



COTERRA  
ENVIRONMENT

## **Construction Management Plan**

### **RAC Ningaloo Reef Resort**

Rev 0

January 2024



CALIBRE | COMMITMENT | COLLABORATION

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# 1 Introduction

## 1.1 Background

The RAC Tourism Assets Pty Ltd (RAC) currently operates the RAC Ningaloo Reef Resort, located on Robinson Street, Coral Bay in the Shire of Carnarvon (the Shire). RAC proposes to redevelop the resort, to encompass Lots 1 (No. 14), 54 (No. 6) and 68 (No. 2) Robinson Street and construct a temporary accessway to the south of the resort as an extension to Banksia Drive (collectively, the site; Figure 1). Redevelopment of the resort will grow the number of available holiday units from 34 to 90, and provide new community facilities such as additional parking bays for beach access, electric vehicle charging stations and function spaces (RAC, 2023; Appendix 1).

Approval for the proposed development under the *Planning and Development Act 2005* (PD Act) has been achieved through a Development Approval from the Shire of Carnarvon. Condition 29 of the approval states that:

*‘Prior to the issue of a building permit, a Construction Management Plan (CMP) shall be submitted to and approved by the Shire. The CMP shall be implemented and maintained throughout the construction to the satisfaction of the Shire. The CMP shall include but is not limited to the following:*

- a) Dust suppression and erosion control measures to be implemented during construction.;*
- b) Measures to be implemented to prevent public access to the construction site;*
- c) Details of the temporary construction access via Banksia Drive and the management of construction vehicles/plant to and from the site;*
- d) How construction shall limit and preferably eliminate construction vehicle access to the site via Robinson Street;*
- e) Methodologies to implement the target 80% construction and demolition waste diverted from landfill;*
- f) Methodologies to ensure the Coral Bay Waste Facility total annual received waste does not exceed 5000 tonnes; and*
- g) Cyclone management plan during construction phase of the development.*

This CMP has been prepared to meet the requirements of condition 29 above. It should be noted that items (e) and (f) are addressed in a separate Waste Management Plan (Encycle 2023), which should be read in conjunction with this CMP.

## 1.2 Objective and scope

The objective of this CMP is to ensure the effective management of the site and its surrounds during the construction phases of development, such that potential impacts on the environment or other sensitive receptors are effectively mitigated. The scope of this CMP includes:

- Description of the nature of works (Section 1.4)
- Review of the existing environment (Section 2)
- Identification and risk assessment of potential environmental impacts (Section 3)
- Management, mitigation and contingency measures to limit environmental impacts (Sections 4 to 6)

## 1.3 Policy and Planning Considerations

This CMP has been developed in line with the requirements set out in the following policy and guidance documents:

- Environmental Management Plan Guidelines (Department of Environment, 2014)

- A Guideline for managing impacts of dust and associated contaminants from land development sites, contaminated sites, remediation and other related activities (Department of Environment and Conservation (DEC), 2021).

## 1.4 Proposed Construction and Development Works

RAC is investing more than \$70 million to undertake this major redevelopment of the RAC Ningaloo Reef Resort. The redevelopment will involve the demolition of the current ageing resort to make way for 90 units ranging from 1 bedroom standard rooms to 3 bedroom family options.

Initial redevelopment works will commence in late summer to early autumn of 2024, with demolition and construction activities anticipated to take approximately 24 months to complete.

The redevelopment will necessitate minor clearing of native vegetation, approval for which is being sought under Part V of the *Environmental Protection Act 1986* (EP Act).

## 2 Existing Environment

### 2.1 Climate

#### 2.1.1 Temperature

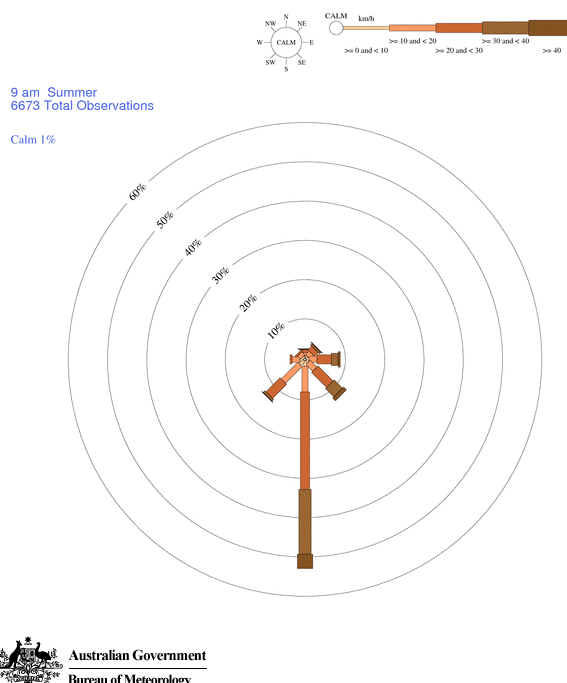
The climate in Coral Bay is generally warm and dry throughout the year. The closest Bureau of Meteorology (BoM) weather station to the site is Learmonth Airport (Site 005007; located approximately 78 km east). Mean maximum temperatures in this location range from 24.7°C (July) to 40.6°C (January). Mean minimum temperatures range from 10.4°C (July) to 23.3°C (February) (BoM 2024). Located on the coast, Coral Bay experiences prevailing south westerly winds which generally result in cooler temperatures than those experienced inland.

#### 2.1.2 Rainfall

Average annual rainfall at Cardabia station (approximately 5.2 km from the site) is 225.7 mm, falling primarily in May and June (BoM 2024)

#### 2.1.3 Wind

The nearest location to Coral Bay with wind records of at least 15 years, and which has a westerly coast is Carnarvon (BoM 2024). Predominant wind conditions at this location include morning southerly (Plate 1) and afternoon south westerly (Plate 2) winds during summer. Winter wind directions predominately come from an easterly direction on winter mornings (Plate 3), and south westerly in the afternoon (Plate 4). More accurate wind direction records are made at the Coral Bay Airport, which has recorded winds coming from a predominately south and south westerly direction in the recent spring months (BoM 2024), which suggests that wind conditions at Coral Bay are comparable to those of Carnarvon.



