



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9170/1
Permit Holder:	Portframe Enterprises Pty Ltd ATF Gnaraloo Station Trust
Duration of Permit:	From 8 January 2023 to 8 January 2028

The permit holder is authorised to clear native vegetation subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear native vegetation for the purpose of an extension to existing camping facilities.

2. Land on which clearing is to be done

Lot 556 on Deposited Plan 415840, Macleod

3. Clearing authorised

The permit holder must not clear more than 0.40 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

PART II – MANAGEMENT CONDITIONS

4. Avoid, minimise, and reduce impacts and extent of clearing

In determining the native vegetation authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

5. Weed management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known weed-affected soil, mulch, fill, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

6. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner towards areas of adjacent *native vegetation* to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

7. Land degradation – Wind erosion

The permit holder must begin construction works within 2 months of the clearing activity to mitigate against land degradation through wind erosion.

8. Vegetation Management

The permit holder must ensure only *local provenance* seeds and propagating material are used in any *revegetation, rehabilitation, planting* or landscaping activities.

PART III - RECORD KEEPING AND REPORTING

9. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ol style="list-style-type: none">(a) the species composition, structure, and density of the cleared area;(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;(c) the date that the area was cleared;(d) the size of the area cleared (in hectares);(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 4;(f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> in accordance

No.	Relevant matter	Specifications
		<p>with condition 5;</p> <p>(g) actions taken to mitigate against wind erosion in accordance with condition 7.</p> <p>(h) actions taken to ensure only <i>local provenance</i> seeds and propagating material are used in any <i>revegetation, rehabilitation, planting</i> or landscaping activities.</p>

10. Reporting

The permit holder must provide to the *CEO* the records required under condition 9 of this permit when requested by the *CEO*.

DEFINITIONS


In this permit, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 100 kilometres and the same IBRA subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;
rehabilitate / rehabilitated / rehabilitation	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
revegetate / revegetated / revegetation	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
weeds	means any plant –

Term	Definition
	<p>(a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or</p> <p>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or</p> <p>(c) not indigenous to the area concerned.</p>

END OF CONDITIONS

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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

16 December 2022

Schedule 1 - Plan CPS 9170/1

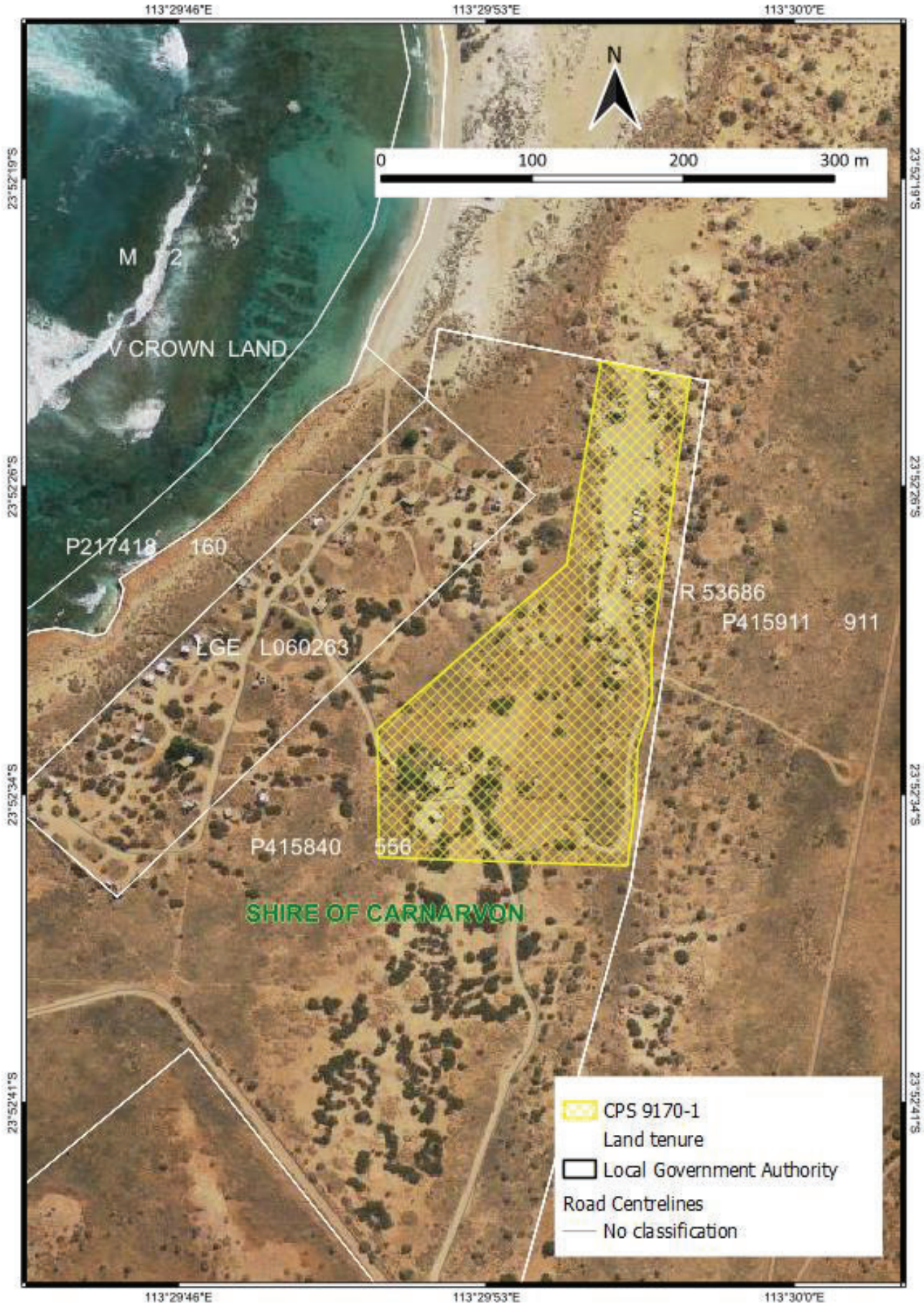


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1. Application details and outcome

1.1. Permit application details

Permit number:	CPS 9170/1
Permit type:	Purpose Permit
Applicant name:	Portframe Enterprises Pty Ltd ATF Gnaraloo Station Trust
Application received:	29 December 2020
Application area:	0.40 hectares of native vegetation
Purpose of clearing:	Extension of the 3 Mile Camp site at Gnaraloo
Method of clearing:	Mechanical
Property:	Lot 556 on Deposited Plan 415840, Macleod
Location (LGA area):	Shire of Carnarvon
Locality:	Macleod

1.2. Description of clearing activities

Portframe Enterprises Pty Ltd (ATF Gnaraloo Station Trust) operate Gnaraloo Station, a pastoral station and associated tourism business, located approximately 150 kilometres north of Carnarvon. The proposed clearing is required to facilitate the establishment of; staff quarters, a shop extension, new water tanks and generator site, the creation of a new access track, closure of an existing track, stabilising an existing blowout and rationalising an existing camping area. A purpose permit has been applied for whereby up to 0.40 hectares of native vegetation is proposed to be cleared within an application area of 3.9 hectares within Lot 556 on Deposited Plan 415840 (Figure 1, Section 1.5).

1.3. Decision on application

Decision:	Granted
Decision date:	16 December 2022
Assessment area:	Up to 0.40 hectares of native vegetation within Lot 556 on Deposited Plan 415840, Macleod depicted in Section 1.5, and Figure 1 below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D2), the clearing principles set out in Schedule 5 of the EP Act (Appendix B), and relevant planning instruments and any other matters considered relevant to the assessment (Section 3). The assessment identified that the proposed clearing will result in the potential:

- loss of up to 0.40 hectares of habitat for the Priority 1 skink *Lerista Haroldi* and potential impacts to individuals occurring in the proposed clearing area at the time of clearing;
- impact to lands immediately adjacent managed for conservation purposes;
- introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values; and
- potential land degradation in the form of wind erosion impacting the application area as well as adjacent lands managed for conservation purposes.

After consideration of the available information the Delegated Officer determined the proposed clearing can be managed to be unlikely to lead to an unacceptable risk to environmental values. The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise and reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity;

- undertake staged clearing with the commencement of infrastructure construction no later than two months after clearing to reduce the potential for wind erosion; and
- utilise locally provenanced native species only in any revegetation actions or landscaping.

