



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9149/1
File Number: DWERVT7181
Duration of Permit: From 14 April 2021 to 14 April 2023

PERMIT HOLDER

Pilbara Ports Authority

LAND ON WHICH CLEARING IS TO BE DONE

Lot 370 on Deposited Plan 35619, Boodarie

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.0272 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. 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.

2. 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.

3. 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 | <ul 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); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with <i>condition 1</i>; and (f) actions taken to minimise the risk of the introduction and spread of weeds in accordance with <i>condition 2</i>. |

4. Reporting

The permit holder must provide to the *CEO* the records required under *condition 3* of this permit when requested by the *CEO*.

DEFINITIONS

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

Table 2: Definitions

| Term | Definition |
|-------------------|--|
| CEO | Chief Executive Officer of the <i>department</i> 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 fill a hollow. |
| 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. |
| weeds | means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned. |

END OF CONDITIONS



Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

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

22 March 2021

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

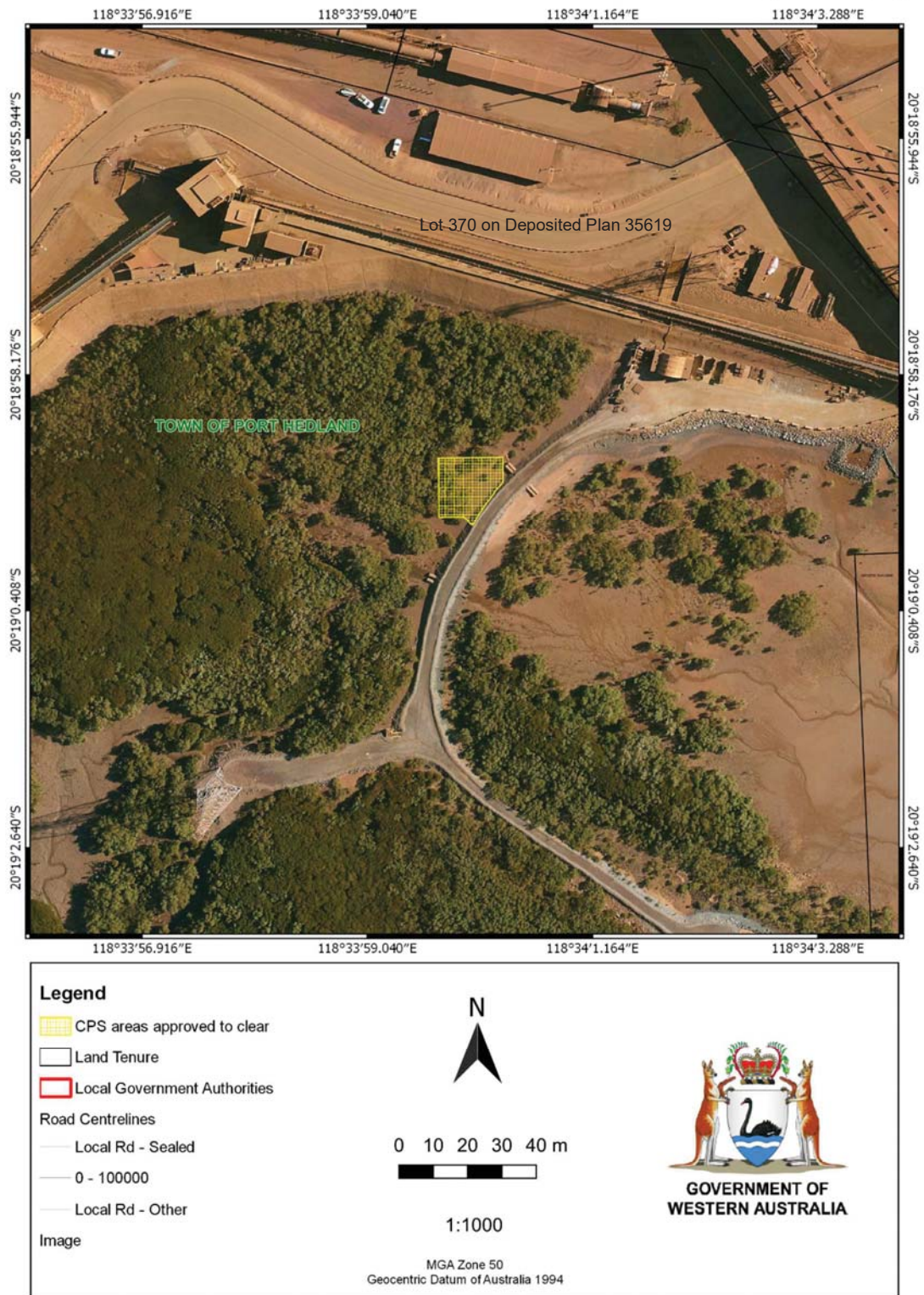


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

| | |
|-------------------------------|--|
| Permit number: | CPS 9149/1 |
| Permit type: | Area permit |
| Applicant name: | Pilbara Ports Authority |
| Application received: | 14 December 2020 |
| Application area: | 0.0272 hectares of native vegetation |
| Purpose of clearing: | Installation of a dust monitoring system |
| Method of clearing: | Mechanical |
| Property: | Lot 370 on Deposited Plan 35619 |
| Location (LGA area/s): | Town of Port Hedland |
| Localities (suburb/s): | Boodarie |

1.2. Description of clearing activities

The vegetation proposed to be cleared is a 0.0272 hectare patch within a contiguous stand of intertidal mangroves (see Figure 1, Section 1.5). The proposed clearing is to facilitate the installation of an upgraded dust monitoring system, in accordance with Licence L8937/2015/1.