**Plate 1: Summer Morning Wind Rose**



3 pm Summer  
6606 Total Observations

Calm %

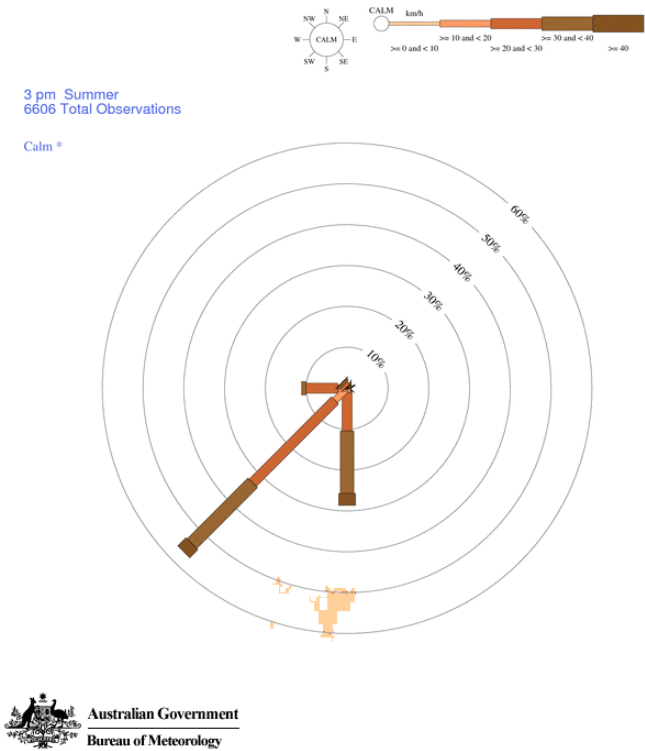


Plate 2: Summer Afternoon Wind Rose

9 am Jul  
2267 Total Observations

Calm 5%

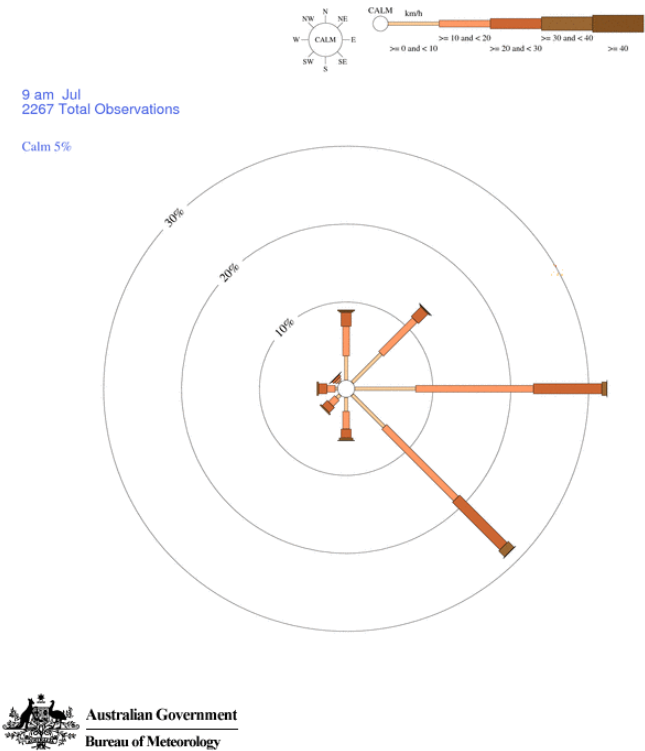
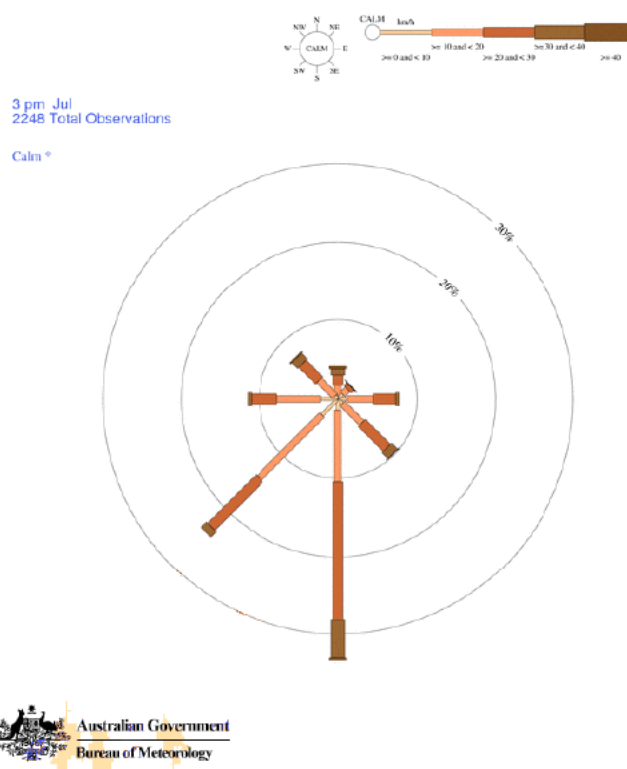


Plate 3: Winter Morning Wind Rose



**Plate 4: Winter Afternoon Wind Rose**

## 2.1.4 Cyclones

### 2.1.4.1 Overview

A cyclone is defined when a tropical low produces wind gusts more than 90 kilometres per hour (km/hr) around its centre, with severe tropical cyclones reaching winds above 166 km/hr. Tropical cyclones can continue for up to several weeks and often have unpredictable pathways (DFES, undated).

On average, one or two severe tropical cyclones may cross the Western Australian coastline during cyclone season (from 1 November to 30 April, annually), but can occur at any time of the year (Shire of Carnarvon, 2024). The Shire of Carnarvon is located within the highest risk region (Wind region D), requiring any structure that is built to be of a standard that withholds cyclonic wind conditions.

#### 2.1.4.2 Cyclone categories

The BoM outlines five categories of tropical cyclones, with Category 5 being the highest. Cyclone categories are grouped by wind speed (Table 1).

All cyclone categories can be dangerous. Extreme wind, heavy rainfall and damaging storm surges can inundate low-lying coastal areas (BoM, 2024).

**Table 1: Cyclone Categories**

Category	Description	Maximum wind speeds	Strongest gust speeds
<b>Category 1</b>	Damaging winds, negligible house damage, damage to some crops, trees and caravans.	63 – 88 km/hr	Up to 125 km/hr

Category	Description	Maximum wind speeds	Strongest gust speeds
<b>Category 2</b>	Destructive winds, minor house damage, significant damage to signs, trees and caravans, heavy damage to some crops. Risk of power failure.	89 – 117 km/hr	125 - 164 km/hr
<b>Category 3</b>	Very destructive winds, some roof and structural damage, some caravans destroyed, significant damage to crops and trees. Likely power failure.	118 – 159 km/hr	165 - 334 km/hr
<b>Category 4</b>	Significant roofing loss and structural damage, many caravans destroyed and blown away, extensive damage to vegetation. Dangerous airborne debris and widespread power failures.	160 – 199 km/hr	225 – 279 km/hr
<b>Category 5</b>	Extremely dangerous with widespread destruction of buildings and vegetation.	>200 km/hr	>279 km/hr

Source: BoM, 2024

## 2.2 Topography and Soils

Topography across the site is generally flat, with a maximum elevation of approximately 10 m Australian Height Datum (mAHD) (Department of Water and Environmental Regulation (DWER), 2024; Figure 2).

Regional geological mapping indicates that soils at the site are represented by the 'Coastal Dune (204Cs)' system, being described as 'Large coastal dunes (some unvegetated) with narrow swales, limestone plains, wave-cut platforms and beaches, supporting diverse tall and low shrublands' (Department of Primary Industries and Regional Development (DPIRD), 2024).

The site is not mapped as being at risk for Acid Sulphate Soils (Landgate, 2024).

## 2.3 Ground and Surface Water

Hydrological investigations (Galt, 2018) have recorded groundwater occurring at depths of between 3.2 to 4.4 m below ground level (mBGL). Groundwater levels at this location are considered to correspond with sea level and may be influenced by tidal movements. The site maintains one groundwater licence (No. 151681), with an allocation of 200,000 KL, expiring on 23/12/2025 (DWER, 2024).

The site does not contain any existing surface water or wetland features. Surface water flow during a major rainfall event is toward Robinson Street, where it is collected by roadside kerbing (Pritchard Francis, 2022). It is noted that the first 15 mm rainfall event (equating to a 2 year 15 minute storm event) is to be detained on-site via localised swales or basins, following the resort's redevelopment.

The site is approximately 50 m from the Ningaloo Marine Park at its closest point. Redevelopment of the resort will not decrease separation distance of the resort to the Ningaloo Marine Park.

## 2.4 Vegetation and Flora

Broadscale mapping of vegetation was undertaken by Beard (1975) to define boundaries by vegetation systems and associations. The site is within the boundary of the Coastal Dunes 662 system association, described as 'Hummock grassland with scattered low trees over dwarf shrubs or mixed sort grass and spinifex

(Triodia) mixed species' (Beard, 1975). This vegetation association occurs currently at 99.11% (total of 278,627 ha) of its original extent in Western Australia (Government of Western Australia, 2019).

Vegetation mapping of the site by Coterra (2019) recorded the following vegetation types present (Figure 3):

- AsMm: *Acacia sclerosperma* subsp. *sclerosperma*, (*Myoporum montanum*) open to closed scrub over *Rhagodia preissii* subsp. *obovata* scattered shrubs over \**Cenchrus ciliaris* open grassland (forms a grassland around the scrub). Associated species include *Acacia coriacea* subsp. *Coriacea*, *Stylobasium spathulatum*, *Abutilon cunninghamii* and *Threlkeldia diffusa*
- AcAoRp: *Acacia coriacea* subsp. *coriacea*, *Alectryon oleifolius* subsp. *oleifolius*, *Acacia tetragonophylla*, *Rhagodia preissii* subsp. *obovata* open shrubland over *Roepera fruticulosa*, *Senna glutinosa* subsp. *chatelainiana*, *Scaevola tomentosa*, *Threlkeldia diffusa* scattered low shrubs over \**Cenchrus ciliaris* grassland

The majority of the site is mapped as being in a 'completely degraded' condition and devoid of native vegetation, in association with the current resort and informal access tracks (Figure 4).

