on the status of any one species are anticipated to be negligible/non-existent.

Table 3: Likelihood of Occurrence – Fauna Species of Conservation Significance

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Comments/Possible Impacts
	BC Act	EPBC Act				
Western Spiny-tailed Skink <i>Egernia stokesii badia</i>	VU	EN	Occurs in open eucalypt woodlands and Acacia-dominated shrublands in semi-arid to arid areas of south-western WA. Most often shelters in logs, in cavities in the trunks and branches of shrubs.	No/Very Marginal	Would Not Occur.	No suitable habitat in particular an absence of large hollow logs/log piles and rock outcrops. No impact on this species will occur.
Woma <i>Aspidites ramsayi</i> (southwest subpop.)	P1	-	Woodlands, heaths and shrublands, often with spinifex. Shelters in hollow logs, animal burrows or thick herbage during the day. Occurs in a variety of arid sandplain habitats including desert sandplain and dune systems and is strongly associated with red desert sandplains supporting spinifex hummock grasslands.	No	Would Not Occur.	Not recorded in wider area in recent years. No suitable habitat in particular an absence of hummock grasslands, large hollow logs/log piles and larger burrows. No impact on this species will occur.
Malleefowl <i>Leipoa ocellata</i>	VU	VU	Arid and semi-arid tall mallee and dense litter forming low wattle scrub.	No/Marginal	Unlikely to Occur	Successfully reintroduced into Francois Peron National Park. Very occasional transients possible. No suitable breeding habitat. No impact on this species will occur.
Migratory Shorebirds/Wetland Species/Marine Species (various reptiles, birds and mammals)	MI, Various	Ma, Mig, Various	Varies between species but includes open ocean, beaches and permanent/temporary wetlands varying from billabongs, swamps, lakes, floodplains, sewerage farms, saltwork ponds, estuaries, lagoons, mudflats sandbars, pastures, airfields, sports fields and lawns.	No	Would Not Occur.	No suitable habitat. Fly over only. No impact on these species will occur.
Peregrine Falcon <i>Falco peregrinus</i>	OS	-	Diverse from rainforest to arid shrublands, from coastal heath to alpine Mainly about cliffs along coasts, rivers and ranges and about wooded watercourses and lakes.	Yes	Possibly Occurs.	Flyover only while foraging. No suitable nest sites. No impact on this species will occur.
Osprey <i>Pandion haliaetus</i>	MI	Mig	Coasts, estuaries, bays, inlets, islands, and surrounding waters, coral atolls, reefs, lagoons, rock cliffs and stacks. Ascends larger rivers.	No	Would Not Occur.	No suitable habitat. Flyover only. No impact on this species will occur.
Grey Falcon <i>Falco hypoleucos</i>	VU	VU	Lightly treed plains, gibber deserts, sand ridges, pastoral lands, timbered water courses but seldom in driest deserts	No	Would Not Occur.	Rarely if ever recorded in this area. No suitable habitat. No impact on this species will occur.
Southern Whiteface <i>Aphelocephala leucopsis</i>	-	VU	Typically inhabits arid open woodlands with a shrubby or grassy understory, as well as grass plains. Prefers Acacia woodlands, particularly those dominated by mulga and drought-resistant chenopod shrub species, including saltbush and bluebush.	No	Would Not Occur.	Outside of documented distribution. No suitable habitat. No impact on this species will occur.

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Comments/Possible Impacts
	BC Act	EPBC Act				
Western Grasswren <i>Amytornis textilis textilis</i>	P4	-	Preferred habitat is low, often <i>Acacia</i> dominated, semiarid shrubland, no more than a metre in height, that forms densely foliated clumps and thickets with abundant leaf-litter.	No/Very Marginal	Unlikely to Occur	No suitable breeding habitat. Occasional transients from adjoining more suitable habitat. No impact on this species will occur.
Dirk Hartog Black and White Fairy-wren <i>Malurus leucopterus leucopterus</i>	VU	VU	Low heath, scrub, saltbush, bluebush, roly poly, dead finish, margins of salt lakes, coastal inlets and salt fields.	No	Would Not Occur.	Confined to Dirk Hartog Island. No impact on this species will occur.
Fork-tailed Swift <i>Apus pacificus</i>	MI	Ma, Mig	Low to very high airspace over varied habitat from rainforest to semi desert.	Yes	Unlikely to Occur	Flyover only on very rare occasions. Entirely aerial. No impact on this species will occur.
Grey Wagtail <i>Motacilla cinerea</i>	MI	Mig, Ma	In Australia, near running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Quenda <i>Isodon fusciventer</i>	P4	-	Scrubby vegetation with dense cover up to 1 m.	No	Would Not Occur.	Successfully reintroduced into Francois Peron National Park but there is no suitable habitat within the survey area. No impact on this species will occur.
Greater Bilby <i>Macrotis lagotis</i>	VU	VU	Acacia shrubland and hummock grasslands. Successfully reintroduced into Francois Peron National Park.	No/Very Marginal	Would Not Occur.	Successfully reintroduced into Francois Peron National Park but there is no suitable habitat within the survey area. No impact on this species will occur.
Banded Hare-wallaby <i>Lagostrophus fasciatus fasciatus</i>	VU	VU	Unsuccessfully reintroduced into Francois Peron National Park	No	Would Not Occur.	Unsuccessfully reintroduced into Francois Peron National Park. No suitable habitat. No impact on this species will occur.
Woylie <i>Bettongia penicillata ogiby</i>	CR	EN	Open sclerophyll forest and woodland with a low, dense, understorey of tussock grasses or woody scrub.	No	Would Not Occur.	Unsuccessfully reintroduced into Francois Peron National Park. No suitable habitat. No impact on this species will occur.

See Appendix A for conservation status codes

6. CONCLUSION

The fauna assessment within the survey area was primarily undertaken to document the current status of the western grasswren and to determine the possible presence of other conservation significant fauna species and/or their habitat.

The single fauna habitat present consists of an *Acacia* open scrub over a sparse open low shrubland with significant expanses of bare sand.

No evidence of western grasswrens utilising the survey area was found and the habitat present appears unsuitable for the species to persist given the sparse nature/absence of low shrub species and leaf litter. The presence of goats and rabbits suggests that the vegetation structure may have been altered over time.

No evidence of any other fauna species of conservation significance identified during the literature review was observed. Observations made in the field and a review of these species current distribution and habitat preference suggests that only one species is likely to occur (if only infrequently), this being the peregrine falcon.

In cases where available information indicates at least some probability of fauna species occurring, likely impacts of the proposed development are anticipated to be very low primarily due to likely low degree of usage, low population densities and the very small total area of native vegetation/habitat present.

No overall change in the conservation status of any fauna species currently utilising the survey area is therefore anticipated if clearing of some or all of the vegetation present is undertaken. While some small, localised residual loss of fauna habitat may occur for some species, regional impacts on the status of any one species are anticipated to be negligible/non-existent.