1.5. Site map

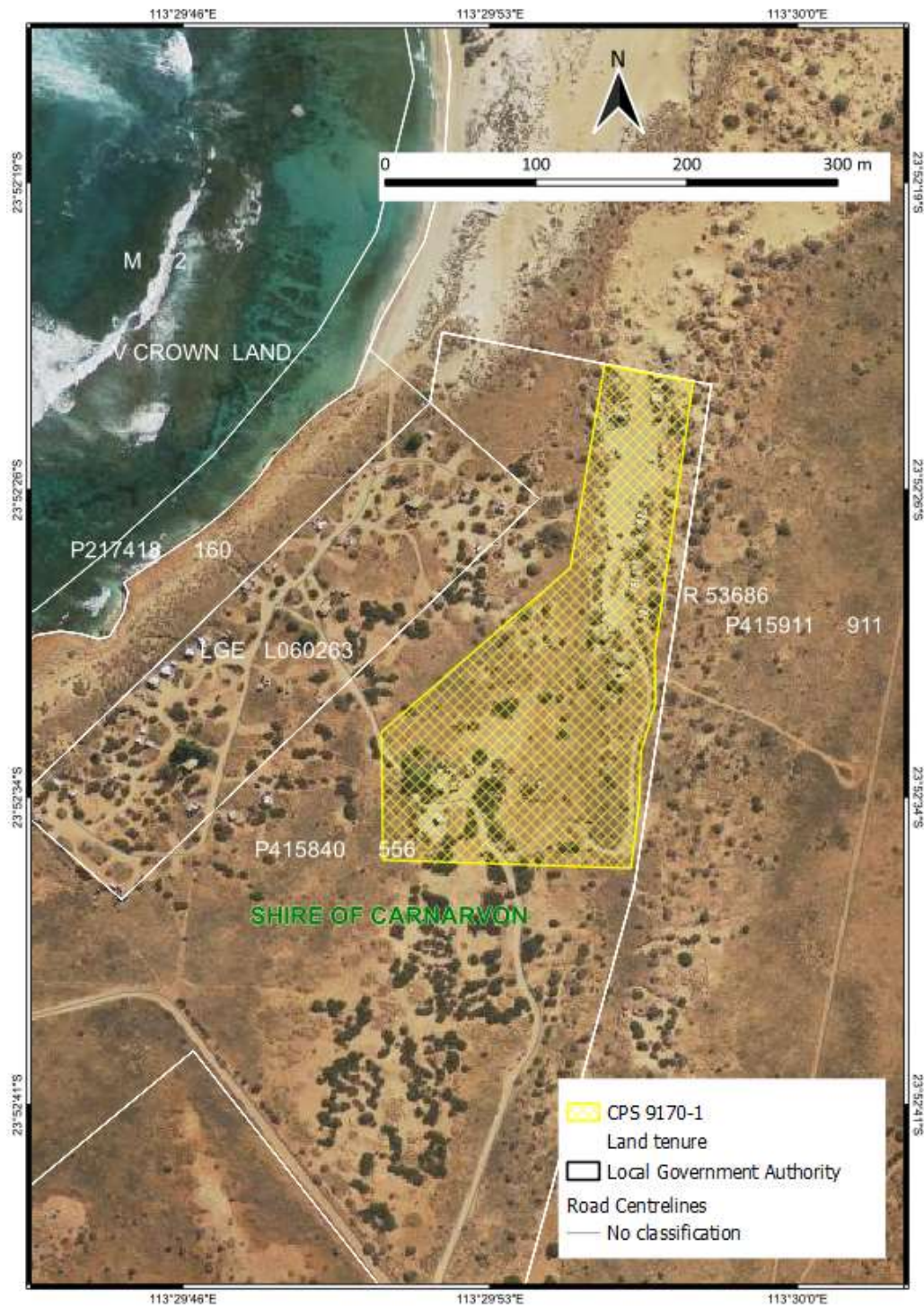


Figure 1. Map of the application area. The area cross-hatched yellow indicates the area within which up to 0.40 hectares of clearing is authorised to clear.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (Section 3), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle;
- the principle of intergenerational equity; and
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment includes:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER October 2019)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The Delegated Officer was satisfied that the applicant has undertaken reasonable measures to avoid and minimise potential impacts of the proposed clearing on environmental values. The proposed clearing area has been revised down to 0.40 hectares of native vegetation from an original application of up to 10 hectares, consistent with a recent development approval (Portframe Enterprises 2022b) (Section 3.3) (Figure 7). New infrastructure will be positioned in degraded areas set back from the coastline, and a dune blowout area currently devoid of native vegetation will be revegetated with local species as a component of rationalising the associated camping area. A purpose permit has been applied for by the applicant whereby up to 0.40 hectares of native vegetation is proposed to be cleared within an application area of 3.9 hectares, maintaining a level of flexibility to the location of infrastructure. With the associated revegetation of a degraded area (Section 3.2.3), a net increase in native vegetation is likely.

3.2. Assessment of environmental impacts

In assessing the application, the Delegated Officer has had regard for the site characteristics (Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values. The assessment against the clearing principles (Appendix B) identified that the impacts of the proposed clearing may present a risk to fauna habitat and adjacent conservation areas, and has the potential to contribute to land degradation in the form of wind erosion. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Environmental value: Biological values (fauna habitat) – Clearing Principle (b)

Assessment: Two mammals, four reptiles and 38 birds of conservation significance have been recorded within 50 kilometres of the application area. This area includes the diverse marine ecosystems of the Ningaloo Marine Park and World Heritage Area.

Of the two mammals of conservation significance recorded, one is the conservation dependant Humpback Whale (*Megaptera novaeangliae*), with the other being the conservation dependant Red-tailed Phascogale (*Phascogale calura*). The Humpback Whale is a marine species, and only one historical record occurs for the Red-tailed Phascogale, that being fossilised material, and due to the historical record and lack of habitat it is unlikely to occur in the local area.

Of the four reptiles, one is the Priority 1 skink the Gnaraloo Mulch Slider (*Lerista haroldi*) that has been recorded within seven kilometres of the application area (Figure 2).

Lerista is a diverse genus of endemic small skinks commonly known as sand-swimmers, due to their predominantly fossorial habit, that inhabit leaf litter and sand substrates. In Western Australia, the genus is particularly rich with 67 described species, most of which are found in arid to semi-arid regions, and the central coast with its dry and sandy soils is particularly rich in species.

Smith and Adams (2007) undertook a detailed examination of the morphological and genetic variation in Western Australian specimens aligned with *Lerista muelleri*. Support was provided for the validity of eleven species, including

Lerista haroldi as described by Storr (1983). *Lerista haroldi* is listed as Priority 1, and proposed to be nominated as Threatened (Endangered) based on the listing recommendation from the Action Plan for Australian Lizards and Snakes 2017 (Chapple *et al.* 2019), and the updated International Union for Conservation of Nature (IUCN) Red List assessment (Lloyd and Gaikhorst 2018). Habitat degradation caused by overgrazing by sheep and goats is believed to be impacting the species (Chapple *et al.* 2019).

Seven specimens of *Lerista haroldi* are held within the WA Museum, with an additional record contained within the WA Threatened Fauna Database. All records are from coastal areas. The records within seven kilometres of the application area have identical co-ordinates, dates (11 June 1993), locality descriptors (McLeod), and site descriptors (Gnaraloo HS). They also have identical locality attributes of '0.5 kilometres south of 'Gnaraloo Homestead' (DBCA 2007-) (The application area is located approximately 6.5 kilometres south of Gnaraloo Homestead). Given the above, the three specimens may have been collected from separate localities in the general vicinity of Gnaraloo Homestead and given matching generic labels. Additional specimens have been collected from approximately 38 kilometres to the south of the application area at Cape Cuvier in 1995 (McKenzie *et al.* 2000).

Lerista haroldi habitat is considered to be semi-arid coastal dunes (Chapple *et al.* 2019; Wilson and Swan 2013), with a likely distribution from Gnaraloo south to Cape Cuvier (Atlas of Living Australia 2020; Chapple *et al.* 2019). Records of *Lerista haroldi* are from coastal dunes of the Cardabia Land System (Figure 2). Significant areas of the Cardabia System occur between Gnaraloo homestead and Cape Cuvier, and Chapple *et al.* (2019) estimate an extent of occurrence of 10,700 hectares (107 km²). The application area is located within the Coast Land System, however, the coastal dunes landforms are similar to that of the Cardabia System and given what is known of the species habitat is likely to be present in a degraded form. Given the proximity of known records of *Lerista haroldi* to the north and to the south it is likely that the species persists in the area within suitable habitat (DBCA 2021b).

Proposed clearing consists of up to 0.40 hectares only. Not all the application area will be cleared, with areas set aside for communal space and for the retention of native vegetation between campsites. Although the alluvial and sandy plains and dunes may support the species, proposed clearing is minor in consideration of the likely extent of occurrence of the species, with extensive areas of similar habitat in the same or better condition well represented within the local area of a 50 kilometre radius of the application area.