One *Acacia ryaniana* (Priority 2) individual was recorded during the 2019 survey within the site boundary.

## 2.5 Fauna and Habitat

The fauna assessment undertaken by Western Ecological in 2019 did not record the presence of any conservation significant fauna species (Table 2).

The entirety of the existing resort's footprint does not contain any fauna habitat (Western Ecological, 2019; Figure 5). Small patches of dune habitat correlate to patches of remnant vegetation located outside of the current resort area and may be impacted by the Banksia Drive temporary accessway construction only.

**Table 2: Fauna presence at site**

Group	Comments
Amphibians	<ul style="list-style-type: none"> <li>• None recorded</li> </ul>
Birds	<ul style="list-style-type: none"> <li>• Desktop assessment recorded the potential for two conservation significant species to utilise the area, these being the Fork tailed swift (<i>Apus pacificus</i>) and the Barn swallow (<i>Hirundo rustica</i>)</li> <li>• Seventeen bird species were recorded during the survey, two of which were recorded in the site area (being the Zebra finch – <i>Taeniopygia guttata</i> and the brown honeyeater- <i>Lichmera indistincta</i>), and eleven of which were recorded across the general Coral Bay area</li> </ul>
Reptiles	<ul style="list-style-type: none"> <li>• One <i>Ctenophorus</i> sp.</li> <li>• One Sand goanna (<i>Varanus gouldii</i>)</li> <li>• Records of agamid burrows in proximity to the site</li> </ul>
Mammals	<ul style="list-style-type: none"> <li>• One mammal species was recorded, being the red kangaroo (<i>Macropus rufus</i>)</li> </ul>

Source: Western Ecological, 2019

## 2.6 Heritage

There are no registered Aboriginal or European heritage sites or other Aboriginal heritage Places within the site (DPLH, 2024; Heritage Council, 2024). The nearest Registered Site is located approximately 500 m east of the proposed redevelopment, and is listed as Artefacts / scatter, Midden / Scatter (Place ID 6616).

## 2.7 Bushfire

The site is located within a bushfire prone area, as mapped by the Department of Fire and Emergency Services (Landgate, 2024). Bushfire prone areas are defined as being subject to, or likely to be subject to, bushfire attack, and are identified by the presence of and proximity to bushfire prone vegetation. Bushfire prone areas include both the area containing the bushfire prone vegetation and a 100 m buffer zone immediately surrounding it.

To address the risk of bushfire to the development proposal, a dedicated Bushfire Management Plan (BMP) has been developed by Emerge Associates (Emerge, 2023). The approved BMP should be read in conjunction with this CMP.

## 2.8 Conservation Areas

The site is adjacent to Lot 501, which is currently zoned as Foreshore Reserve under the Shire of Carnarvon Local Planning Scheme 13 (LPS 13). The reserve extends north to include Lot 45 on the opposing side of Robinson Street and is vested in the Conservation and Parks Commission of Western Australia, managed by the Department of Biodiversity, Conservation and Attractions (DBCA).

The marine environment surrounding Coral Bay forms part of the Ningaloo World Heritage Area, a World Heritage Listing covering 604,500 ha of the marine environment, spanning 300 km along the Western Australian Coast. While the Ningaloo World Heritage Area encompasses a number of marine parks and reserves, the coastal area around Coral Bay comprises the Ningaloo Marine Park, a Class A reserve vested with the Conservation and Parks Commission and managed by DBCA. The Marine Park is separated by the site by approximately 50 m of roadway, remnant vegetation and beach land at its closest point.



### 3 Construction Risks and Impacts

Construction phases of development can potentially cause or be subject to several impacts. These have been identified as:

1. Generation of dust through machinery movement and construction processes
2. Excessive emissions of noise and vibration
3. Erosion of soils post-clearing and demolition
4. Unauthorized public access into the construction site
5. The clearing of native vegetation and fauna habitat
6. Displacement or injury of fauna
7. Construction site access
8. Cyclones
9. Bushfires

An assessment of the potential impacts and risks associated with construction activities has been undertaken (section 3.1). Results of the risk assessment have been used to develop management, monitoring and contingency actions that form part of this CMP.

#### 3.1 Risk assessment

##### 3.1.1 Potential Dust Emissions

To assess the risk of dust emissions during construction, a site risk assessment for uncontaminated land was undertaken in accordance with DEC (2011) guidelines (Table 3, Table 4). The allocated score for the site is 384, which results in the site being defined as Classification 2, and being of low risk for dust management actions, monitoring requirements, and contingencies. Management actions associated with this risk classification are discussed in Section 4.

**Table 3: Dust Risk Assessment: Part A Assessment Criteria - Nature of Site**

Item	Score Options				Allocated Score
1. Nuisance potential of soil, when disturbed	Very Low	Low	Medium	High	1
	1	2	4	6	
2. Topography and protection provided by undisturbed vegetation	Sheltered and Screened	Medium Screening	Little Screening	Exposed and Wind Prone	6
	1	6	12	18	
3. Area of site disturbed by the works	Less than 1 ha	Between 1 and 5 ha	Between 5 and 10 ha	More than 10 ha	3
	1	3	6	9	
4. Type of work being done <sup>1</sup>	Roads or shallow trenches	Roads, drains and medium depth sewers	Roads, drains, sewers and partial earthworks	Bulk earthworks and deep trenches	6

Item	Score Options				Allocated Score
	1	3	6	9	
Total for Part A					16

**Table 4: Dust Risk Assessment: Part B Assessment Criteria - Proximity to Other Land Uses**

Item	Score Options				Score
1. Distance of other land uses from site	More than 1 km	Between 1 km and 500 m	Between 100 m and 500 m	Less than 100 m	18
	1	6	12	18	
2. Effect of prevailing wind direction (at time of construction) on other land uses	Not affected	Isolated land uses affected by one wind direction	Dense land uses affected by one wind direction	Dense/sensitive land uses highly affected by prevailing winds	6
	1	6	9	12	
Total for Part B					24

### 3.1.2 Overall Risk Summary

For all remaining potential impacts, a qualitative risk assessment was conducted in accordance with the Environmental Management Plan Guidelines (DoE 2014) to assess the risks of impacts associated with the redevelopments' construction. Each risk identified has been provided a likelihood and consequence rating using the criteria in Table 5 and Table 6. These ratings are then combined using Table 7 to generate a risk rating of low, medium, high or severe.

**Table 5: Likelihood definitions**

Qualitative Measures for Likelihood	
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances

**Table 6: Consequence definitions**

Qualitative Measures for consequence	
Minor	Minor incident of environmental damage that can be reversed
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts
High	Substantial instances of environmental damage that could be reversed with intensive efforts
Major	Major loss of environmental amenity and real danger of continuing
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage

**Table 7: Risk Rating**

Likelihood	Consequence				
	Minor	Moderate	High	Major	Critical
Highly likely	Medium	High	High	Severe	Severe
Likely	Low	Medium	High	High	Severe
Possible	Low	Medium	Medium	High	Severe
Unlikely	Low	Low	Medium	High	High
Rare	Low	Low	Low	Medium	High

Source: DoE, 2014

Table 8 provides a summary of the identified matters and potential impacts associated with the construction program. The inherent risk rating outlined on this table identifies the risk without management actions, and the residual risk rating identifies the risk based on implementation of the management actions described in this plan (Section 4).