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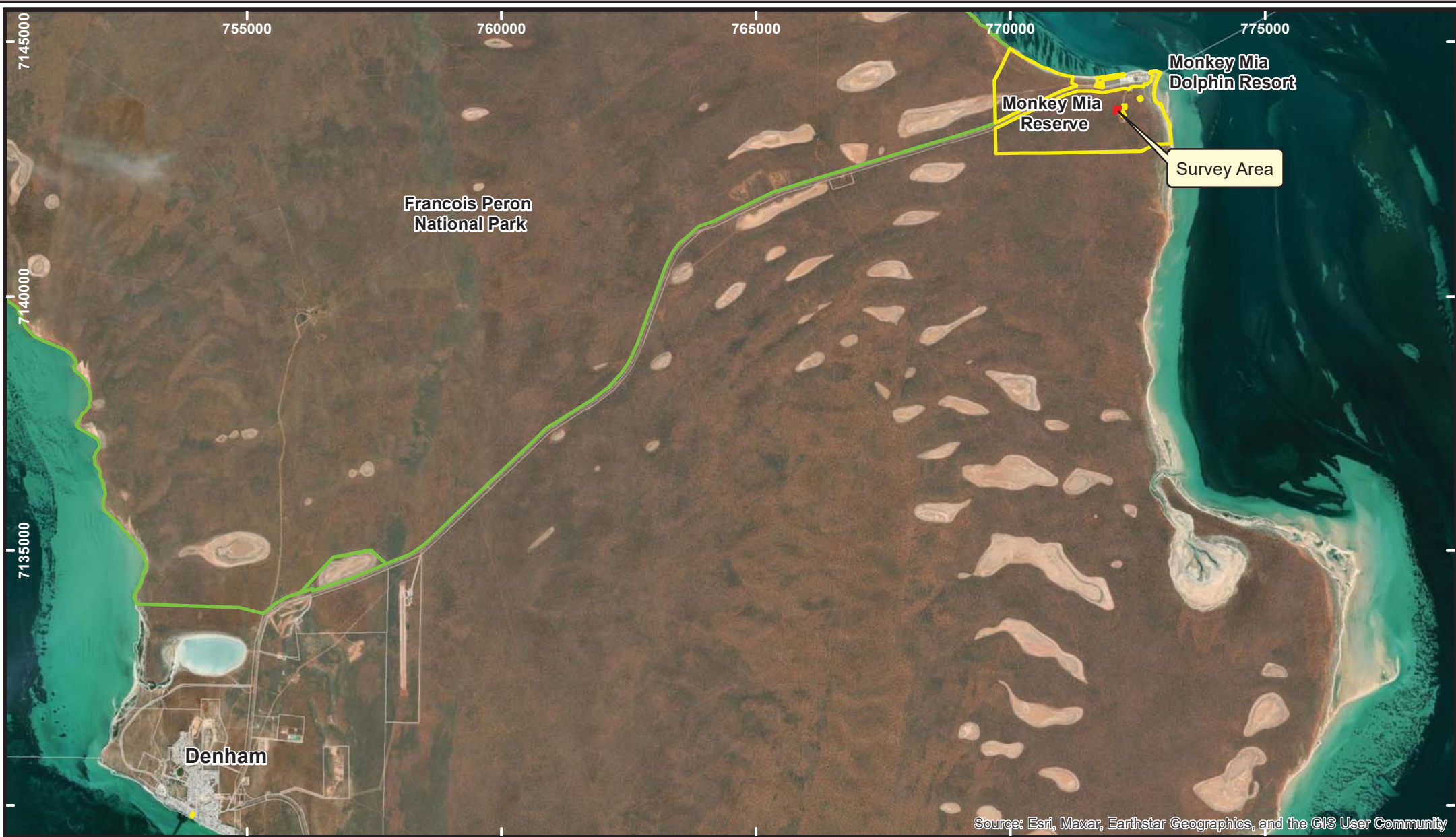
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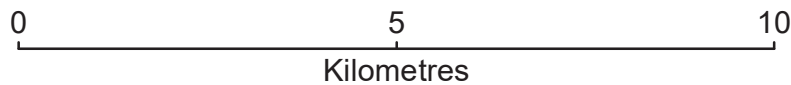
FIGURES