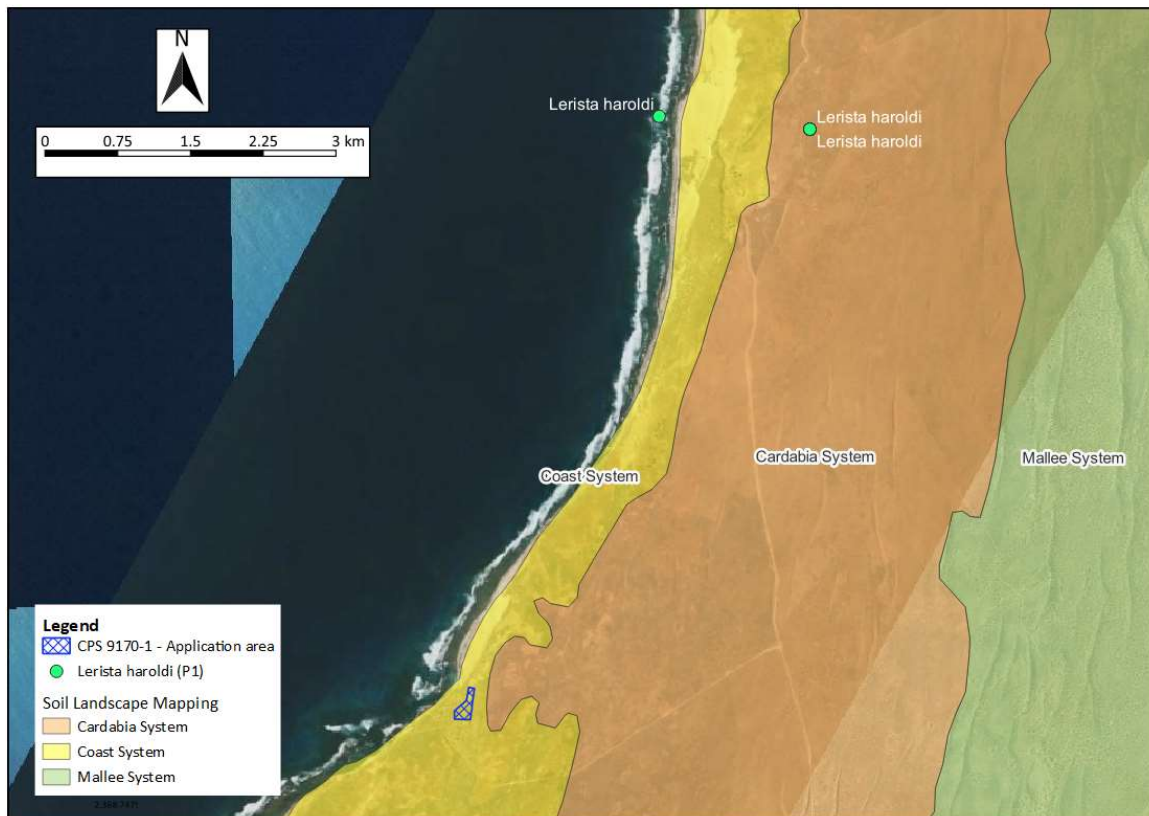


Figure 2. Locations of *Lerista haroldi* records north of the application area and associated Land Systems

Three Threatened marine turtles have been recorded within the local area; the Endangered Loggerhead Turtle (*Caretta caretta*), and the Vulnerable Green Turtle (*Chelonia mydas*) and Hawksbill Turtle (*Eretmochelys imbricata*). Two high-density turtle rookeries are well known from the local area; that is, the Gnaraloo Bay rookery, a stretch of beach approximately 13 kilometres north of the application area, and the Cape Farquhar rookery, approximately 30 kilometres to the north of the application area (Thomson *et al.* 2016) (Figure 3).

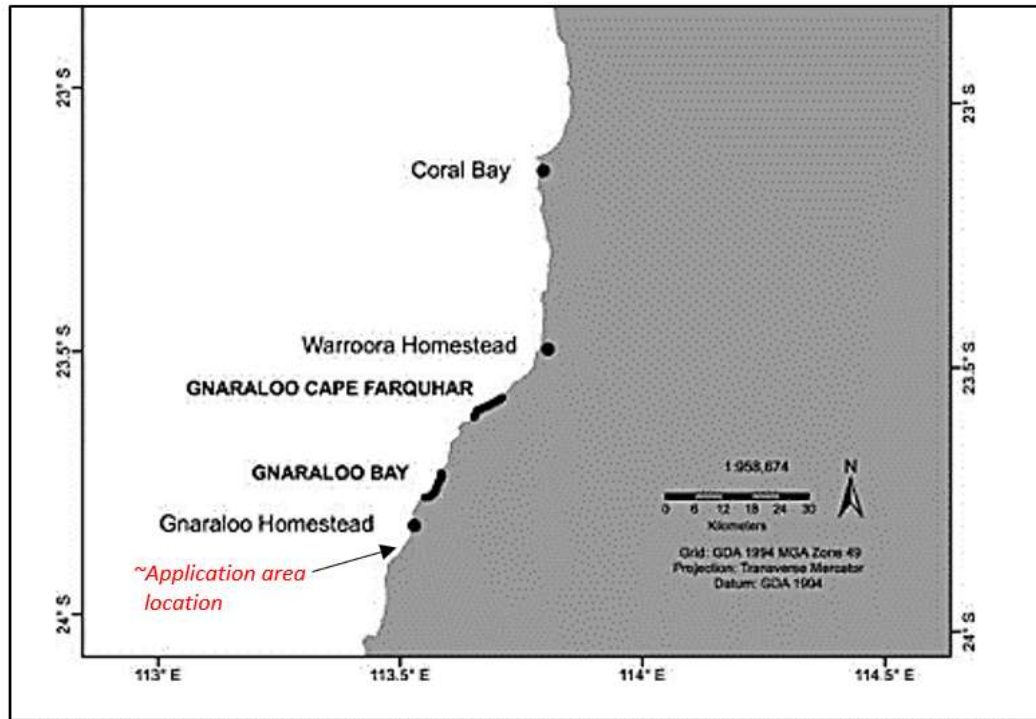


Figure 3. Locations of Gnaraloo Bay and Cape Farquhar marine turtle rookeries (Thomson *et al.* 2016)

The Gnaraloo Bay rookery is utilised predominantly by Loggerhead Turtles (Thomson *et al.* 2016), with peak nesting activity occurring between mid-December and late January. Loggerhead Turtles nest at intervals of two to four years, with three to six nests per season approximately 12 to 14 days apart, and an average of between 100 to 126 eggs in each nest. Thomson *et al.* (2016) estimate that 405 nests are dug by 85 female Loggerhead Turtles at Gnaraloo Bay annually. Although the Gnaraloo Bay is utilised predominantly by Loggerhead Turtles, Hawksbill and Green Turtles have also been recorded, with Hawksbill Turtles recorded more rarely than Loggerhead and Green Turtles (Markovina 2015).

Although the Gnaraloo Bay rookery is located 13 kilometres north, records of all three species of marine turtle have been made approximately 6.4 kilometres to the north of the application area in 2011 (Figure 4). These records are labelled 'Gnaraloo Bay' with all three records centred on Gnaraloo Homestead with 'counts' of over 400. Due to the numbers involved and all record locations aligned with Gnaraloo Homestead they may represent a generic location with actual sightings from Gnaraloo Bay to the north of the homestead (Figure 3).

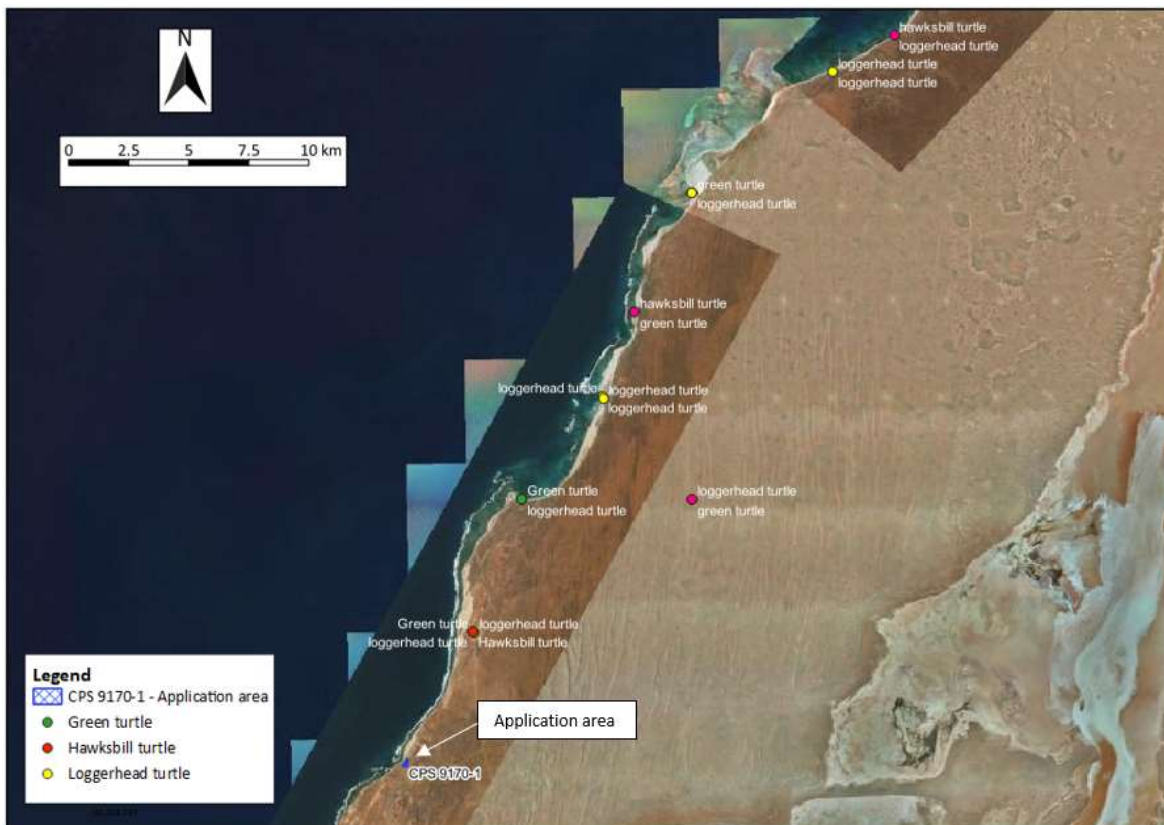


Figure 4. Marine turtle records in relation to the application area

Of the 38 birds of conservation significance recorded from the local area no shrubland habitat is present over the application area for the Vulnerable Malleefowl (*Leipoa ocellata*). Of the remainder, 26 are shorebirds, eight are terns, and three are raptors (birds of prey).