**Table 8: Risk Assessment**

Item No.	Matter	Potential impacts	Inherent Risk Rating			Residual Risk Rating		
			Likelihood	Consequence	Risk	Likelihood	Consequence	Risk
1	Dust Generation	See Table 3 and Table 4						
2	Noise or vibration generation	Excessive emissions of noise or vibration during construction may impact local amenity and/or fauna behaviour.	Possible	Minor	Low	Unlikely	Minor	Low
2	Erosion	Erosion of cleared landscapes leading to site degradation and impacts to nearby biophysical factors.	Possible	Moderate	Medium	Unlikely	Minor	Low
3	Unauthorized public access	Uncontrolled access to the construction site may result in vandalism or damage to the site or retained vegetation.	Possible	Moderate	Medium	Rare	Moderate	Low
4	Native vegetation clearing	Poor management and/or supervision during construction may lead to the loss of vegetation that could otherwise be retained.	Possible	Moderate	Medium	Unlikely	Moderate	Low
5	Fauna and habitat	Poor management and/or supervision during construction may lead to the loss of habitat for fauna.	Possible	Moderate	Medium	Unlikely	Moderate	Low
		Vehicle interactions resulting in fauna strike.	Possible	Moderate	Medium	Unlikely	Moderate	Low
6	Construction Site Access	Impacts to the surrounding environment due to increased traffic between the site and the Ningaloo Marine Park.	Possible	Moderate	Medium	Rare	Minor	Low
7	Cyclones	Adverse impacts to the safety of on-site personnel, members of the public, and / or property damage.	Possible	Major/Critical	Severe	Possible	Moderate	Medium
9	Bushfire	Construction activities triggering or being suspended by bush fires	Possible	High	Low	Unlikely	Moderate	Low

## 4 Management Actions

Management actions proposed to mitigate potential impacts associated with construction works are provided in Table 9 below.

**Table 9: Management Actions**

No.	Management Action	Timing
<b>Dust Generation</b>		
a)	Dust generating activities will only be undertaken during February to April when wind and potential for dust generation is minimal and when wind speeds are reduced.	During clearing and demolition.
b)	Water carts will be readily available for use on cleared areas for dust suppression, as required.	During clearing and construction.
c)	Temporary wind fencing to be installed if monitoring determines this is required	If required.
d)	Site supervisor to visually monitor dust generation during construction. Should excessive dust generation be detected extending beyond the boundary of the construction site works must cease or be modified to reduce dust emissions.	During clearing and construction.
e)	Stockpile management onsite in relation to dust emissions is to include: <ul style="list-style-type: none"> <li>• Stockpiled material will remain onsite for as short a duration as possible</li> <li>• Stockpile loss will be minimised with the use of covers or other short-term stabilisation techniques such as light water application, or application of 'Dustex' or a similar product, where needed</li> </ul>	During clearing and construction.
<b>Noise and Vibration Generation</b>		
f)	Only undertake clearing and construction works between 0700 and 1900 Monday to Saturday, with no works undertaken on Sunday or public holidays, in line with the <i>Environmental Protection (Noise) Regulations 1997</i> .	During clearing and construction.
g)	Implement and adhere to the Noise Management Plan, to be prepared prior to construction commencing.	During clearing and construction.
<b>Erosion Control</b>		
h)	Ensure that the Bureau of Meteorology website is checked on a daily basis to determine likelihood of any high rainfall / adverse weather conditions. Avoid construction works which have the potential to result in erosion during these times and inspect site after these events for signs of erosion.	During clearing and construction.
i)	Monitor the site for potential signs of erosion. If any erosion is observed take remedial action to repair the area and prevent further erosion occurring.	During clearing and construction.
j)	Ensure construction materials and machinery are secured and appropriately stored overnight.	During clearing and construction.
k)	Stockpile management onsite in relation not potential erosion occurrence is to include: <ul style="list-style-type: none"> <li>• Stockpiles will not be placed on steeply sloping portion</li> <li>• Stockpile slope for loose materials shall not exceed 2:1</li> <li>• Stockpiles will be less than 1.5 m high</li> </ul>	



No.	Management Action	Timing
<b>Access</b>		
l)	Clearly demarcate site area with boundary fencing to prohibit unauthorised access.	Prior to construction and clearing.
m)	<b>Install appropriate signage on boundary fencing (see Plate 5 and Plate 6) advising of restricted access.</b>	In conjunction with fencing construction.
n)	Ensure all access gates remain locked when not in use.	During clearing and construction.
o)	<p><b>Signage will be erected at access points of the site and across boundary fencing. Example signage is shown in Plate 5 and Plate 6, with a legal requirement for the registered builder to include details of the following within the signage:</b></p> <ul style="list-style-type: none"> <li>• Registered builders name</li> <li>• Registration number (as appears on registration certificate)</li> <li>• Contact phone number of the building contractor</li> <li>• Name and registration of nominated site supervisor</li> </ul> <p>All signage is required to be in a prominent position that is clearly accessible to members of the public outside of the site boundary.</p>	During clearing and construction
p)	All access points for the site will be clearly mapped and construction workers informed to ensure safe site entry and egress. It is expected that all construction workers and sub-contractors utilise the Banksia Drive accessway, such that construction traffic is directed away from Robinson Street.	During clearing and construction
<b>Native Vegetation Clearing</b>		
q)	Vegetation identified for retention in the approved masterplan will be clearly delineated.	Prior to clearing.
r)	Clearing boundaries are to be clearly communicated to the clearing contractors, either through the provision of GPS coordinates, site mapping, and discussions during pre-start meetings.	Prior to and during clearing and construction.
<b>Fauna and Habitat</b>		
s)	The boundary of the area subject to clearing and construction is to be surveyed to ensure it is accurately located, and then appropriately demarcated.	During clearing and construction.
t)	Vehicles on-site are to be limited to the clearing and construction area footprints only, to minimise impacts to vegetation beyond this boundary.	During clearing and construction.
u)	Vehicles on-site will be restricted to speeds no greater than 30 km/hour.	During clearing and construction.
v)	Clearing is to be undertaken in a generally slow manner, directed towards areas of retained vegetation to allow any fauna present to naturally disperse	During clearing works
<b>Construction Site Access</b>		
w)	Construction vehicles arriving to / departing from site will utilise the temporary extension of Banksia Drive wherever possible so as to direct access away from Robinson Street and avoid conflicts with tourist traffic	During clearing and construction.
<b>Cyclones</b>		
x)	The construction site must be kept clean and free of unwanted materials and rubbish.	For the duration of clearing and

No.	Management Action	Timing
		construction activities
y)	<p>Store loose materials appropriately to prevent items becoming airborne (i.e. in secured containers or cyclone rated buildings; Plate 7). These include:</p> <ul style="list-style-type: none"> <li>Construction tools, including handheld power tools and larger construction equipment</li> <li>Scaffoldings and temporary scaffolding</li> <li>Fencing and shade cloth</li> <li>Construction site signage</li> </ul>	For the duration of clearing and construction activities
z)	Ensure all site offices and other temporary structures are cyclone rated and securely anchored (see example in Plate 7).	For the duration of clearing and construction activities
aa)	Ensure all stormwater catchment areas are free of debris prior to storm events to prevent flooding.	For the duration of clearing and construction activities
bb)	<p>Establish and maintain a cyclone kit for the construction site, and regularly assess for stock levels. The kit must contain supplies sufficient for all construction personnel and include at a minimum:</p> <ul style="list-style-type: none"> <li>First aid kit</li> <li>Waterproof torch and batteries</li> <li>Canned food and drinking water (four day supply)</li> <li>Waterproof portable radio and batteries</li> <li>Drinking water containers</li> </ul>	For the duration of clearing and construction activities
<b>Bushfire</b>		
cc)	To prevent vehicles and other machinery causing ignition of vegetation (including ground cover) restrict or limit operation of vehicles and machinery during times of increased fire risk or total fire ban.	Prior to and during clearing and construction.
dd)	Provide and maintain onsite firefighting and first aid equipment.	During clearing and construction.
ee)	Implement and adhere to the relevant approved Bushfire Management Plan (Emerge, 2023).	As required when bushfire risk has been identified.
<b>General</b>		
ff)	<p>Maintain a complaints register for the construction works. If a complaint is received record the following details:</p> <ul style="list-style-type: none"> <li>Name and contact details for the person raising the complaint</li> <li>Date and time of the complaint, and the date and time of the relevant complaint item</li> <li>Details of the complaint, and effect on premises</li> </ul> <p>After noting the details of the complaint, an investigation into the cause of the complaint is to occur, with subsequent implementation (if necessary) of further management measures.</p> <p>The investigation and management measures undertaken (if any) will be recorded in the complaints register. A copy of the complaints register will be made available to the Shire of Carnarvon upon request.</p>	During clearing and construction.