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

 Survey Area



Fauna Survey

Drawn: G Harewood

Date: 03-Sep-23

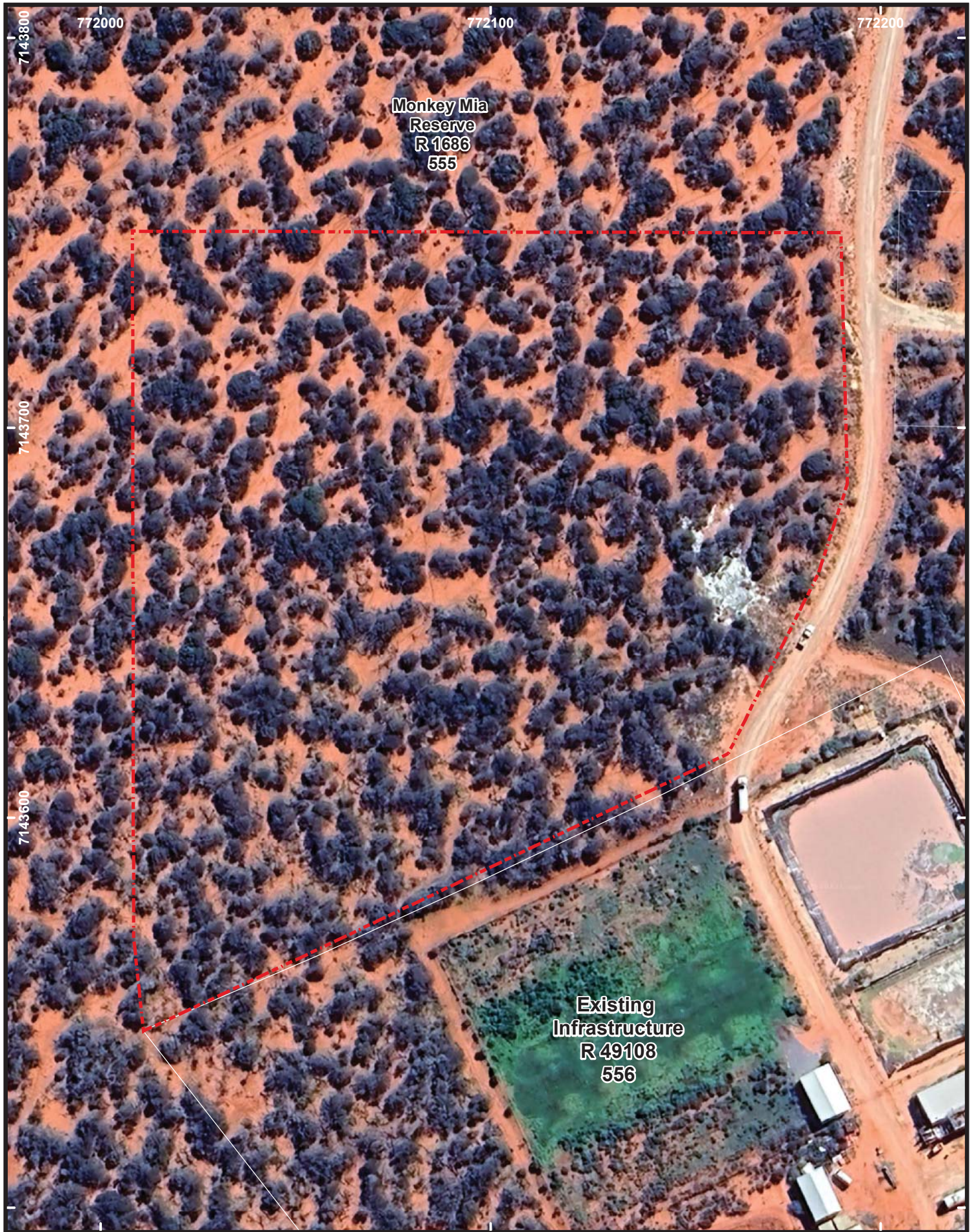
Scale: 1:100,000

Proposed Solar Farm
Reserve 1686 (Part) - Monkey Mia

**Survey Area
&
Surrounds**

Projection/Coordinate System: UTM/MGA Zone 49

Figure: 1



Legend

 Survey Area

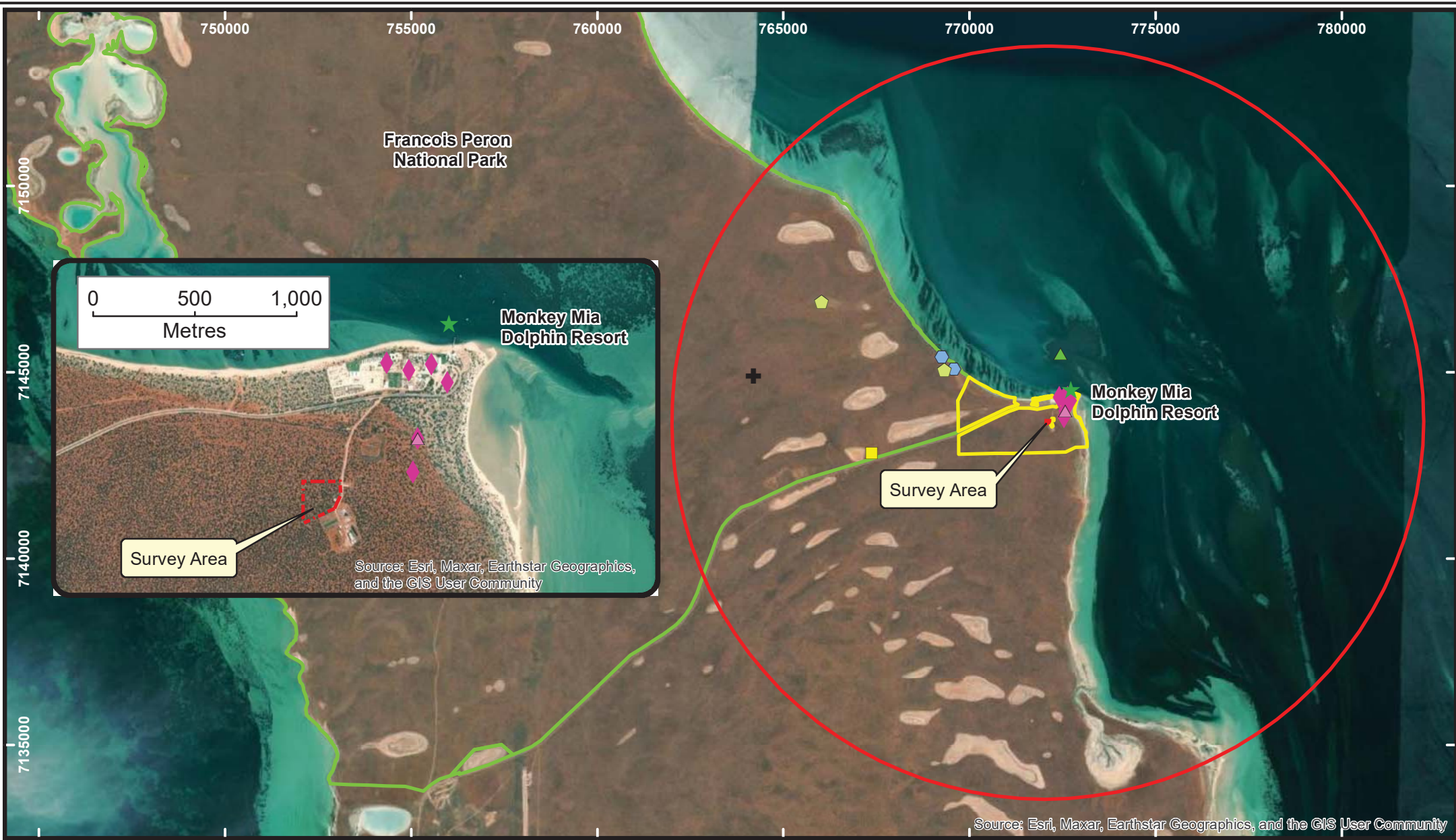


0 25 50
Metres



Drawn: G Harewood
Date: 03-Sep-23
Scale: 1:1,250

Proposed Solar Farm
Reserve 1686 (Part) - Monkey Mia
**Survey Area
Aerial Photograph**