The three raptors may overfly the application area intermittently without utilising the habitat present. The migratory-listed Osprey (*Pandion cristatus*) as well as the Peregrine Falcon (*Falco peregrinus*) (other specially protected fauna) are likely to be present in the region. The Osprey nests in large trees, offshore rocks and cliff faces. The Peregrine Falcon does not build a nest but requires cliffs, rocky outcrops, or large tree hollows to breed, none of which are present over the application area.

Numerous shorebird species (>25) protected under International Agreements (particularly the Families: Scolopacidae, Charadriidae, and Glareolidae) have been recorded within 50 kilometres of the application area (DBCA 2019) (Appendix A3). The majority of the members from these Families are migratory (including Threatened) shorebirds that breed in northern latitudes. The majority of these species inhabit littoral, estuarine and wetland habitats. Most are coastal, but some species will also utilise inland waters and flooded areas. Migratory species arrive during the summer and depart during the winter to breed in northern latitudes.

Most shorebird records from the local area are focused on the edges of Lake Mcleod between nine and 30 kilometres to the east of the application area (Figure 5). The shallows, mudflats and lagoons of Lake Mcleod are known to support large aggregations of migratory shorebirds (Bertzeletos *et al.* 2012). However, the tidal beaches adjacent to the application can also be utilised with the Threatened Greater Sand Plover (*Charadrius leschenaultia*) recorded on the shoreline within 320 metres of the application area. Eight tern species protected under International Agreements are also known from the local area. Most of these tern species breed and/or roost on beaches, with the Roseate Tern (*Sterna dougallii*) also recorded on the shoreline within 320 metres of the application area (Figure 5).

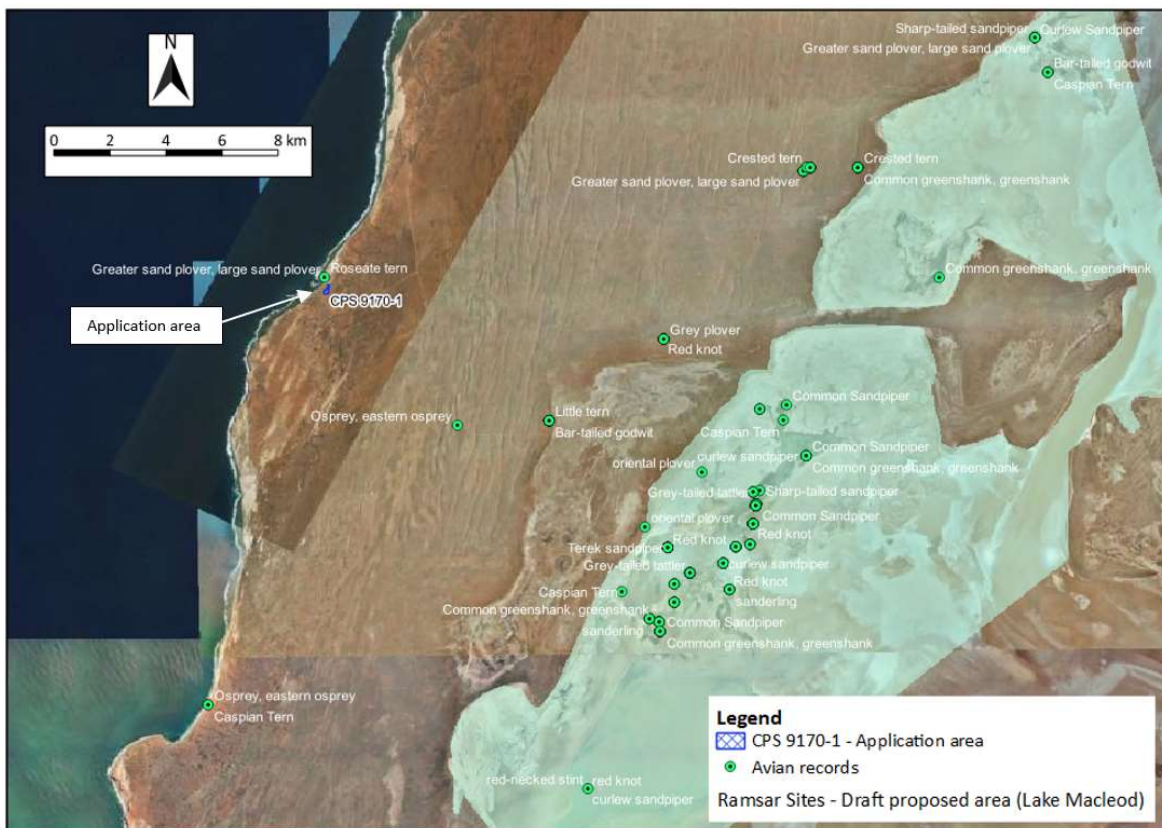


Figure 5. Records of birds in the local area showing the focus of shorebird records at Lake Macleod

Conclusion: The local area includes the diverse marine ecosystems of the Ningaloo Marine Park and World Heritage Area, as well as the Nyinggulu (Ningaloo) coastal reserve (Section 3.2.3).

A conservation and recreation reserve system is being created along the Ningaloo Coast, and DBCA is installing boundary fencing between this reserve and the Gnaraloo Pastoral Lease (LPL N050435) to mitigate grazing pressure by goats, which will ultimately provide benefits to the extent and quality of available habitat for *Lerista haroldi* on adjacent lands managed for conservation, as well the 3 mile camp area (including the application area) (DBCA 2021a; DBCA 2021b). The DBCA is also planning to engage a suitably qualified consultant to conduct a broader targeted survey for *Lerista haroldi* to clarify uncertainties regarding its distribution and abundance within its known range (DBCA 2021b).

Components of the 3.9 hectare application area may support the species, however, not all the application area will be cleared with up to 0.40 hectares proposed for clearing, with the retention of native vegetation between infrastructure and campsites. Proposed clearing is minor in consideration of the likely extent of occurrence of the species and any impacts are likely to be minimal. Potential impacts have been minimised by focussing on the more degraded areas of the application area and using locally provenanced plant species in any revegetation or landscaping undertaken. Potential impacts to individual *Lerista haroldi* occurring in the proposed clearing area at the time of clearing can be minimised by conducting staged clearing at an appropriate rate, and using a raised blade wherever possible to enable any individuals present to relocate (DBCA 2021b).

Foreshore areas should maintain the ecological processes of the coastal location, including the functionality of the physical, hydrological and biological attributes of the area, maintaining biodiversity and ecosystem integrity, ecological values, and functions (State Planning Policy No. 2.6 State Coastal Planning Policy (SPP 2.6), and associated guidelines (DPLH and WAPC 2020). Foreshore development should be designed to avoid vegetation removal, alterations to natural topography, battering or other earthworks (DPLH and WAPC 2020).

The coastal waterline has been mapped just over 150 metres west of the application area and, at its closest point, the application area is set back 125 metres from beaches and the intertidal zone that provides potential breeding habitat to marine turtles, feeding and roosting habitat to shorebirds, and roosting and breeding habitat to terns. Planned infrastructure is east of, and further from the shoreline, than the existing 3 mile campsite and associated infrastructure.

Given the separation distance of the application area to key habitats, and positioning east of existing infrastructure, proposed clearing is not likely to negatively impact nearby significant fauna habitat. Adjacent vegetation is susceptible to weed invasion which the clearing process may exacerbate, thereby reducing habitat quality in adjacent areas.

Conditions: To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Slow and directional clearing to allow fauna to move into adjacent native vegetation ahead of the clearing activity.
- Weed management measures be implemented to mitigate impacts to adjacent vegetation.
- Use of locally-provenanced native species only in any revegetation actions or landscaping.

3.2.2. Environmental value: Conservation areas – Clearing Principle (h)

Assessment: The Ningaloo Coast World Heritage Area and associated Ningaloo Marine Park is located approximately 180 metres to the north-west of the application area at its closest point (Figure 6).

World Heritage status is awarded by the UNESCO World Heritage Committee to sites that are deemed to possess outstanding universal value; cultural and/or natural significance so exceptional that it transcends national boundaries and is of common importance for present and future generations (UNESCO 2019).

The Ningaloo Coast World Heritage Area stretches over the 260 kilometre long Ningaloo Reef with a high diversity of habitats that includes reef, intertidal systems, and sandy beaches (UNESCO 2011). The most dominant marine habitat is the Ningaloo reef, and the main terrestrial feature is the extensive karst system and network of underground caves and watercourses of the Cape Range (UNESCO 2011), located approximately 165 kilometres to the north of the application area. The application area is located toward the southern end of the Ningaloo coast.

The Ningaloo Marine Park associated with the Ningaloo Coast World Heritage is managed by the DBCA. At its closest point the marine park is located approximately 180 metres to the north-west of the application area where the 3 mile Sanctuary Zone is located (incorporating the 3 mile lagoon), where no extracted activities such as recreational or commercial fishing is permitted (DBCA 2019).