No.	Management Action	Timing
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Plate 5: Example Construction Site Signage

Source: *SafetySigns.com.au*, 2023



Plate 6: Example construction site signage

Source: *Newsigns*, 2023



Plate 7: Anchored Sea Container

Source: *Dallcon*, undated

## 5 Monitoring and Maintenance

The following monitoring actions have been developed to enable an assessment of the effectiveness of the management actions (Table 10).

**Table 10: Monitoring Actions**

Performance Targets	Actions	Timing/frequency
<b>Dust Generation</b>		
Visual assessment of dust generation by site supervisor	Cease or modify construction works if excessive dust generation occurs extending beyond the site boundary.	Throughout site works
No complaints of dust generation received. No drift of dust toward the marine park.	Maintenance of an incidents and complaints register.	Daily during site works.
<b>Noise Generation</b>		
No complaints of noise generation received.	Implementation of the above noise control measures.	Daily during site works.
<b>Erosion</b>		
No erosion of soils on site.	Implementation of the above erosion control measures.	Daily during site works.
<b>Delineation and access</b>		
No access of the site by unauthorised persons.	Regular inspection of the site's fencing and gate locks.	Daily during site works with gates to be locked when not in use/at the daily conclusion of works.
<b>Native Vegetation Clearing</b>		
No clearing of native vegetation outside the approved clearing boundary.	Site inspection to assess the condition of clearing boundaries.	During and post clearing works.
<b>Fauna and Habitat</b>		
No injury to fauna	Conscientious effort of all staff to be aware of fauna present on site.	Daily.
<b>Construction Site Access</b>		
All access to the site is to be via the temporary banksia Drive Extension.	Maintenance of an incidents and complaints register	Enforced during pre-start/prior to works commencing.
<b>Cyclones</b>		
No harm to site personnel and no loss of property resulting from a cyclonic event	Maintenance of an incidents and complaints register.	Throughout clearing and construction.



## 6 Contingencies

All site personnel have a duty of care to report all incidents in the workplace, including environmental incidents. Table 11 presents the contingency actions to be implemented in the event an incident or cyclonic event occurs.

**Table 11: Incidents and associated contingency actions**

Incident / Trigger criteria	Contingency action
<b>Dust Generation</b>	
Reasonable complaints received regarding dust generation on site.	<ol style="list-style-type: none"> <li>1. Investigate cause</li> <li>2. Implement appropriate controls, which may include:               <ul style="list-style-type: none"> <li>▪ Modifications to boundary fencing to limit dust dispersal</li> <li>▪ Increased use of dust suppression watering</li> <li>▪ Monitoring of wind conditions, and implementation of a stop works procedure in excessive wind conditions</li> </ul> </li> <li>3. Review adequacy of measures and revise as appropriate.</li> </ol>
<b>Noise Generation</b>	
Reasonable complaints are received regarding noise generation on site.	<ol style="list-style-type: none"> <li>1. Investigate cause</li> <li>2. Implement appropriate controls, which may include:               <ul style="list-style-type: none"> <li>▪ Reduced hours of operation outside of times where noise may be a sensitive item</li> <li>▪ Increased use of noise suppression measures, such as noise barriers</li> </ul> </li> <li>3. Review adequacy of measures and revise as appropriate.</li> </ol>
<b>Erosion</b>	
Erosion due to the clearing of current infrastructure or native vegetation	<ol style="list-style-type: none"> <li>1. Promptly stabilise disturbed areas by progressing construction/landscaping soon after clearing</li> <li>2. Utilise water carts where required to keep topsoil in place</li> <li>3. Install erosion mitigation fencing or matting</li> <li>4. Monitor efficacy of control methods</li> </ol>
<b>Delineation and access</b>	
Unauthorised access to site	<ol style="list-style-type: none"> <li>1. Report unauthorized access to site supervisor</li> <li>2. Determine how access was gained</li> <li>3. Implement remedial actions, such as repairing boundary fencing, or installation of appropriate signage</li> </ol>
<b>Native Vegetation Clearing</b>	
Unauthorised clearing beyond approved boundaries, or of vegetation identified for retention	<ol style="list-style-type: none"> <li>1. Determine extent of additional clearing</li> <li>2. Report additional clearing to site supervisor or environmental consultant</li> <li>3. Implement contingency actions which may include:               <ol style="list-style-type: none"> <li>a. Review relevance and practicality of management actions</li> <li>b. Improve training and education for all personnel</li> <li>c. Implement increased protective measures, such as increased buffers around retained vegetation</li> <li>d. Installation of additional/more visible boundary fencing</li> </ol> </li> <li>4. Monitor efficacy of remedial actions</li> </ol>



Incident / Trigger criteria	Contingency action
<b>Fauna and Habitat</b>	
Sick or injured fauna are located in the course of clearing or construction works	<ol style="list-style-type: none"> <li>1. Identify animal, if possible (determine if potentially venomous).</li> <li>2. If unable to stay with the animal, clearly mark its position so it is visible to all personnel that approach the site.</li> <li>3. Leave the animal alone until experienced assistance arrives.</li> <li>4. If in any doubt about whether the animal is venomous, <b>do not</b> under any circumstances attempt to handle. Instead, monitor the location of the animal and await further instructions</li> <li>5. Site supervisor or Environmental Consultant to contact DBCA or wildlife carers as appropriate.</li> </ol>
<b>Cyclones</b>	
A Cyclone Warning has been issued for the site or its surrounds (see Appendix 2 for further information on cyclone alerts and warning systems, including the four stage system of cyclone warnings implemented by the Department of Fire and Emergency Services).	<ol style="list-style-type: none"> <li>1. All staff and sub-contractors to be notified and accounted for. The construction manager will have a list of all personnel present on the site during the time of the warning being issued.</li> <li>2. All staff and sub-contractors are to make appropriate personal arrangements in a timely manner.</li> <li>3. Staff must pack away tools and equipment in designated secure areas</li> <li>4. Power is to be disconnected to non-critical areas and all equipment (including office equipment) is to be switched off and unplugged.</li> <li>5. If directed, water is to be stored in as many receptacles as possible.</li> <li>6. All staff must be present for head count to ensure appropriate evacuation plans and subsequent safe sheltering has been enforced.</li> <li>7. Follow directions given by site supervisor as to whether it is appropriate to evacuate or shelter on site in response to current cyclone conditions.</li> </ol>
<b>Bushfire</b>	
A bushfire alert has been issued for the site or its surrounds.	Refer to the approved Bushfire Management Plan (Emerge, 2023).

## **7 Roles and Responsibilities**

All on-site contractors and staff are required to be aware of their responsibilities and operate in accordance with this CMP for the duration of its implementation.