Legend

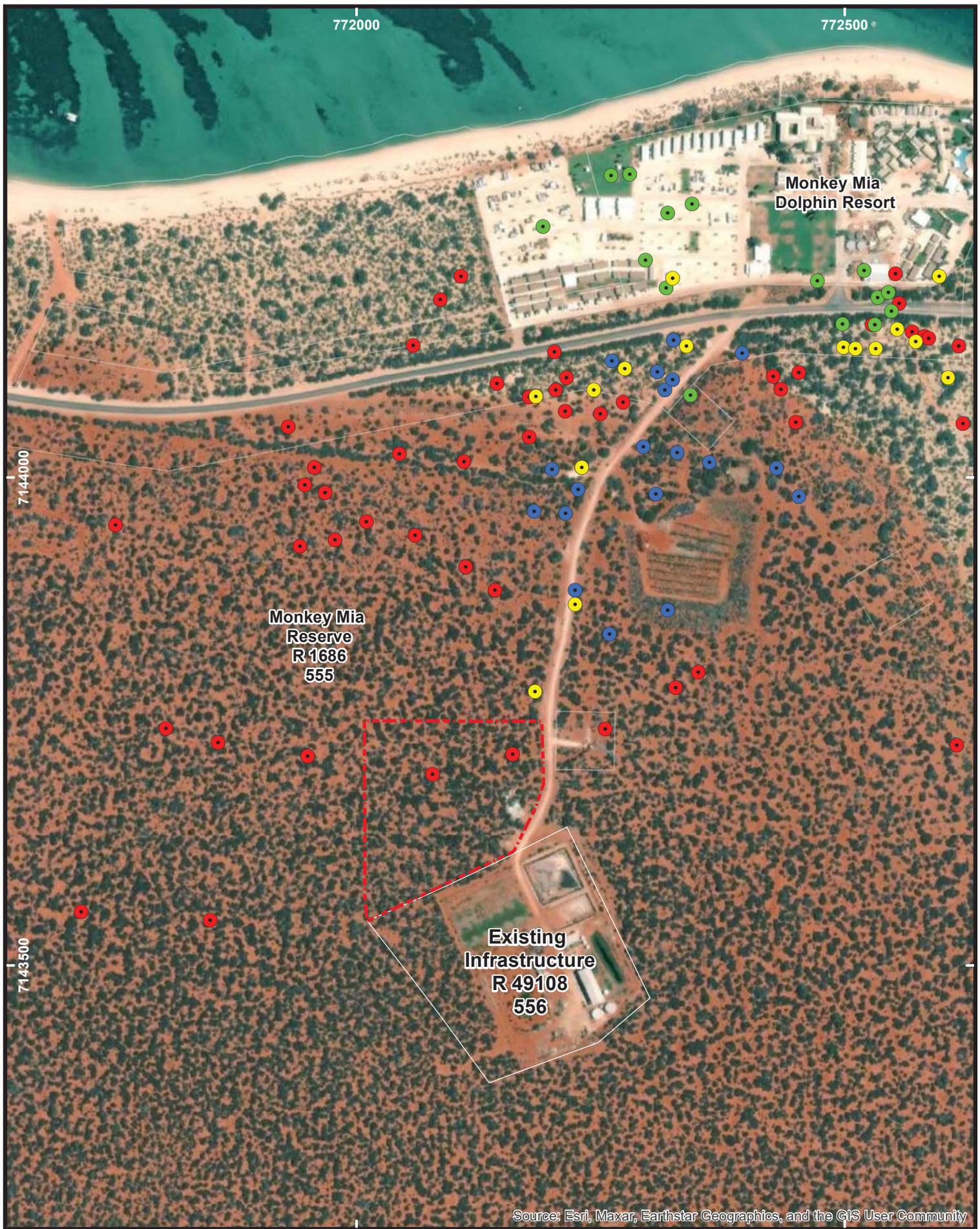
-  Survey Area
-  10km Buffer

-  Western Spiny-tailed Skink
-  Woma
-  Malleefowl
-  Osprey
-  Dirk Hartog Black and White Fairy-wren
-  Fork-tailed Swift
-  Banded Hare-wallaby
-  Woylie




Drawn: G Harewood
 Date: 03-Sep-23
 Scale: 1:136,657

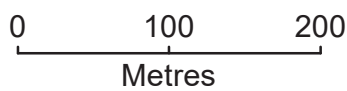
Proposed Solar Farm Reserve 1686 (Part) - Monkey Mia
DBCAs Threatened Fauna Records
 (10km buffer - Excluding Western Grasswren)



Legend

 Survey Area

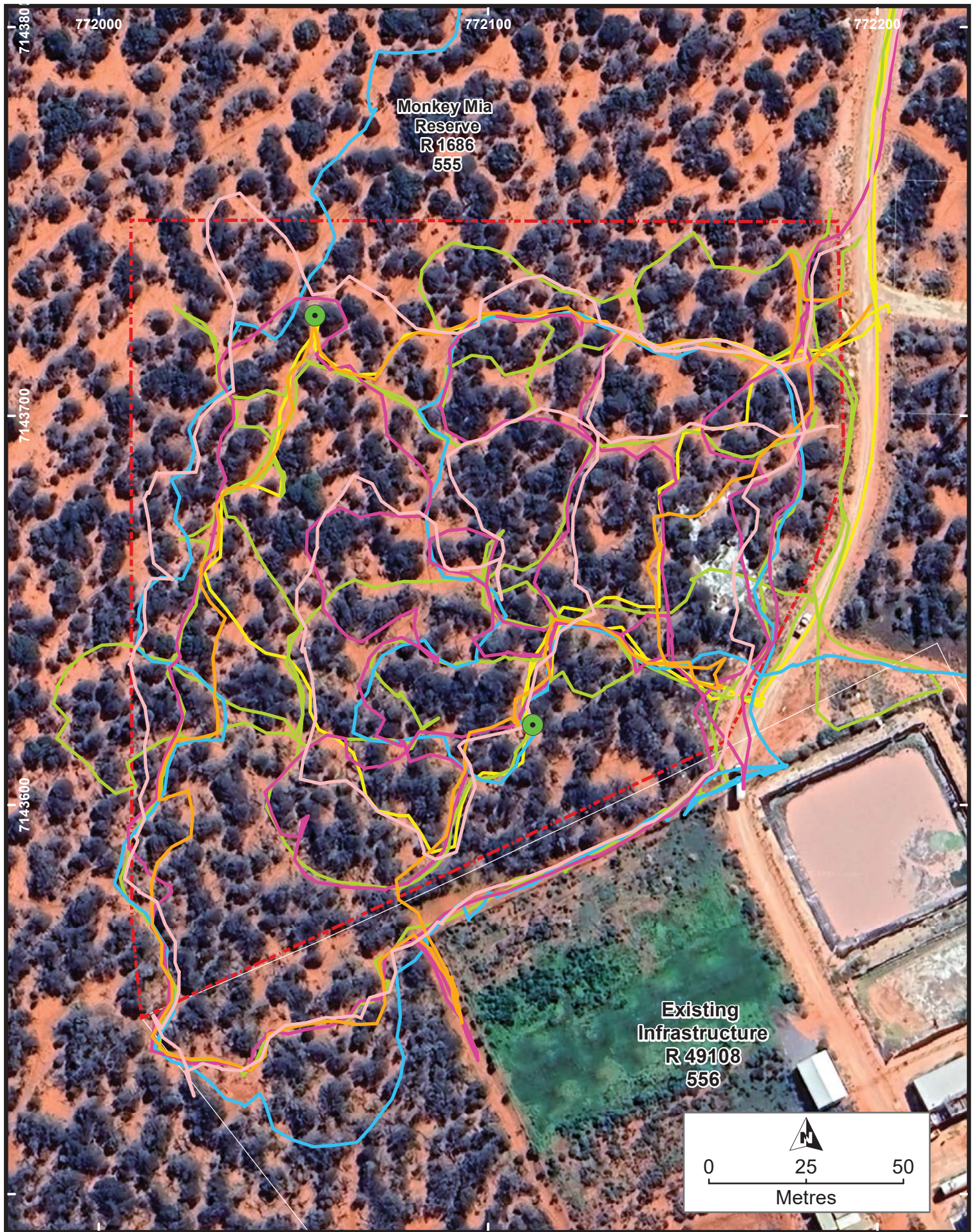
-  Bamford 2003 Survey
-  Bamford 2016 Survey
-  Bamford 2015 Survey
-  Bamford 2017 Survey





Drawn: G Harewood
Date: 03-Sep-23
Scale: 1:5,000

Proposed Solar Farm
Reserve 1686 (Part) - Monkey Mia







**Grasswren Records
Bamford
(2003-2017)**



Legend

-  Survey Area
-  Audio Recording Unit

Transects

-  2023-08-04 : PM
-  2023-08-05 : AM
-  2023-08-05 : PM
-  2023-08-06 : AM
-  2023-08-06 : PM
-  2023-08-07 : AM



Fauna Survey
 Drawn: G Harewood
 Date: 03-Sep-23
 Scale: 1:1,250

Proposed Solar Farm
 Reserve 1686 (Part) - Monkey Mia
Survey Area
Combined Transects &
Audio Recording Sites
4-7 August 2023

APPENDIX A

CONSERVATION CATEGORIES

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
Threatened Fauna Categories