The Western Australian State Government is creating conservation and recreation reserves along the Ningaloo coast, including within the vicinity of the application area. Crown Reserve R 53686 (reserved under Section 5(1)(h) of the CALM Act 1984), known as the Nyinggulu (Ningaloo) Coastal Reserve, surrounds the application area and the 3 Mile Camp Lease (L60263) (Figure 6). Crown Reserve R53686 consists of former pastoral leasehold lands. That is, former Gnaraloo Station land that was not renewed during the 2015 pastoral lease renewal process. Crown Reserve R 53686 forms part of the Nyinggulu (Ningaloo) coastal reserves; Red Bluff to Winderabandi (DBCA 2019), with a draft joint management plan prepared (DBCA 2019). The land is vested via Management Orders to the Conservation and Parks Commission and the Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) (registered native title bodies corporate - RNTBC). The purpose of Crown Reserve R 53686 is for conservation and recreation, with the responsible agency currently being the DBCA.

The signing of a recent Indigenous Land Use Agreement (ILUA) will provide for the new reserves to be jointly managed by the traditional owners, the Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC), and the Parks and Wildlife Service of the Department of Biodiversity, Conservation and Attractions (DBCA).

Gnaraloo Station is a Land for Wildlife site (DPaW and NRM 2019) (Registration Number: 2647); a voluntary scheme to encourage and assist landholders to provide habitats for wildlife on their property. DBCA has entered into a Partnership Agreement with Natural Resource Management (NRM) to provide biodiversity conservation support to Land for Wildlife members.

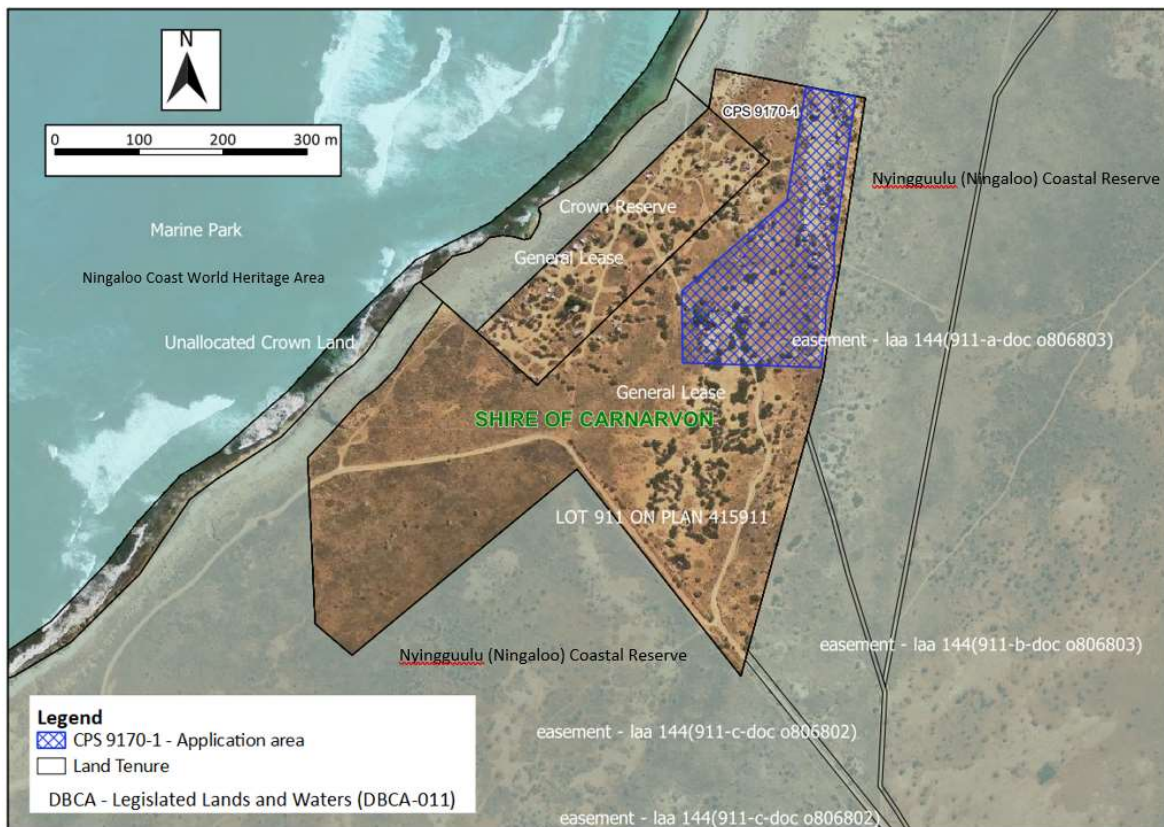


Figure 6: Overview of the tenure surrounding the application area

Conclusion: The Nyinggulu (Ningaloo) coastal reserves managed by DBCA are located immediately adjacent to parts of the application area (Figure 6), the coastal waterline has been mapped just over 150 metres to the west and, at its closest point, the Ningaloo Marine Park and associated Ningaloo Coast World Heritage Area are located approximately 185 metres to the north west of the application area (Figure 6).

Given the scale of clearing and the separation distance of the application area to the Ningaloo Marine Park and associated Ningaloo Coast World Heritage Area proposed clearing of native vegetation is not likely to negatively impact these areas. Clearing required for small scale infrastructure including staff quarters, a shop extension, new water tanks and a generator site is located over 75 metres from the Nyinggulu coastal reserve boundary and is unlikely to negatively impact environmental values of the reserve. Stabilisation an existing blowout and the rationalisation of existing tracks are required to be undertaken close to the reserve boundary, however, no clearing within the adjacent reserves is authorised.

Adjacent vegetation, including within adjacent reserves, is susceptible to weed invasion (including exotic species used in any landscaping or revegetation) which the clearing process may exacerbate, thereby reducing habitat quality in adjacent areas. Adjacent vegetation is also susceptible to wind erosion which the clearing process may exacerbate, thereby reducing habitat quality in adjacent areas.

Conditions: To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Weed management measures be implemented to mitigate impacts to adjacent vegetation.
- Use of locally provenanced native species only in any revegetation actions or landscaping.
- Staged clearing to be undertaken, with the commencement of infrastructure construction no later than two months after clearing to reduce the potential for wind erosion.

3.2.3. Environmental value: Land resources – Clearing Principle (g)

Assessment: The application area is located within the Coast Land System (Figure 2) of large long-walled parabolic dunes with narrow interdunal swales, minor limestone plains and wave cut platforms and beaches with the 238Cs soil type. The system occurs as a strip up to six to seven kilometres wide, but often much narrower, adjacent to the

coastline at Gnaraloo (Payne *et al.* 1987) (Figure 2). The application area incorporates coastal dunes over limestone and a feature known as Scorpion Ridge; an elevated dunal system and associated swale.

The Coast Land System is highly susceptible to wind erosion when denuded of adequate cover (Payne *et al.* 1987) with the risk of large, mobile sand drifts and dunal blowouts. Factors such as clearing, fire, excessive grazing pressure, or uncontrolled vehicle use may facilitate mobile sand drifts or dunal blowouts (DPaW and NRM 2019).

DBCA (2021b) advises that the vegetation condition over the application area is somewhat degraded. Due to the very high susceptibility of the Coast Land System to wind erosion, most is unsuited to pastoral use, and is also at high risk to other forms of landuse or development (Payne *et al.* 1987).

A conservation and recreation reserve system is being created along the Ningaloo Coast, and DBCA is installing boundary fencing between the Ningaloo coastal Reserve reserve and Gnaraloo Pastoral Lease to mitigate grazing pressure by goats, which will ultimately provide benefits to denuded areas. Degradation risks from clearing, fire, and excessive or uncontrolled vehicle use remain.

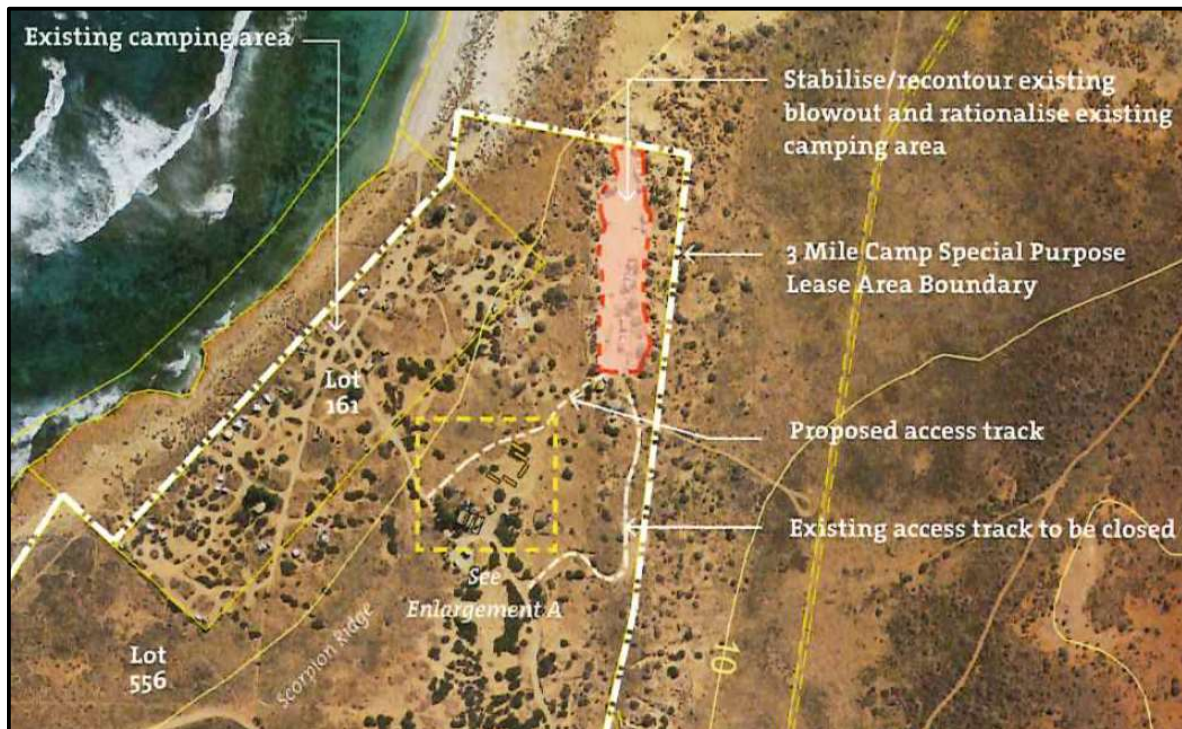


Figure 7: Approvals under the Shire of Carnarvon (2022)