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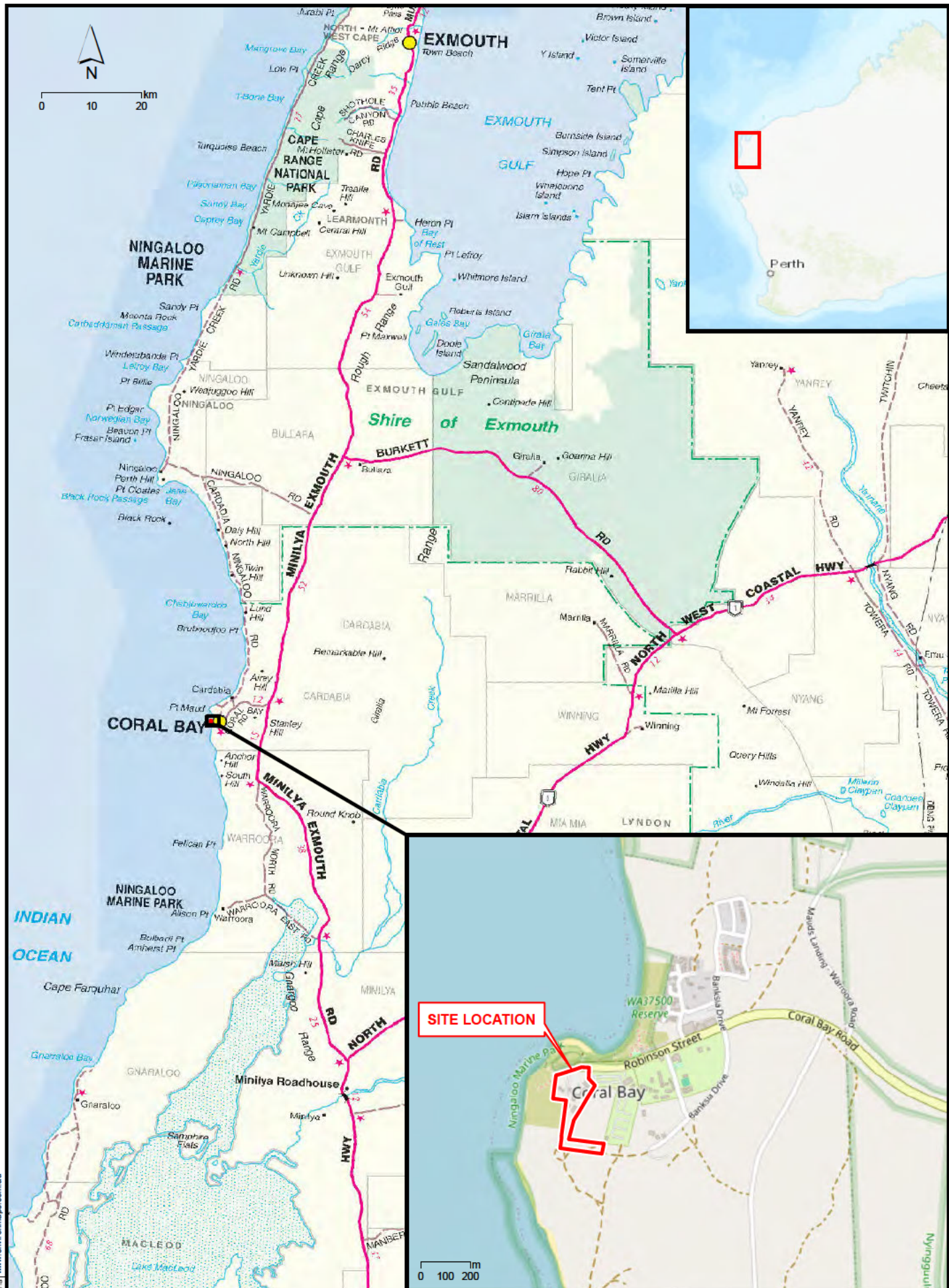
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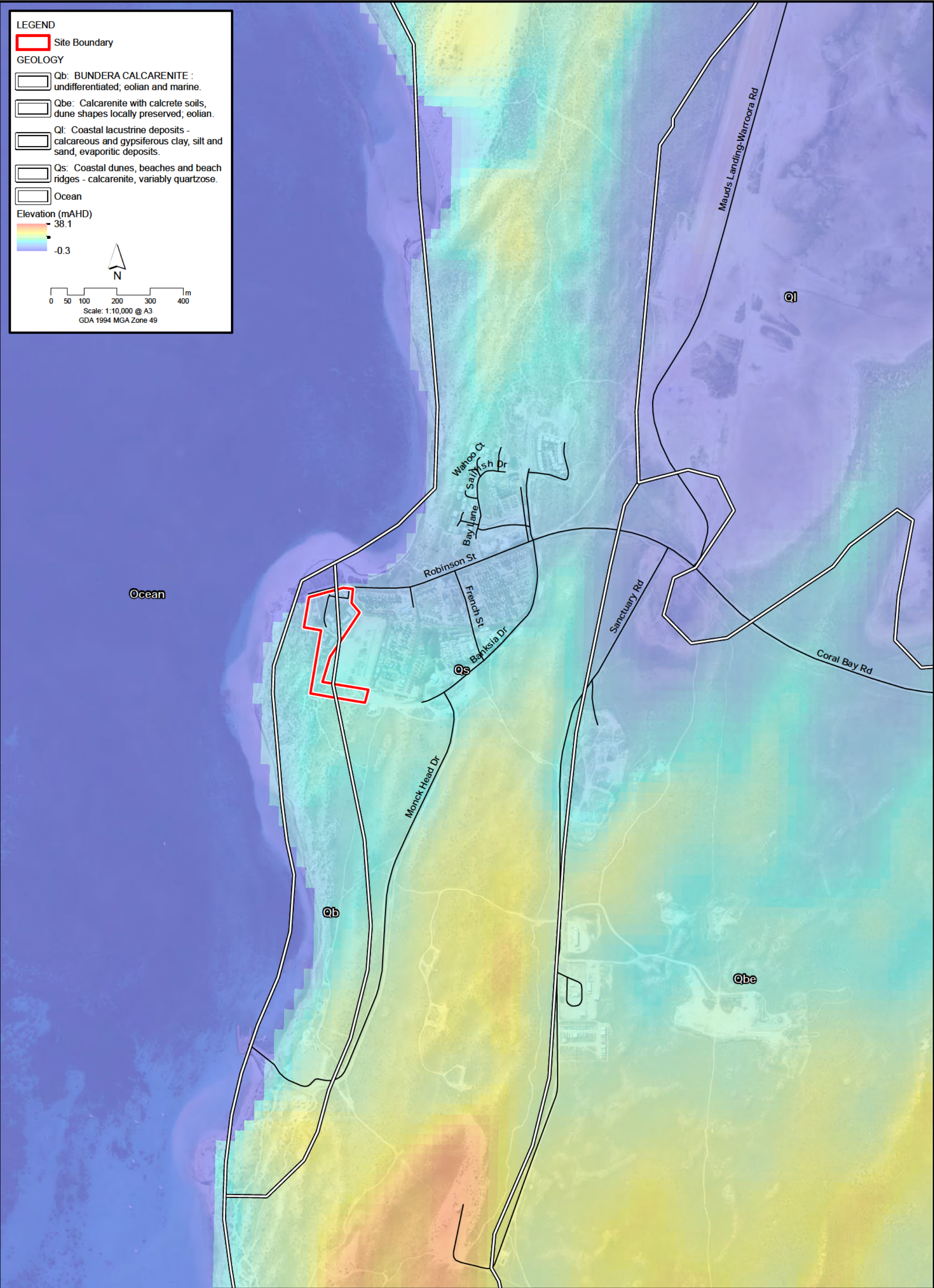
## Figures

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LEGEND

Site Boundary

GEOLOGY

- Qb: BUNDERA CALCARENITE : undifferentiated; eolian and marine.
- Qbe: Calcarenite with calcrete soils, dune shapes locally preserved; eolian.
- Ql: Coastal lacustrine deposits - calcareous and gypsiferous clay, silt and sand, evaporitic deposits.
- Qs: Coastal dunes, beaches and beach ridges - calcarenite, variably quartzose.
- Ocean

Elevation (mAHD)