Threatened fauna may be listed under Section 178 of the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* in any one of the following categories:

Category	Code	Description
Extinct	E	There is no reasonable doubt that the last member of the species has died.
*Extinct in the wild	EW	A species (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
*Critically Endangered	CR	A species is facing an extremely high risk of extinction in the wild in the immediate future.
*Endangered	EN	A species: (a) is not critically endangered; and (b) is facing a very high risk of extinction in the wild in the near future.
*Vulnerable	VU	A species (a) is not critically endangered or endangered; and (b) is facing a high risk of extinction in the wild in the medium-term future.
Conservation Dependent	CD	A species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered
*Migratory	Mig	(a) all migratory species that are: (i) native species; and (ii) from time to time included in the appendices to the Bonn Convention; and (b) all migratory species from time to time included in annexes established under JAMBA, CAMBA and ROKAMBA; and (c) all native species from time to time identified in a list established under, or an instrument made under, an international agreement approved by the Minister.
Marine	Ma	Species in the list established under s248 of the <i>EPBC Act</i>

Note: Only species in those categories marked with an asterisk are matters of national environmental significance (NES) under the *EPBC Act*.

Biodiversity Conservation Act 2016 (BC Act)
Specially Protected Fauna Categories

Biodiversity Conservation (Listing of Native Species) (Fauna) Order 2022, made by the Minister under sections 13(1), 19(1) and 23(1) of the Act and regulation 174(1) of the Biodiversity Conservation Regulations 2018

Threatened Species		
Category	Code	Description
Critically Endangered species	CR	Species facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines
Endangered species	EN	Species facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines.
Vulnerable species	VU	Species facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines.
Presumed extinct species	EX	Species where there is no reasonable doubt that the last member of the species has died.
Extinct in the wild species	EW	Species that is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and from.
Specially Protected Species		
Category	Code	Description
Migratory Species	MI	Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the <i>BC Act</i>)
Species of special conservation interest (conservation dependent)	CD	Species of special conservation need that are dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the <i>BC Act</i>).
Species otherwise in need of special protection (other specially protected).	OS	Species otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the <i>BC Act</i>).

Priority Species*		
Category	Code	Description
Priority 1 (P1) Poorly Known Species.	P1	Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.
Priority 2 (P2) Poorly Known Species.	P2	Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.
Priority 3 (P3) Poorly Known Species.	P3	Species that are known from several locations and the species does not appear to be under imminent threat or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. These species need further survey.
Priority 4 (P4) Rare, Near Threatened and other species in need of monitoring.	P4	<p>(a) Rare: Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.</p> <p>(b) Near Threatened: Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>

*Priority is not a listing category under the BC Act.

All fauna and flora are protected in WA following the provisions in Part 10 of the *BC Act*. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land). Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened. Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of priority status is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

IUCN Red List Threatened Species Categories

The *IUCN Red List of Threatened Species*[™] is a checklist of taxa that have undergone an extinction risk assessment using the *IUCN Red List Categories and Criteria*.

Categories are summarized below.

Category	Code	Description
Extinct	EX	Taxa for which there is no reasonable doubt that the last individual has died.
Extinct in the Wild	EW	Taxa which is known only to survive in cultivation, in captivity or and as a naturalised population well outside its past range and it has not been recorded in known or expected habitat despite exhaustive survey over a time frame appropriate to its life cycle and form.
Critically Endangered	CR	Taxa facing an extremely high risk of extinction in the wild.
Endangered	EN	Taxa facing a very high risk of extinction in the wild.
Vulnerable	VU	Taxa facing a high risk of extinction in the wild.
Near Threatened	NT	Taxa which has been evaluated but does not qualify for CR, EN or VU now but is close to qualifying or likely to qualify in the near future.
Least Concern	LC	Taxa which has been evaluated but does not qualify for CR, EN, VU, or NT but is likely to qualify for NT in the near future.
Data Deficient	DD	Taxa for which there is inadequate information to make a direct or indirect assessment of its risk of extinction based on its distribution and/or population status.
Not Evaluated	NE	Taxa which has not been evaluated.

A full list of categories and their meanings are available at:

<https://www.iucnredlist.org/resources/categories-and-criteria>

APPENDIX B
NATUREMAP DATABASE SEARCH
AND
PROTECTED MATTERS SEARCH TOOL RESULTS

DBCA Database Search

Fauna Recorded within 10km of Survey Area

TAXON	CLASS	CONS
<i>Hirundo neoxena</i>	BIRD	
<i>Haematopus longirostris</i>	BIRD	
<i>Numenius phaeopus</i>	BIRD	MI
<i>Hydroprogne caspia</i>	BIRD	MI
<i>Cacomantis flabelliformis</i>	BIRD	
<i>Petrochelidon nigricans</i>	BIRD	
<i>Limosa lapponica</i>	BIRD	MI
<i>Thalasseus bergii</i>	BIRD	MI
<i>Aquila audax</i>	BIRD	
<i>Pomatostomus superciliosus</i>	BIRD	
<i>Amytornis textilis</i>	BIRD	
<i>Pluvialis squatarola</i>	BIRD	MI
<i>Egretta sacra</i>	BIRD	
<i>Corvus bennetti</i>	BIRD	
<i>Sternula nereis</i>	BIRD	
<i>Ocyphaps lophotes</i>	BIRD	
<i>Tringa brevipes</i>	BIRD	MI & P4
<i>Phalacrocorax varius</i>	BIRD	
<i>Charadrius ruficapillus</i>	BIRD	
<i>Calidris ruficollis</i>	BIRD	MI
<i>Tringa nebularia</i>	BIRD	MI
<i>Charadrius leschenaultii</i>	BIRD	VU
<i>Pelecanus conspicillatus</i>	BIRD	
<i>Zosterops lateralis</i>	BIRD	
<i>Pandion haliaetus</i>	BIRD	MI
<i>Sterna hirundo</i>	BIRD	MI
<i>Dromaius novaehollandiae</i>	BIRD	
<i>Malurus lamberti</i>	BIRD	
<i>Psophodes occidentalis</i>	BIRD	
<i>Sericornis frontalis</i>	BIRD	
<i>Falco longipennis</i>	BIRD	
<i>Epthianura aurifrons</i>	BIRD	
<i>Larus pacificus</i>	BIRD	
<i>Oreoica gutturalis</i>	BIRD	
<i>Drymodes brunneopygia</i>	BIRD	
<i>Calidris tenuirostris</i>	BIRD	CR
<i>Taeniopygia guttata</i>	BIRD	
<i>Streptopelia senegalensis</i>	BIRD	
<i>Acanthagenys rufogularis</i>	BIRD	
<i>Acanthiza apicalis</i>	BIRD	
<i>Lichenostomus virescens</i>	BIRD	
<i>Malurus leucopterus</i>	BIRD	
<i>Calidris ferruginea</i>	BIRD	CR
<i>Megalurus gramineus</i>	BIRD	
<i>Phalacrocorax carbo</i>	BIRD	
<i>Podiceps cristatus</i>	BIRD	
<i>Falco cenchroides</i>	BIRD	