Native vegetation over the application area is either Completely Degraded or in Very Poor condition (Trudgen 1991) (Appendix C) with many areas devoid of native vegetation. The Scorpion Ridge area is particularly degraded, with large areas denuded of vegetation. A Property Assessment Report for Gnaraloo Station (DPaW and NRM 2019) indicated that Buffel Grass (*Cenchrus spp*) is dominant within the coastal pockets and sand dunes.

An existing dunal blowout is currently being used as an overflow camping area (Figure 7). As a component of a Shire of Carnarvon development approval (Section 3.3), the applicant proposes to rationalise and revegetate redundant tracks, and to stabilise and revegetate an existing dunal blowout and rationalise the existing camping area (Figure 7).

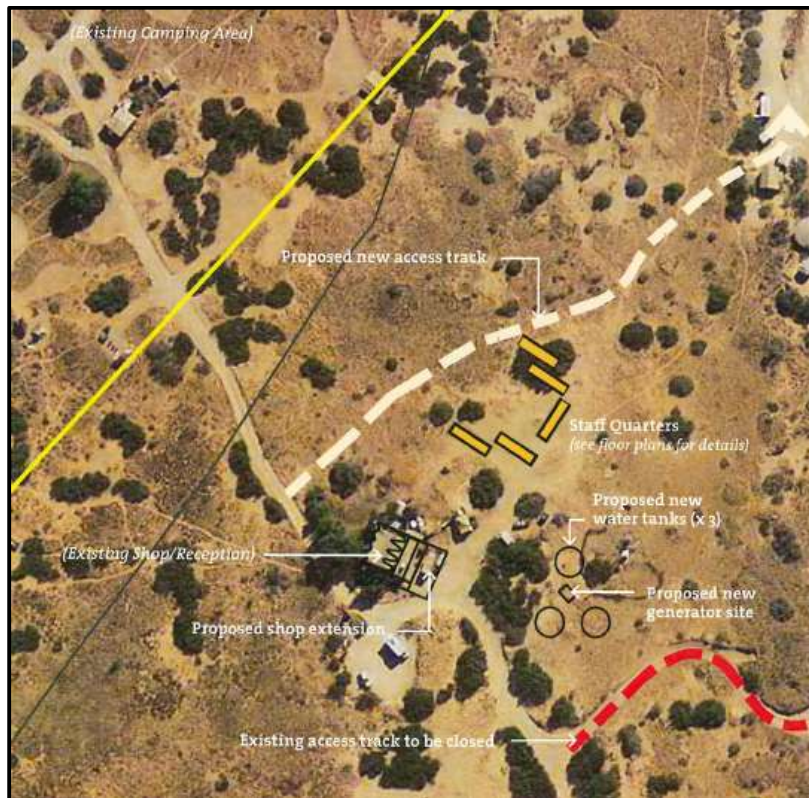


Figure 8: Approvals under the Shire of Carnarvon (2022) – ‘Enlargement A’

Conclusion: The application area is subject to strong prevailing winds, comprises soils prone to wind erosion if left exposed, and comprises areas denuded of vegetation and vegetation in a degraded condition. Surrounding vegetation managed for conservation may be impacted by wind erosion or dunal blowouts migrating into adjacent tenure.

Small areas of clearing are required over degraded areas to facilitate the establishment of staff quarters, a shop extension, new water tanks and a generator site (Figure 8). Potential impacts of wind erosion may be minimised by staged clearing, with the commencement of construction activities occurring closely following authorised clearing to minimise both the area of exposed soils and the time soils are left exposed. Retaining substantial areas of native vegetation between clearing areas (Figure 7) will mitigate the risk of wind erosion. Rationalisation of tracks and stabilising and revegetating the blowout in the north of the application area prior to rationalising the existing camping area at this site will mitigate impacts of wind erosion on adjacent native vegetation. No clearing within adjacent reserves is authorised.

Conditions: To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Staged clearing to be undertaken, with the commencement of infrastructure construction no later than two months after clearing to reduce the potential for wind erosion.
- Weed management measures be implemented to mitigate impacts to adjacent vegetation.
- Use of locally provenanced native species only in any revegetation actions or landscaping.

3.3. Relevant planning instruments and other matters

Clearing permit application CPS 9170/1 is located on Lot 556 on Deposited Plan 415840, Macleod. The application was advertised on the DWER website for a 21 day public comment period on 22 January 2020. No public submissions were received in relation to this application.

The Ningaloo Coast Regional Strategy (WAPC 2004; DPLH and WAPC 2019) is a strategic land use plan that sets a planning framework for sustainable tourism and land use along the Ningaloo coast. The applicant has previously obtained a tourism lease under the *Land Administration Act 1997* for a camping enclave at an area immediately adjacent to, and seaward of, the application area known as the 3 Mile Camp, located on Lot 161 on Deposited Plan 217418 (General Lease L60263) (Portframe Enterprises 2021a). The 3 Mile Camp is a designated Minor Tourism

Node under the Ningaloo Coast Regional Strategy (WAPC 2004) with an accommodation limit of 200 people (Shire of Carnarvon 2021). Lot 161 is zoned 'Tourism' with a Restricted Use provision of camping ground - caravan park, nature-based park, and workforce accommodation.

Under Local Planning Scheme No. 13, the application area within Lot 556 on Deposited Plan 415840 (Lot 556) is located within the Ningaloo Coast, designated as a 'Foreshore Reserve' (Shire of Carnarvon 2021).

Given the required authorisations to access land, the location within the Shire of Carnarvon, and proposed clearing in close proximity to lands managed for conservation, in accordance with section 51E(4)(b) of the EP Act an invitation to comment on the CPS 9170/1 native vegetation clearing application was sent to DPLH, the Shire of Carnarvon, and DBCA. DPLH advised the applicant (DPLH 2021a) that it has no objection to the applicant submitting a native vegetation clearing application to DWER subject to the following conditions:

- Clearing will not commence until Lot 556 is amalgamated into 3 Mile General Lease L60263;
- Clearing will not commence until the 3 Mile easement is registered at the Western Australian Land Information Authority (Landgate). The 3 Mile easement provides the required access between Lot 556 and the Gnaraloo Pastoral Lease; and
- Clearing will not commence until a Development Approval from the Shire of Carnarvon has been issued.

DBCA (2019) advised that the existing 3 Mile Camping enclave immediately adjacent to, and seaward of, the application area has been classified as 'highly modified' due to its high level of visitor use, as well as built accommodation and facilities. The DBCA (2021) advised that the applicant did not have legal access to the application area (outside of the general-purpose lease that they hold, L60263) but understands that the applicant has applied to amalgamate Lot 556 into the adjacent general purpose lease, and an access easement. In consideration to the original application of ten hectares of clearing the DBCA (2021b) recommended that an appropriate buffer to adjacent reserves be maintained to ensure that there are no impacts from accidental clearing.

The applicant has received development approval from the Shire of Carnarvon (Shire of Carnarvon 2022), Lot 556 has been amalgamated into the 3 Mile General Lease L60263 (Portframe Enterprises 2022a), and an easement granted that provides the required access between Lot 556 and the Gnaraloo Pastoral Lease (Portframe Enterprises 2021b; Portframe Enterprises 2022a). Proposed clearing is consistent with the development approval provided by the Shire of Carnarvon (2022) (Figure 7).

Infrastructure has been set back from adjacent DBCA managed reserves (Section 3.2.2). The application area abuts adjacent DBCA managed reserves where the applicant proposes to rationalise and revegetate redundant tracks and to stabilise and revegetate an existing dunal blowout. No clearing within adjacent reserves is authorised.

Proposed clearing is located within the Pilbara Surface Water Area (UFI 54) proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act), as well as the Gascoyne Groundwater Area (UFI 37) proclaimed under the RIWI Act. The application area is not located in any clearing control catchments proclaimed under the *Country Areas Water Supply Act 1947* (CAWS) or any Public Drinking Water Supply Areas (PDWSA). No watercourses traverse the application area, and groundwater will not be extracted (Portframe Enterprises 2021b). Permitting by DWER under the RIWI Act will not be required.

Native Title exists in parts of larger determination areas including, and surrounding, the application area: the Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People (WCD2019/016) (Nganhurra Thanardi Garrbu Aboriginal Corporation NTGAC), with an associated Indigenous Land Use Agreement (ILUA); the Ningaloo Conservation Estate (Yamatji Marlpa Aboriginal Corporation) (WI2020/011).