38.1

-0.3

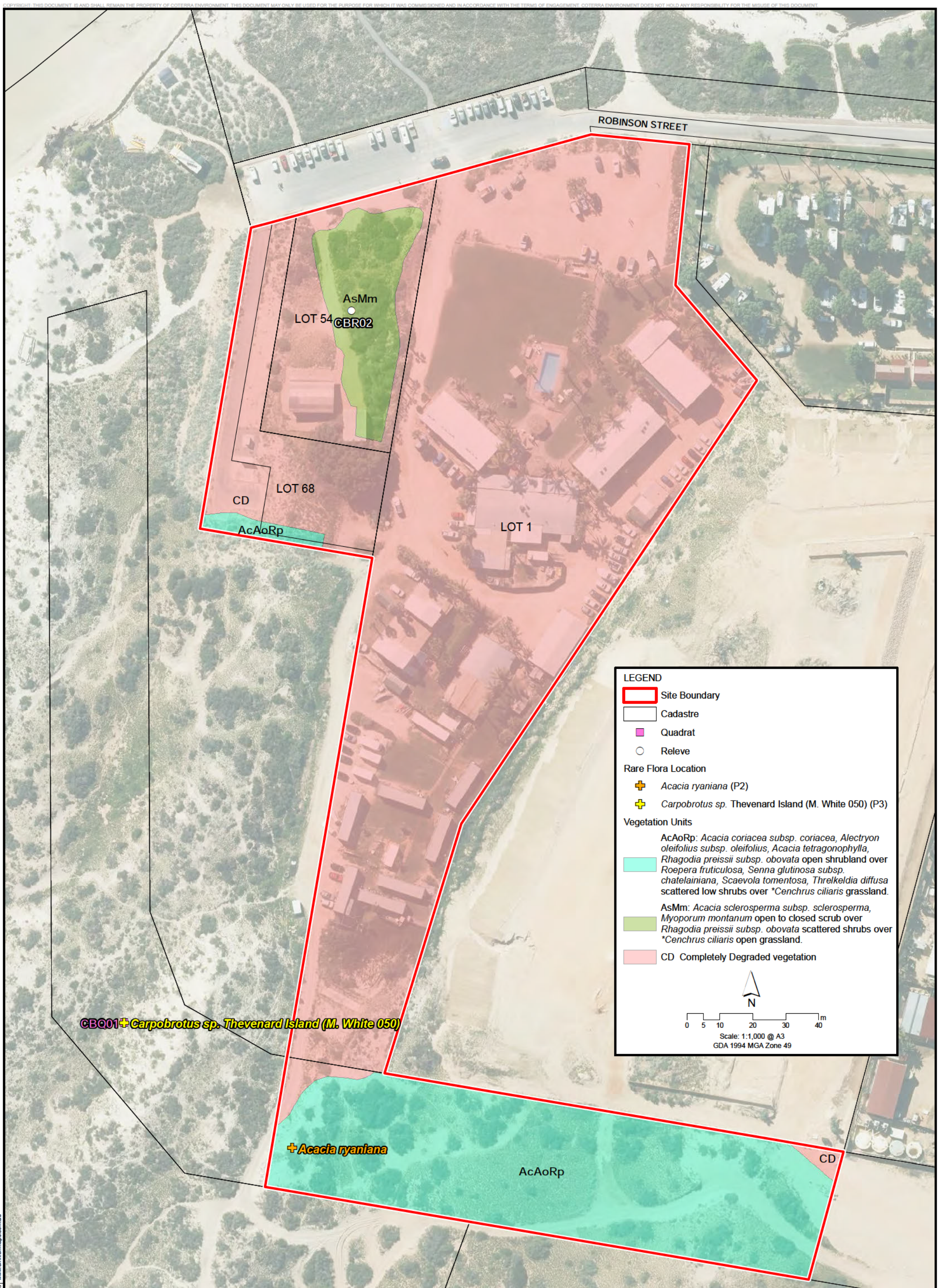


0 50 100 200 300 400 m

Scale: 1:10,000 @ A3

GDA 1994 MGA Zone 49





**LEGEND**

Site Boundary

Cadastre

Quadrat

Releve

**Rare Flora Location**

+ *Acacia ryaniana* (P2)

+ *Carpobrotus sp. Thevenard Island (M. White 050)* (P3)

**Vegetation Units**

**AcAoRp:** *Acacia coriacea* subsp. *coriacea*, *Alectryon oleifolius* subsp. *oleifolius*, *Acacia tetragonophylla*, *Rhagodia preissii* subsp. *obovata* open shrubland over *Roepera fruticulosa*, *Senna glutinosa* subsp. *chatelainiana*, *Scaevola tomentosa*, *Threlkeldia diffusa* scattered low shrubs over *Cenchrus ciliaris* grassland.

**AsMm:** *Acacia sclerosperma* subsp. *sclerosperma*, *Myoporum montanum* open to closed scrub over *Rhagodia preissii* subsp. *obovata* scattered shrubs over *Cenchrus ciliaris* open grassland.