TAXON	CLASS	CONS
<i>Petroica goodenovii</i>	BIRD	
<i>Certhionyx variegatus</i>	BIRD	
<i>Epthianura albifrons</i>	BIRD	
<i>Tadorna tadornoides</i>	BIRD	
<i>Sterna dougallii</i>	BIRD	MI
<i>Falco berigora</i>	BIRD	
<i>Corvus coronoides</i>	BIRD	
<i>Mirafra javanica</i>	BIRD	
<i>Gerygone fusca</i>	BIRD	
<i>Epthianura tricolor</i>	BIRD	
<i>Rhipidura leucophrys</i>	BIRD	
<i>Anas superciliosa</i>	BIRD	
<i>Melopsittacus undulatus</i>	BIRD	
<i>Calidris acuminata</i>	BIRD	MI
<i>Phalacrocorax sulcirostris</i>	BIRD	
<i>Dicaeum hirundinaceum</i>	BIRD	
<i>Purnella albifrons</i>	BIRD	
<i>Coracina novaehollandiae</i>	BIRD	
<i>Charadrius mongolus</i>	BIRD	EN
<i>Grallina cyanoleuca</i>	BIRD	
<i>Phaps chalcoptera</i>	BIRD	
<i>Zosterops luteus</i>	BIRD	
<i>Anhinga novaehollandiae</i>	BIRD	
<i>Arenaria interpres</i>	BIRD	MI
<i>Petrochelidon ariel</i>	BIRD	
<i>Calidris canutus</i>	BIRD	EN
<i>Gerygone tenebrosa</i>	BIRD	
<i>Limosa limosa</i>	BIRD	MI
<i>Neophema petrophila</i>	BIRD	
<i>Corvus orru</i>	BIRD	
<i>Ardea modesta</i>	BIRD	
<i>Cladorhynchus leucocephalus</i>	BIRD	
<i>Numenius madagascariensis</i>	BIRD	CR
<i>Colluricincla harmonica</i>	BIRD	
<i>Haliaeetus leucogaster</i>	BIRD	
<i>Todiramphus sanctus</i>	BIRD	
<i>Chroicocephalus novaehollandiae</i>	BIRD	
<i>Accipiter cirrocephalus</i>	BIRD	
<i>Actitis hypoleucos</i>	BIRD	MI
<i>Accipiter fasciatus</i>	BIRD	
<i>Cincloramphus mathewsi</i>	BIRD	
<i>Geopelia cuneata</i>	BIRD	
<i>Pachycephala rufiventris</i>	BIRD	
<i>Microcarbo melanoleucos</i>	BIRD	
<i>Cheramoeca leucosterna</i>	BIRD	
<i>Egretta novaehollandiae</i>	BIRD	
<i>Eolophus roseicapillus</i>	BIRD	
<i>Haliastur sphenurus</i>	BIRD	
<i>Artamus cinereus</i>	BIRD	
<i>Egretta garzetta</i>	BIRD	

TAXON	CLASS	CONS
<i>Tringa stagnatilis</i>	BIRD	MI
<i>Thalasseus bengalensis</i>	BIRD	
<i>Amytornis textilis subsp. textilis</i>	BIRD	P4
<i>Malurus leucopterus subsp. leucopterus</i>	BIRD	VU
<i>Calidris canutus subsp. rogersi</i>	BIRD	
<i>Sericornis frontalis subsp. balstoni</i>	BIRD	
<i>Sterna hirundo subsp. longipennis</i>	BIRD	
<i>Malurus splendens</i>	BIRD	
<i>Malurus sp.</i>	BIRD	
<i>Leipoa ocellata</i>	BIRD	VU
<i>Macronectes giganteus</i>	BIRD	MI
<i>Calamanthus campestris</i>	BIRD	
<i>Cracticus torquatus</i>	BIRD	
<i>Elsyornis melanops</i>	BIRD	
<i>Cacatua sanguinea</i>	BIRD	
<i>Merops ornatus</i>	BIRD	
<i>Cymbacephalus nematophthalmus</i>	FISH	
<i>Amniataba caudavittata</i>	FISH	
<i>Lissocampus fatiloquus</i>	FISH	
<i>Amblygobius phalaena</i>	FISH	
<i>Apogon rueppellii</i>	FISH	
<i>Paracentropogon vespa</i>	FISH	
<i>Drombus lepidothorax</i>	FISH	
<i>Scobinichthys granulatus</i>	FISH	
<i>Neopomacentrus anabatoides</i>	FISH	
<i>Saurida undosquamis</i>	FISH	
<i>Chelmon marginalis</i>	FISH	
<i>Pelates quadrilineatus</i>	FISH	
<i>Colurodontis paxmani</i>	FISH	
<i>Paraplotosus albilabris</i>	FISH	
<i>Heteroclinus sp.</i>	FISH	
<i>Nematalosa sp.</i>	FISH	
<i>Negaprion acutidens</i>	FISH	
<i>Pelates octolineatus</i>	FISH	
<i>Assiculus punctatus</i>	FISH	
<i>Yongeichthys nebulosus</i>	FISH	
<i>Petroscirtes breviceps</i>	FISH	
<i>Microcanthus strigatus</i>	FISH	
<i>Siganus fuscescens</i>	FISH	
<i>Scaevius milii</i>	FISH	
<i>Stigmatopora nigra</i>	FISH	
<i>Choerodon sp.</i>	FISH	
<i>Apogon cookii</i>	FISH	
<i>Sillago vittata</i>	FISH	
<i>Psenopsis sp.</i>	FISH	
<i>Centrogenys vaigiensis</i>	FISH	
<i>Oplopomus oplopomus</i>	FISH	
<i>Omobranchus rotundiceps</i>	FISH	
<i>Eviota sp.</i>	FISH	
<i>Monacanthus chinensis</i>	FISH	