No Aboriginal Heritage Places have been identified within the application area. However, several Registered Sites or Other Heritage Places occur within the local area, with the closest located approximately 2.6 kilometres to the north. That is, Gnaraloo Bay (Place ID 10100). It is the Permit Holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and to ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Appendix A – Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix B.

1. Site summary

Site characteristic	Details
Local context	The application area is situated within the Carnarvon (CAR) bioregion of Thackway and Cresswell (1995), and the Wooramel subregion (CAR02). Gnaraloo is a working pastoral station and wilderness tourism business (L60263), adjacent to the Ningaloo Marine Park, approximately 150 kilometres north of Carnarvon, in Western Australia.
Vegetation description (Shepherd <i>et al.</i> , 2001)	The application area has been mapped by Shepherd <i>et al.</i> , (2001) as Vegetation Association 329 described as dwarf scrub or open low shrub including dwarf <i>Acacia coriacea</i> shrubs with <i>Acacia</i> spp., <i>Eremophila</i> spp., and <i>Senna</i> spp. The local flora has typical arid (Ereman) affinities evidenced by the significant presence of the families Poaceae, Malvaceae, Ateraceae and Mimosaceae. The Coast Land System supports patchy tall shrublands with <i>Acacia coriacea</i> , <i>Acacia tetragonophylla</i> , <i>Acacia sclerosperma</i> with <i>Eremophila</i> , and <i>Senna</i> over hummock grasslands of <i>Triodia</i> sp with *Buffel grass (<i>*Cenchrus ciliaris</i>) and coastal spinifex (<i>Spinifex longifolius</i>) (DPaW and NRM 2019; Payne <i>et al.</i> 1987).
Vegetation condition (Trudgen 1991)	An inspection of aerial photography indicates that vegetation over the application area is either Completely Degraded or Very Poor (Trudgen 1991) (Appendix C). A Property Assessment Report for Gnaraloo Station (DPaW and NRM 2019) suggests that Buffel Grass (<i>Cenchrus spp</i>) is dominant within coastal pockets and sand dunes. DBCA (2021) understands that the vegetation condition over the application area is somewhat degraded.
Conservation areas	The Ningaloo Marine Park and World Heritage Area are located approximately 180 metres to the north-west of the application area. Crown Reserve R 53686, reserved under Section 5(1)(h) CALM Act 1984, and known as the Nynggulu (Ningaloo) Coastal Reserve, surrounds the application area and adjacent existing 3 Mile Camp Lease (L60263).
Environmentally sensitive areas	A mapped Environmentally Sensitive Area (ESA) associated with the Ningaloo Marine Park World Heritage Area is located approximately 280 metres to the west of the application area.
Ecological linkages	The application area is not located in any recognised formal ecological linkages.
Land System and Soil description (Payne <i>et al.</i> 1987)	The application area is located within the Coast Land System of undulating sandy plains, linear dunes and interdunal swales. Coastal plains, beaches and dunes - large coastal dunes (some unvegetated) with narrow swales, limestone plains and beaches. Large parabolic coastal dunes and sandy swales with minor limestone plains, low sea cliffs and rocky wave cut platforms with soil type 238Cs.
Land degradation risk (DPIRD 2017)	The dunes and coastal plains of the Coast Land System have a high susceptibility to wind erosion, particularly when denuded of adequate vegetation cover (Payne <i>et al.</i> , 1987).
Waterbodies	There are no wetlands or watercourses within the vicinity of the application area with the closest mapped watercourse nine kilometres distant. The coastal waterline has been mapped within 150 metres to the west of the application are at its closest point. Lake McLeod is located approximately 12 kilometres to the east. Lake McLeod is listed in the Directory of important wetlands (WA009), and is a Draft Proposed Ramsar Addition.

Site characteristic	Details						
Landform and Climate	Climate is semi-arid, warm and temperate. Rainfall is low with the winter months having higher rainfall than summer months with an annual rainfall of approximately 220 millimetres (BOM 2021).						
Hydrogeography	<table border="1"> <tr> <td>Hydrographic Division</td> <td>Indian Ocean</td> </tr> <tr> <td>Hydrographic Catchment</td> <td>Coastal (UFI 223)</td> </tr> </table>	Hydrographic Division	Indian Ocean	Hydrographic Catchment	Coastal (UFI 223)		
	Hydrographic Division	Indian Ocean					
	Hydrographic Catchment	Coastal (UFI 223)					
	Rights in Water and Irrigation Act 1914						
	<table border="1"> <tr> <td>Surface water areas and irrigation districts</td> <td>Located within the proclaimed Pilbara Surface Water Area (UFI 54)</td> </tr> <tr> <td>Groundwater areas</td> <td>Located within the proclaimed Gascoyne Groundwater Area (UFI 37)</td> </tr> <tr> <td>Watercourses</td> <td>None</td> </tr> </table>	Surface water areas and irrigation districts	Located within the proclaimed Pilbara Surface Water Area (UFI 54)	Groundwater areas	Located within the proclaimed Gascoyne Groundwater Area (UFI 37)	Watercourses	None
	Surface water areas and irrigation districts	Located within the proclaimed Pilbara Surface Water Area (UFI 54)					
	Groundwater areas	Located within the proclaimed Gascoyne Groundwater Area (UFI 37)					
	Watercourses	None					
	Country Areas Water Supply Act 1947						
	<table border="1"> <tr> <td>Clearing control catchments</td> <td>None</td> </tr> </table>	Clearing control catchments	None				
Clearing control catchments	None						
Other							
<table border="1"> <tr> <td>Public Drinking Water Supply Area (PDWSA)</td> <td>None</td> </tr> </table>	Public Drinking Water Supply Area (PDWSA)	None					
Public Drinking Water Supply Area (PDWSA)	None						

2. Vegetation extent

2a) Regional vegetation mapping (Government of Western Australia 2019a)

Factor		Pre-European extent (ha)	Current extent (ha)	Remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion of pre-European extent in all DBCA managed land (%)
Carnarvon Bioregion	CAR	8,382,890	8,360,801	99.74	301,591	3.60

Factor		Pre-European Extent (ha)	Current Extent (ha)	Remaining (%)	Current extent: Land protected (reserved) and proposed (not yet reserved) for conservation (ha)	Current percentage: Land protected (reserved) and proposed (not yet reserved) for conservation (%)
Vegetation Type Shepherd <i>et al.</i> , (2001)	329	25,113	25,101	99.95	4,027	16.04

2b) Remnant vegetation within ten kilometres of the application area

Remnant Vegetation	Hectares (ha)	Remaining %
Total Area (50 km radius)	368,604	100
Remnant vegetation remaining	367,991	99.7

3. Ecological communities, flora, and fauna

3a) Conservation significant ecological communities

No Threatened Ecological Communities (TECs) endorsed by the Western Australian Minister for the Environment (DBCA 2020) have been mapped within 50 kilometres of the application area. The vegetation of the application area does not align with any TECs endorsed by the Western Australian Minister for the Environment.

The Lake MacLeod invertebrate assemblages are a Priority 4 Priority Ecological Community (PEC) located approximately 15 kilometres to the south-east.

3b) Conservation significant flora

No Threatened flora taxa have been recorded within 50 kilometres of the application area.

Four Priority flora taxa have been recorded within 50 kilometres of the application area. The closest is the P3 *Stackhousia clementii* within samphire flats surrounding Lake MacLeod approximately 24.4 kilometres to the east.

Taxon	Status	Count	Closest (~km)	Habitat
<i>Acacia ryaniana</i>	P2	5	39.6	Red-white sands on dunes
<i>Ptilotus alexandri</i>	P2	2	45.5	Red-white sands on dunes
<i>Stackhousia clementii</i>	P3	2	24.4	Samphire flats
<i>Stenanthemum divaricatum</i>	P3	2	37.7	White or yellow sand over sandstone

3c) Conservation significant fauna

Two mammals, four reptiles and 38 birds of conservation significance have been recorded within 50 kilometres of the application area.