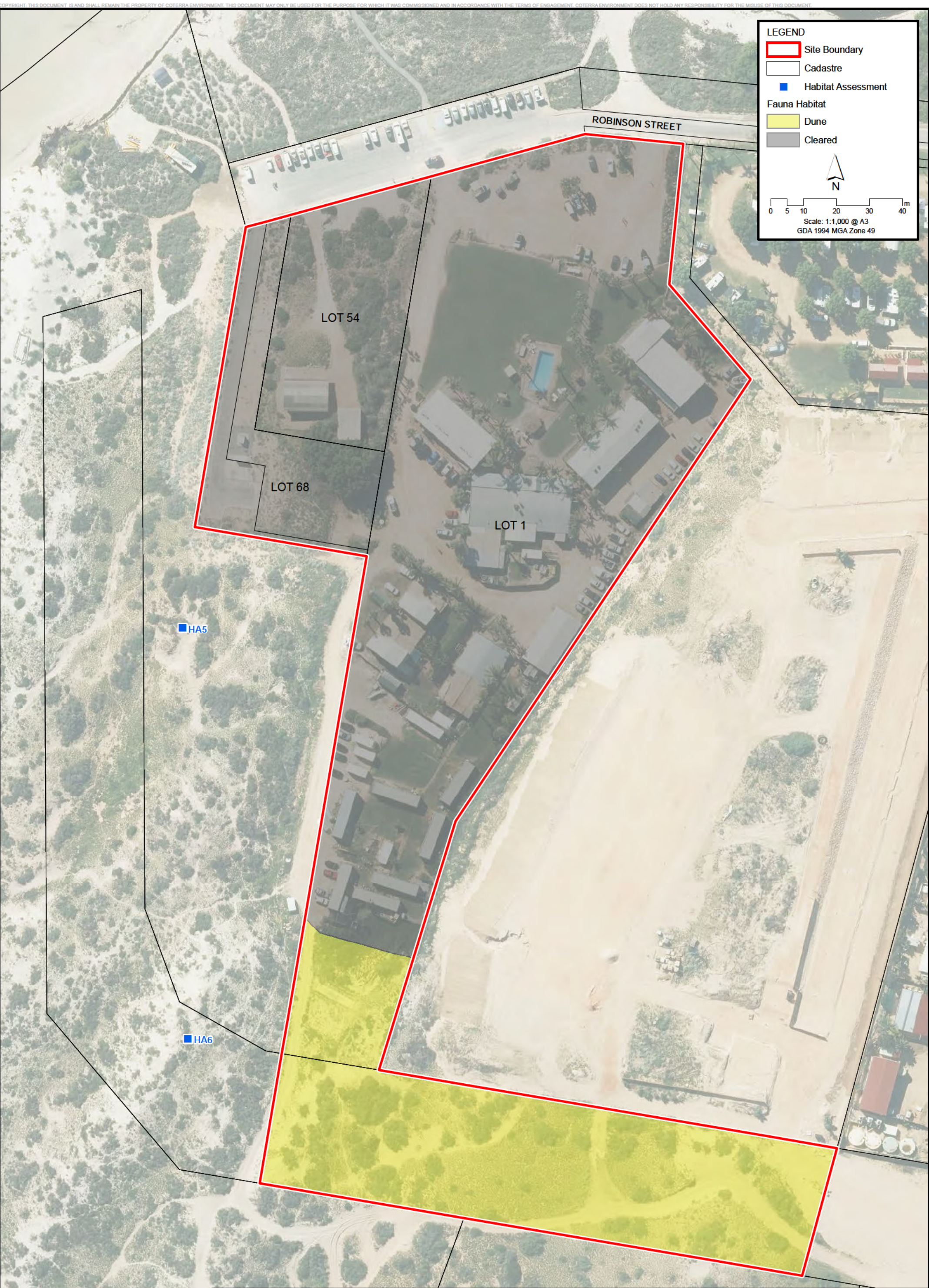
**CD** Completely Degraded vegetation

N  
  
0 5 10 20 30 40 m  
Scale: 1:1,000 @ A3  
GDA 1994 MGA Zone 49









**LEGEND**

Site Boundary


Cadastre

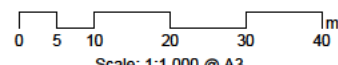
■ Habitat Assessment

**Fauna Habitat**

Dune

Cleared

  
N

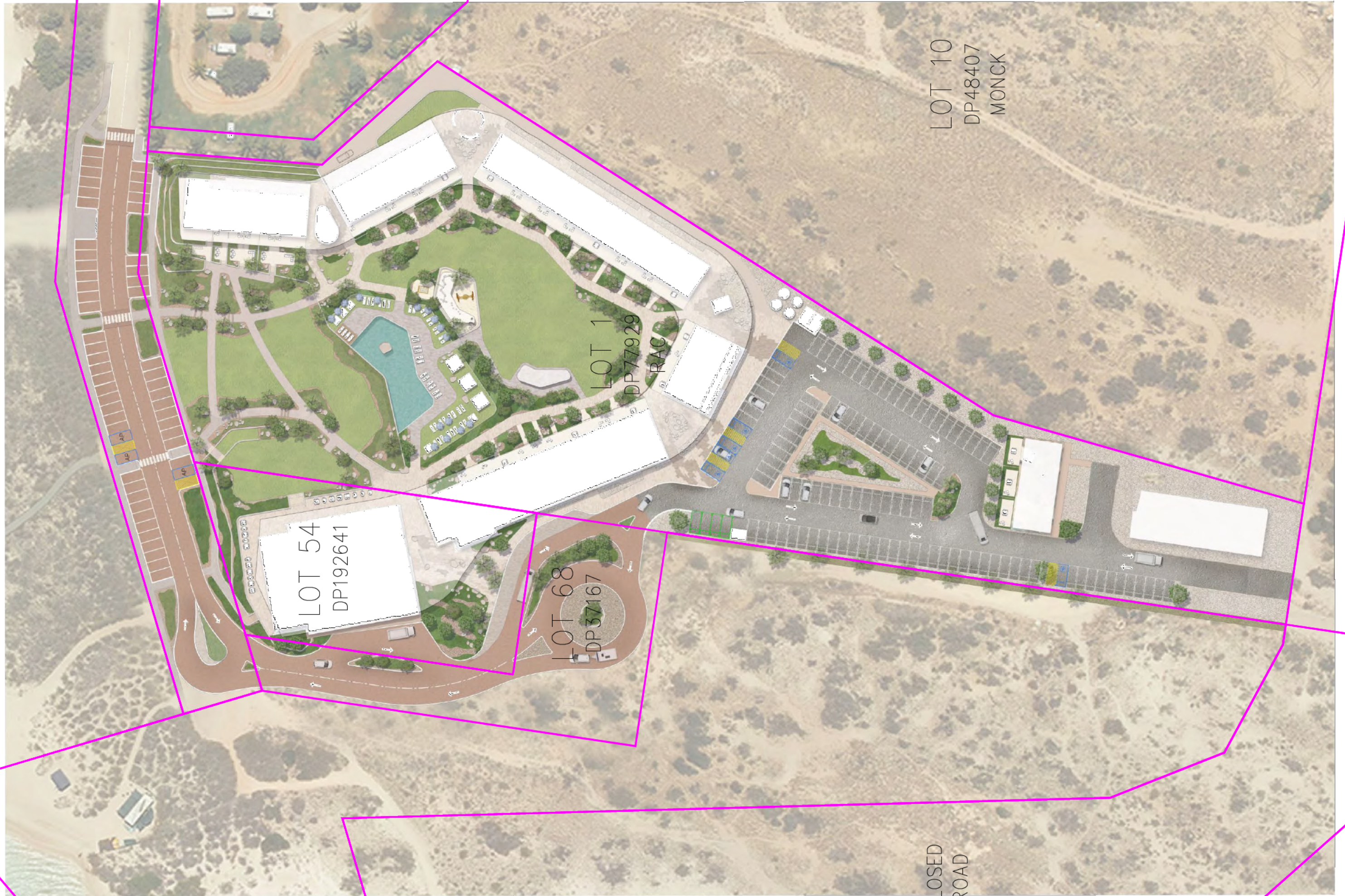
  
0 5 10 20 30 40 m  
Scale: 1:1,000 @ A3  
GDA 1994 MGA Zone 49



## Appendix 1      Masterplan

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LOT 10  
DP48407  
MONCK

LOT 1  
DP77929  
RAC

LOT 54  
DP192641

LOT 68  
DP37167

CLOSED  
ROAD



## Appendix 2      Cyclone Alert Systems

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Cyclone alerts and warning will be issued via [www.emergency.wa.gov.au](http://www.emergency.wa.gov.au). Contact information for emergencies can be found in Table 12.

**Table 12: Emergency contact information**

Subject	Contact phone number
<b>LIFE THREATENING EMERGENCY</b>	<b>000</b>
Emergency information	13 3337
SES Emergency Assistance	132 500
Shire of Carnarvon SES	9941 2121

Source: Shire of Carnarvon, 2024.

Information on personal preparation for a cyclone event can be found on the Shire of Carnarvon's website (<https://www.carnarvon.wa.gov.au/community/about-carnarvon/cyclone.aspx>).

Community Alerts will be issued via local radio, ABC North West and television stations. The Shire of Carnarvon highlights the following available radio stations for Carnarvon and Coral Bay that will broadcast regular updates:

- 6LN – 666AM
- 6CA – 846AM
- 6PNN – 106.1AM
- ABC NORTHWEST – 702AM

The erratic nature of a cyclones course means it is important to stay up to date with the latest warnings and advice. It is recommended that battery powered/operated AM/FM radios with extra batteries are available as part of the cyclone management practices at site.



Alert Category	Description
<b>Blue Alert</b>	<p>A cyclone has formed and may affect the area within 48 hours. Check the following:</p> <ul style="list-style-type: none"> <li>▪ Clear your area of all loose material and rubbish.</li> <li>▪ Check all doors and windows are secure.</li> <li>▪ Emergency supplies are at hand and fully stocked.</li> <li>▪ Tie down equipment is available for boats, trailers, caravans, etc.</li> <li>▪ Observe economy in the use of water.</li> <li>▪ Check that generators are operational and fuel on hand ready for use</li> </ul>
<b>Yellow Alert</b>	<p>The cyclone is moving closer and appears inevitable within 12 hours. Carry out the following activities:</p> <ul style="list-style-type: none"> <li>▪ Ensure that all loose material and objects around buildings are securely fastened into position.</li> <li>▪ Check that all cyclone screens are securely fastened into position (where available).</li> <li>▪ Tie down boats, caravans, trailers, etc.</li> <li>▪ Prepare safe shelters for pets and animals.</li> <li>▪ Top up vehicle fuel tanks.</li> <li>▪ Fill emergency containers with water and make sure all other emergency supplies are at hand.</li> </ul>
<b>Red Alert</b>	<p>The cyclone is imminent:</p> <ul style="list-style-type: none"> <li>▪ All personnel should make arrangements to be in their residences/shelter areas when the cyclone arrives.</li> <li>▪ Ensure pets / animals are safety sheltered.</li> <li>▪ Park your vehicle in a sheltered area, apply hand brake, and engage park or reverse.</li> <li>▪ During the height of the cyclone, keep clear of windows and stay in the most sheltered part of your house.</li> <li>▪ Should the eye of the cyclone pass immediately over the area, the wind will temporarily drop and then blow in the opposite direction. Except in extreme emergencies, stay indoors until the cyclone all clear is announced.</li> <li>▪ If you are unavoidably caught in an unprotected area, make your way stooping or crawling, to shelter. Otherwise lie down and hang on.</li> <li>▪ Continue to listen to your radio each hour for up-to-date instructions affecting your area.</li> <li>▪ Stay indoors at all times until All Clear has been given.</li> <li>▪ Emergency services will not place their staff and volunteers in danger to go out in a Red Alert.</li> </ul> <p>Staying inside your homes will protect you, your family and others, as there will be dangerous debris flying around during the period the cyclone is passing.</p>
<b>All Clear</b>	<p>The cyclone has passed the area but there may still be high wind and heavy rain. When venturing outdoors, do so with caution. Check for the following danger items:</p> <ul style="list-style-type: none"> <li>▪ Fallen trees, live power lines.</li> <li>▪ Broken water and drain lines, loose sheeting or debris.</li> <li>▪ Commence clean-up activities as soon as possible.</li> <li>▪ Report dangerous situations to the relevant authorities.</li> </ul>

Source: BoM, 2024