TAXON	CLASS	CONS
<i>Craterocephalus mugiloides</i>	FISH	
<i>Lophiocharon trisignatus</i>	FISH	
<i>Platycephalus sp.</i>	FISH	
<i>Siphamia cuneiceps</i>	FISH	
<i>Congrogadus subducens</i>	FISH	
<i>Apogon victoriae</i>	FISH	
<i>Lepadichthys sandaracatus</i>	FISH	
<i>Valenciennesa alleni</i>	FISH	
<i>Anacanthus barbatus</i>	FISH	
<i>Torquigener pleurogramma</i>	FISH	
<i>Pseudorhombus arsius</i>	FISH	
<i>Sillago berrus</i>	FISH	
<i>Neotrygon ningalooensis</i>	FISH	
<i>Herklotsichthys koningsbergeri</i>	FISH	
<i>Molycrria bicincta</i>	INVERT	
<i>Nephila edulis</i>	INVERT	
<i>Urodacus hartmeyeri</i>	INVERT	
<i>Cryptoerithus quobba</i>	INVERT	
<i>Pentasteron intermedium</i>	INVERT	
<i>Latrodectus hasseltii</i>	INVERT	
<i>Austracantha minax</i>	INVERT	
<i>Austrammo harveyi</i>	INVERT	
<i>Dugong dugon</i>	MAMMAL	MI
<i>Tursiops aduncus</i>	MAMMAL	MI
<i>Megaptera novaeangliae</i>	MAMMAL	CD & MI
<i>Sousa chinensis</i>	MAMMAL	MI & P4
<i>Bettongia penicillata subsp. ogilbyi</i>	MAMMAL	CR
<i>Lagostrophus fasciatus subsp. fasciatus</i>	MAMMAL	VU
<i>Mus musculus</i>	MAMMAL	
<i>Nyctophilus geoffroyi</i>	MAMMAL	
<i>Notomys alexis</i>	MAMMAL	
<i>Tursiops sp.</i>	MAMMAL	
<i>Tursiops truncatus</i>	MAMMAL	
<i>Sminthopsis dolichura</i>	MAMMAL	
<i>Macropus robustus subsp. erubescens</i>	MAMMAL	
<i>Caretta caretta</i>	REPTILE	EN
<i>Chelonia mydas</i>	REPTILE	VU
<i>Aipysurus pooleorum</i>	REPTILE	
<i>Eretmochelys imbricata</i>	REPTILE	VU
<i>Hydrophis elegans</i>	REPTILE	
<i>Disteira major</i>	REPTILE	
<i>Aspidites ramsayi subsp. (southwest subpop.)</i>	REPTILE	P1
<i>Lerista planiventralis</i>	REPTILE	
<i>Egernia stokesii subsp. badia</i>	REPTILE	VU
<i>Lerista uniduo</i>	REPTILE	
<i>Tiliqua rugosa subsp. palarra</i>	REPTILE	
<i>Lucasium alboguttatum</i>	REPTILE	
<i>Gehyra variegata</i>	REPTILE	
<i>Lerista varia</i>	REPTILE	
<i>Hydrophis major</i>	REPTILE	

TAXON	CLASS	CONS
<i>Menetia greyii</i>	REPTILE	
<i>Lerista praepedita</i>	REPTILE	
<i>Lerista lineopunctulata</i>	REPTILE	
<i>Lerista planiventralis subsp. decora</i>	REPTILE	
<i>Simoselaps littoralis</i>	REPTILE	
<i>Lerista micra</i>	REPTILE	
<i>Ctenotus fallens</i>	REPTILE	
<i>Ctenophorus reticulatus</i>	REPTILE	
<i>Heteronotia binoei</i>	REPTILE	
<i>Lerista macropisthopus subsp. fusciceps</i>	REPTILE	
<i>Aspidites ramsayi</i>	REPTILE	
<i>Lerista connivens</i>	REPTILE	
<i>Lerista elegans</i>	REPTILE	
<i>Ramphotyphlops grypus</i>	REPTILE	
<i>Demansia calodera</i>	REPTILE	

DBCA Database Search

Conservation Significant Fauna Recorded within 10km of Survey Area

Common Name	Scientific Name	Class	WAsstatus	EPBCstatus
Caspian Tern	<i>Hydroprogne caspia</i>	BIRD	MI	MI
Crested tern	<i>Thalasseus bergii</i>	BIRD	MI	MI
Grey plover	<i>Pluvialis squatarola</i>	BIRD	MI	MI
Lesser Sand Plover	<i>Charadrius mongolus</i>	BIRD	EN	MI
Bar-tailed godwit	<i>Limosa lapponica</i>	BIRD	MI	MI
Common greenshank	<i>Tringa nebularia</i>	BIRD	MI	MI
Red-necked stint	<i>Calidris ruficollis</i>	BIRD	MI	MI
Great knot	<i>Calidris tenuirostris</i>	BIRD	CR	MI
Western grasswren, thick-billed grasswren (western)	<i>Amytornis textilis textilis</i>	BIRD	P4	
Whimbrel	<i>Numenius phaeopus</i>	BIRD	MI	MI
Osprey	<i>Pandion haliaetus</i>	BIRD	MI	MI
Greater sand plover, large sand plover	<i>Charadrius leschenaultii</i>	BIRD	VU	MI
Grey-tailed tattler	<i>Tringa brevipes</i>	BIRD	MI & P4	MI
Common tern	<i>Sterna hirundo</i>	BIRD	MI	MI
Ruddy turnstone	<i>Arenaria interpres</i>	BIRD	MI	MI
Red knot	<i>Calidris canutus</i>	BIRD	EN	EN
Eastern curlew	<i>Numenius madagascariensis</i>	BIRD	CR	CR
Curlew Sandpiper	<i>Calidris ferruginea</i>	BIRD	CR	MI
Malleefowl	<i>Leipoa ocellata</i>	BIRD	VU	VU
Roseate tern	<i>Sterna dougallii</i>	BIRD	MI	MI
Black-tailed godwit	<i>Limosa limosa</i>	BIRD	MI	MI
Marsh sandpiper	<i>Tringa stagnatilis</i>	BIRD	MI	MI
Southern giant petrel	<i>Macronectes giganteus</i>	BIRD	MI	EN
Dugong	<i>Dugong dugon</i>	MAMMAL	MI	
loggerhead turtle	<i>Caretta caretta</i>	REPTILE	EN	EN
Green turtle	<i>Chelonia mydas</i>	REPTILE	VU	VU
Hawksbill turtle	<i>Eretmochelys imbricata</i>	REPTILE	VU	VU
Humpback whale	<i>Megaptera novaeangliae</i>	MAMMAL	CD & MI	VU
Fork-tailed Swift, Pacific Swift	<i>Apus pacificus</i>	BIRD	MI	MI

Common Name	Scientific Name	Class	WAstatus	EPBCstatus
Woma (southwest subpop.)	<i>Aspidites ramsayi</i> (southwest subpop.)	REPTILE	P1	
Dirk Hartog black and white fairy-wren	<i>Malurus leucopterus leucopterus</i>	BIRD	VU	VU
Green Turtle	<i>Chelonia mydas</i>	REPTILE	VU	VU & MI
Banded Hare-wallaby, Mernine	<i>Lagostrophus fasciatus fasciatus</i>	MAMMAL	VU	VU
Western Spiny-tailed Skink	<i>Egernia stokesii badia</i>	REPTILE	VU	EN
Woylie, Brush-tailed Bettong	<i>Bettongia penicillata ogilbyi</i>	MAMMAL	CR	EN
Loggerhead Turtle	<i>Caretta caretta</i>	REPTILE	EN	EN & MI



Australian Government

Department of Climate Change, Energy,
the Environment and Water

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. Please see the caveat for interpretation of information provided here.