Common name	Scientific name	Status	Count	Closest (~km)	Category
Birds					
Malleefowl	<i>Leipoa ocellata</i>	VU	8	29.2	Terrestrial
Peregrine Falcon	<i>Falco peregrinus</i>	OS	10	15.5	Raptor
Letter-winged Kite	<i>Elanus scriptus</i>	P4	2	29.1	Raptor
Osprey	<i>Pandion cristatus</i>	IA	19	6.7	Raptor
Curlew Sandpiper	<i>Calidris ferruginea</i>	CR	26	9.2	Shorebird
Great Knot	<i>Calidris tenuirostris</i>	CR	17	9.2	Shorebird
Eastern Curlew	<i>Numenius madagascariensis</i>	CR	2	26.6	Shorebird
Red Knot	<i>Calidris canutus</i>	EN	10	9.2	Shorebird
Lesser Sand Plover	<i>Charadrius mongolus</i>	EN	12	9.2	Shorebird
Greater Sand Plover	<i>Charadrius leschenaultii</i>	VU	17	0.3	Shorebird
Bar-tailed Godwit	<i>Limosa lapponica</i>	IA	9	9.2	Shorebird
Black-tailed Godwit	<i>Limosa limosa</i>	IA	9	9.2	Shorebird
Broad-billed Sandpiper	<i>Limicola falcinellus</i>	IA	5	9.2	Shorebird
Common Greenshank	<i>Tringa nebularia</i>	IA	3	9.2	Shorebird
Common Sandpiper	<i>Actitis hypoleucos</i>	IA	30	9.2	Shorebird
Grey Plover	<i>Pluvialis squatarola</i>	IA	8	9.2	Shorebird
Long-toed Stint	<i>Calidris subminuta</i>	IA	13	9.2	Shorebird
Pectoral Sandpiper	<i>Calidris melanotos</i>	IA	12	9.2	Shorebird
Red-Necked Stint	<i>Calidris ruficollis</i>	IA	11	9.2	Shorebird
Ruddy Turnstone	<i>Arenaria interpres</i>	IA	9	9.2	Shorebird
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	IA	6	9.2	Shorebird

Common name	Scientific name	Status	Count	Closest (~km)	Category
Sanderling	<i>Calidris alba</i>	IA	9	15.5	Shorebird
Red-necked Phalarope	<i>Phalaropus lobatus</i>	IA	11	19.4	Shorebird
Oriental Plover	<i>Charadrius veredus</i>	IA	19	14.3	Shorebird
Grey-tailed Tattler	<i>Tringa brevipes</i>	IA	15	15.5	Shorebird
Marsh Sandpiper	<i>Tringa stagnatilis</i>	IA	8	15.5	Shorebird
Pacific Golden Plover	<i>Pluvialis fulva</i>	IA	12	15.5	Shorebird
Terek Sandpiper	<i>Xenus cinereus</i>	IA	6	15.5	Shorebird
Whimbrel	<i>Numenius phaeopus</i>	IA	4	31.3	Shorebird
Wood Sandpiper	<i>Tringa glareola</i>	IA	1	37.8	Shorebird
Roseate Tern	<i>Sterna dougallii</i>	IA	7	0.3	Tern
Common Tern	<i>Sterna hirundo</i>	IA	30	12.7	Tern
Crested Tern	<i>Thalasseus bergii</i>	IA	26	12.7	Tern
White-winged Black Tern	<i>Chlidonias leucopterus</i>	IA	4	12.7	Tern
Caspian Tern	<i>Hydroprogne caspia</i>	IA	5	9.2	Tern
Little Tern	<i>Sternula albifrons</i>	IA	2	9.2	Tern
Gull-billed Tern	<i>Gelochelidon nilotica</i>	IA	15	17.2	Tern
Common Noddy	<i>Anous stolidus</i>	IA	3	17.5	Tern
Mammals					
Red-Tailed Phascogale	<i>Phascogale calura</i>	CD	7	27.2	Terrestrial
Humpback whale	<i>Megaptera novaeangliae</i>	CD	14	12.7	Marine
Reptiles					
Gnaraloo Mulch Slider	<i>Lerista haroldi</i>	P1	2	6.7	Terrestrial
Loggerhead Turtle	<i>Caretta caretta</i>	EN	13	6.4	Marine
Green Turtle	<i>Chelonia mydas</i>	VU	8	6.4	Marine
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	VU	21	6.4	Marine

Appendix B – Assessment against the Clearing Principles

Assessment against the Clearing Principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u> The application area consists of dwarf scrub or open low shrub including dwarf <i>Acacia coriacea</i> shrubs with <i>Acacia</i> spp., <i>Eremophila</i> spp., and <i>Senna</i> spp. With hummock grasslands of soft spinifex and hard spinifex (DPaW and NRM (2019). Given the habitat and vegetation condition over the application area, and the separation distances to known records Priority flora are unlikely to be present, and the vegetation does not correspond to any significant ecosystems or significant habitat for fauna. Noting the composition and condition of the vegetation proposed to be cleared, the application area is unlikely to comprise a high level of biodiversity. Similarly, the vegetation under application is unlikely to represent communities that are more biodiverse than the extensive areas of native vegetation surrounding the application area, including within lands managed for conservation.</p>	Not likely to be at variance	No
<p><u>Principle (b):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</p> <p><u>Assessment:</u> Two mammals, four reptiles and 38 birds of conservation significance have been recorded within 50 kilometres of the application area. Of the four reptiles, one is the Priority 1 skink the Gnaraloo Mulch Slider (<i>Lerista haroldi</i>) that has been recorded within seven kilometres of the application area in similar habitat. The remaining three are marine turtles. Two high-density marine turtle rookeries are known from the local area; the Gnaraloo Bay Rookery, and the Cape Farquhar Rookery. Twenty-six shorebirds and eight terns have also been recorded from the local area. The application area is located within 125 metres of beach habitat and the intertidal zone that provides potential breeding habitat to marine turtles, feeding and roosting habitat to shorebirds, and roosting and breeding habitat to terns. Given the scale of clearing and separation distances to key habitats, proposed clearing is unlikely to negatively impact significant fauna habitat.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u> No Threatened flora taxa have been recorded within 50 kilometres of the application area. With regard to the extent, condition and composition of the vegetation proposed to be cleared, the native vegetation present is unlikely to include, or be necessary for the continued existence of Threatened flora.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.”</p> <p><u>Assessment:</u> No Threatened Ecological Communities (TECs) endorsed by the Western Australian Minister for the Environment have been mapped within 50 kilometres of the application area. The vegetation of the application area does not align with any TECs endorsed by the Western Australian Minister for the Environment. With regard to the extent, condition and composition of the vegetation proposed to be cleared, the native vegetation present is unlikely to include, or be necessary for the continued existence of TECs.</p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
Environmental values: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The national objectives and targets for biodiversity conservation in Australia has a target to prevent the clearance of ecological communities with an extent below 30 per cent of that present prior to the year 1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). The Carnarvon Bioregion retains over 99 per cent of its original vegetation. Regional vegetation mapping has been completed by Shepherd <i>et al.</i>, (2001) with the vegetation under application aligning with Vegetation Association 329 described as dwarf scrub or open low shrub including dwarf <i>Acacia coriacea</i> shrubs with <i>Acacia</i> spp., <i>Eremophila</i> spp., and <i>Senna</i> spp. Vegetation Association 329 retains over 99 per cent of its original vegetation. Within a 50 kilometre radius of the application area, over 99 per cent of remnant vegetation has been retained. The native vegetation under application is not considered significant as a remnant of native vegetation within an area that has been extensively cleared.</p>	Not likely to be at variance	No
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u> The Ningaloo Marine Park (World Heritage Area) is located approximately 60 metres to the north-west of the application area at its closest point. Crown Reserve R 53686 surrounds the application area (and adjacent existing 3 Mile Camp Lease - L60263). Crown Reserve R 53686 is managed by DBCA and forms part of the Nynggulu (Ningaloo) coastal reserves; Red Bluff to Winderabandi. Given the proximity to these conservation areas, proposed clearing has the potential to negatively impact these areas without appropriate management strategies implemented.</p>	May be at variance	Yes Refer to Section 3.2.2
Environmental values: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> There are no wetlands or watercourses within the vicinity of the application area, however, the coastal waterline is mapped within five metres of the application area. Lake McLeod is listed in the Directory of important wetlands (WA009), and is a Draft Proposed Ramsar Addition. The mapped area of Lake McLeod is located approximately 14 kilometres to the east of the application area. The native vegetation under application is not growing in, or in association with, an environment associated with a watercourse or wetland.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u> The application area is located within the Coast Land System of coastal plains, beaches and dunes described as large coastal dunes (some unvegetated) with narrow swales, limestone plains and beaches, with soil type 238Cs. The dunes and coastal plains of the Coast Land System have a high susceptibility to wind erosion, particularly when denuded of adequate vegetation cover (Payne <i>et al.</i> 1987).</p>	May be variance	Yes Refer to Section 3.2.3

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u> The application area is located in the Coastal catchment of the Indian Ocean Hydrographic Division. Proposed clearing is located within the Pilbara Surface Water Area (UFI 54) proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act), as well as the Gascoyne Groundwater Area (UFI 37) proclaimed under the RIWI Act. The application area is not located in any clearing control catchments proclaimed under the <i>Country Areas Water Supply Act 1947</i> (CAWS) or any Public Drinking Water Supply Areas (PDWSA). There are no wetlands or watercourses within the vicinity of the application area. The closest mapped watercourse is approximately 15 kilometres distant, associated with Lake McLeod. Groundwater over the area has been mapped at 3,000 to 7,000 TDS mg/L (that is, brackish to saline). Proposed clearing of native vegetation is not likely to cause any deterioration in the quality of surface or underground water.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u> The climate of the application area is semi-arid. Rainfall is low with an annual rainfall of approximately 220 millimetres (BOM 2021) falling predominantly in the winter months. The topography of the application area is predominantly flat with well-drained soils. The application area is located within the Coastal Catchment (UFI 223), with surface water and groundwater discharging to the Indian Ocean. There are no wetlands or watercourses within the vicinity of the application area, and the application area is mapped as a low flood risk with no mapped floodplains mapped within the local area. The coastal waterline is mapped within five metres of the application area, and the application area is located within 30 metres of beaches and the intertidal zone and the northern area of the application area may be at risk of coastal inundation. However, the clearing proposed is not likely to cause, or exacerbate, the incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix C – Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Trudgen, M.E. (1991) *Vegetation condition scale*, in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D – References and databases

1. References

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2. GIS datasets

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

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- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Soil and Landscape Mapping – Best Available

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)