Report created: 02-Sep-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

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[Acknowledgements](#)

Summary

Matters of National Environment 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 (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	35
Listed Migratory Species:	51

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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	76
Whales and Other Cetaceans:	10
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	3
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	2
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

Name	State	Legal Status
Shark Bay, Western Australia	WA	Declared property

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status
Natural		
Shark Bay, Western Australia	WA	Listed place

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	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
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	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
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	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

Scientific Name	Threatened Category	Presence Text
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
FISH		
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
MAMMAL		
Bettongia penicillata ogilbyi Woylie [66844]	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
PLANT		
Eucalyptus beardiana Beard's Mallee [18933]	Vulnerable	Species or species habitat may occur within area
REPTILE		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	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
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	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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Egernia stokesii badia Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

SHARK

Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	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
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species	[Resource Information]
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Scientific Name	Threatened Category	Presence Text
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Migratory Marine Birds

Anous stolidus Common Noddy [825]		Species or species habitat may 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

Scientific Name	Threatened Category	Presence Text
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	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
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may 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	Species or species habitat known to occur within area
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		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
Arenaria interpres Ruddy Turnstone [872]		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 alba Sanderling [875]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Pluvialis squatarola Grey Plover [865]		Species or species habitat known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris alba Sanderling [875]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Pluvialis squatarola Grey Plover [865]		Species or species habitat known to occur within area overfly marine area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	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
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur within area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area
Xenus cinereus Terek Sandpiper [59300]		Species or species habitat known to occur within area overfly marine area
Fish		
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		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 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
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		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
Mammal		
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Reptile		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	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
Aipysurus pooleorum Shark Bay Seasnake [66061]		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

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat 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
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat 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]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
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
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		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 truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Habitat Critical to the Survival of Marine Turtles

Scientific Name	Behaviour	Presence
Nov-Feb		
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Protected Area Name	Reserve Type	State
Monkey Mia Reserve	5(1)(h) Reserve	WA
Shark Bay	Marine Park	WA
Unnamed WA49144	Conservation Park	WA

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State
Shark Bay East	WA

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Clearing of vegetation for borrow pit and infrastructure areas	2017/7947	Not Controlled Action	Completed
Expansion of Monkey Mia Resort	2003/1146	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed

Biologically Important Areas

Scientific Name	Behaviour	Presence
Seabirds		
Ardeanna pacifica		
Wedge-tailed Shearwater [84292]	Breeding	Known to occur

Whales

Megaptera novaeangliae		
Humpback Whale [38]	Migration (north and south)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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.

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APPENDIX C

OBSERVED FAUNA

Observed Fauna

Monkey Mia, 4-7 August 2023

Approx. centroid = -25.800324°S 113.713914°E

Compiled by Greg Harewood - Aug 2023

Recorded (Sighted/Heard/Signs) = X

Class Family Species	Common Name	Conservation Status	Survey Area	Surrounds
Aves				
Casuariidae Emus, Cassowaries				
<i>Dromaius novaehollandiae</i>	Emu	LC	X	X
Anatidae Geese, Swans, Ducks				
<i>Tadorna tadornoides</i>	Australian Shelduck	LC		X
Pelecanidae Pelicans				
<i>Pelecanus conspicillatus</i>	Australian Pelican	LC		X
Falconidae Falcons				
<i>Falco cenchroides</i>	Australian Kestrel	LC		X
<i>Falco longipennis</i>	Australian Hobby	LC		X
Laridae Gulls, Terns				
<i>Larus novaehollandiae</i>	Silver Gull	LC		X
<i>Sterna caspia</i>	Caspian Tern	Mig CA JA LC		X
Columbidae Pigeons, Doves				
<i>Streptopelia senegalensis</i>	Laughing Turtle-Dove	Introduced		X
Psittacidae Parrots				
<i>Cacatua roseicapilla</i>	Galah	LC		X
Cuculidae Parasitic Cuckoos				
<i>Chrysococcyx osculans</i>	Black-eared Cuckoo	LC		X

BC Act Status - S1 to S7, EPBC Act Status - CR = Critically Endangered, EN = Endangered, VU = Vulnerable, EX = Extinct, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <https://www.iucnredlist.org/resources/categories-and-criteria> for others.

Class Family Species	Common Name	Conservation Status	Survey Area	Surrounds
Maluridae Fairy Wrens, GrassWrens				
<i>Amytornis textilis textilis</i>	Thick-billed Grasswren	P4		X
<i>Malurus lamberti</i>	Variiegated Fairy-wren	LC	X	X
<i>Malurus leucopterus</i>	White-winged Fairy-wren	LC	X	X
Acanthizidae Thornbills, Geryones, Fieldwrens & Whitefaces				
<i>Acanthiza apicalis</i>	Broad-tailed Thornbill	LC	X	
<i>Gerygone fusca</i>	Western Gerygone	LC		X
<i>Sericornis maculatus</i>	Spotted Scrubwren	LC	X	X
Meliphagidae Honeyeaters, Chats				
<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater	LC	X	X
<i>Epthianura albifrons</i>	White-fronted Chat	LC		X
<i>Lichenostomus virescens</i>	Singing Honeyeater	LC	X	X
Petroicidae Australian Robins				
<i>Eopsaltria griseogularis</i>	Western Yellow Robin	LC	X	
Pomatostomidae Babblers				
<i>Pomatostomus superciliosus</i>	White-browed Babbler	LC	X	X
Cinclosomatidae Whippbirds, Wedgebills, Quail Thrushes				
<i>Psophodes occidentalis</i>	Chiming Wedgebill	LC	X	X
Pachycephalidae Crested Shrike-tit, Crested Bellbird, Shrike Thrushes, Whistlers				
<i>Colluricincla harmonica</i>	Grey Shrike-thrush	LC		X
<i>Oreoica gutturalis</i>	Crested Bellbird	LC		X

BC Act Status - S1 to S7, EPBC Act Status - CR = Critically Endangered, EN = Endangered, VU = Vulnerable, EX = Extinct, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <https://www.iucnredlist.org/resources/categories-and-criteria> for others.

Class Family Species	Common Name	Conservation Status	Survey Area	Surrounds
Dicruridae				
Monarchs, Magpie Lark, Flycatchers, Fantails, Drongo				
<i>Rhipidura fuliginosa</i>	Grey Fantail	LC	X	X
<i>Rhipidura leucophrys</i>	Willie Wagtail	LC	X	X
Corvidae				
Ravens, Crows				
<i>Corvus bennetti</i>	Little Crow	LC		X
Motacillidae				
Old World Pipits, Wagtails				
<i>Anthus australis</i>	Australian Pipit	LC		X
Hirundinidae				
Swallows, Martins				
<i>Hirundo neoxena</i>	Welcome Swallow	LC	X	X
<i>Hirundo nigricans</i>	Tree Martin	LC		X
Zosteropidae				
White-eyes				
<i>Zosterops lateralis</i>	Silvereye	LC	X	X
Mammalia				
Tachyglossidae				
Echidnas				
<i>Tachyglossus aculeatus</i>	Echidna	LC		X
Macropodidae				
Kangaroos, Wallabies				
<i>Osphranter robustus</i>	Euro	LC	X	X
Bovidae				
Horned Ruminants				
<i>Capra hircus</i>	Goat	Introduced	X	X
Leporidae				
Rabbits, Hares				
<i>Oryctolagus cuniculus</i>	Rabbit	Introduced	X	X

BC Act Status - S1 to S7, EPBC Act Status - CR = Critically Endangered, EN = Endangered, VU = Vulnerable, EX = Extinct, DBCA Priority Status - P1 to P4, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <https://www.iucnredlist.org/resources/categories-and-criteria> for others.

DISCLAIMER

This fauna assessment report (“the report”) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Greg Harewood (“the Author”). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. In accordance with the scope of services, the Author has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

The conclusions are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

Within the limitations imposed by the scope of services, the field assessment and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

In preparing the report, the Author has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report (“the data”). Except as otherwise stated in the report, the Author has not verified the accuracy of completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (“conclusions”) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. The Author will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented, or otherwise not fully disclosed to the Author.

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