1.3. Decision on application

| | |
|-----------------------|--|
| Decision: | Granted |
| Decision date: | 22 March 2021 |
| Decision area: | 0.0272 hectares of native vegetation, as depicted in Section 1.5, 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 14 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.1), the findings of a mangrove health assessment (O2 Marine, 2021), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration that the proposed clearing relates to the installation of an upgraded dust monitoring system, as required under Licence L8937/2015/1.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values. The Delegated Officer decided to grant a clearing permit subject to standard avoid and minimise and weed and dieback management conditions.

1.5. Site map

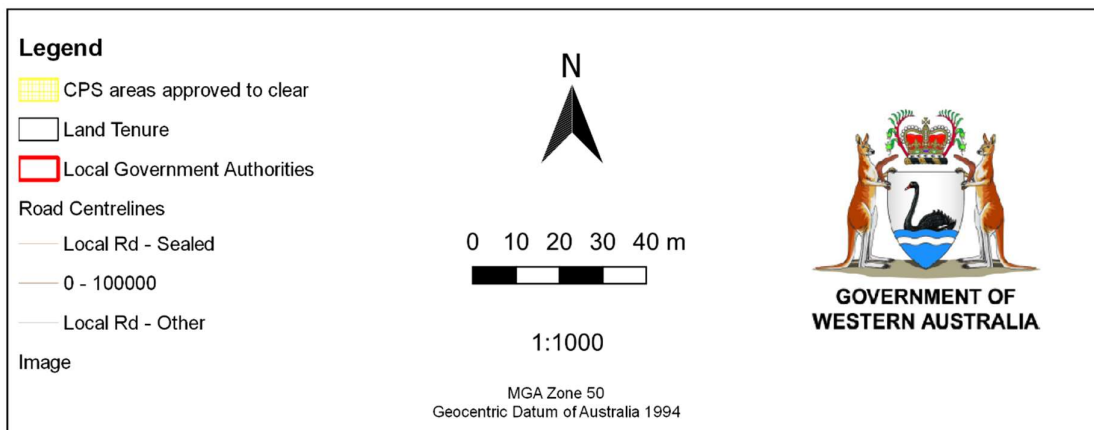


Figure 1. The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

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 (see Section 1.4), 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
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant advised that the proposed clearing is required in order to upgrade the existing dust monitoring network conditioned under Licence L8937/2015/1, to ensure the network meets the standards for a siting compliance monitor and fits the source/pathway/receptor model (Pilbara Ports Authority, 2020). The applicant advised that there were two options to upgrade the existing dust monitoring network; raise the existing monitors to meet the Australian Standards for siting or install a new dust monitor to replace the existing non-compliant system (Pilbara Ports Authority, 2020). On review, the applicant identified that the infrastructure required to raise the existing monitors would involve a significant disturbance to the surrounding mangroves, and determined that a new dust monitor would result in a smaller disturbance footprint (Pilbara Ports Authority, 2020).

In determining the location of the new dust monitor, the applicant considered installation within an existing disturbance footprint (Pilbara Ports Authority, 2020). However, the engineering design identified that the structure required was larger than the existing disturbance footprint, as it needed to be constructed to meet engineering standards for a cyclone prone area (Pilbara Ports Authority, 2020). Given the above, the applicant determined that the location of the dust monitor proposed under CPS 9149/1 would have the smallest clearing footprint and the least impact to nearby mangrove communities, and posed the lowest risk for personnel accessing the monitor for servicing and maintenance, as it tied into existing infrastructure and access tracks (Pilbara Ports Authority, 2020).

Noting the above, the Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see 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 (see Appendix B) identified that the impacts of the proposed clearing present a risk to biological values (fauna) and water resources. 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. Biological values (fauna) - Clearing Principle (b)

Assessment

A review of available databases indicates that a total of 66 conservation significant fauna species have been recorded within the local area (see Appendix A.2). These species were listed under the state *Biodiversity Conservation Act 2016* (BC Act) and/or *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), as Priority species by DBCA, or are migratory species listed under International Agreements (MI).

Of the conservation significant fauna species recorded within the local area, the following have the potential to be found within the application area based on habitat preferences:

- 28 species of migratory waterbird protected under International Agreements, which may inhabit mangrove communities for foraging or roosting habitat, or as transient habitat during migration (Commonwealth of Australia, 2015).
- *Calidris canutus* (Red knot) (Endangered under EPBC Act and Vulnerable under BC Act) typically inhabit intertidal mudflats, sand flats and sandy beaches of sheltered coasts, estuaries, or terrestrial saline wetlands near the coast (TSSC, 2016a). The mixed mangrove habitat in the application area is unlikely to provide suitable breeding, roosting or foraging habitat, but may provide transient habitat for this species as it migrates between more suitable coastal habitat.
- *Calidris ferruginea* (Curlew sandpiper) (Critically Endangered under EPBC Act and Vulnerable under BC Act) is found on intertidal mudflats of estuaries, lagoons, mangroves, as well as beaches, rocky shores and around lakes, dams and floodwaters (DoE, 2015a). The mixed mangrove habitat in the application area is unlikely to provide suitable breeding, roosting or foraging habitat, but may provide transient habitat for this species as it migrates between more suitable coastal habitat.
- *Calidris tenuirostris* (Great knot) (Critically Endangered under EPBC Act and BC Act) inhabit intertidal mudflats and sandflats in sheltered coasts, including bays and estuaries (TSSC, 2016b). They forage on the moist mud, and often roost on beaches or in nearby low vegetation, such as mangroves or dune vegetation (TSSC, 2016b). This species has been recorded utilising mangrove communities for roosting and foraging (TSSC, 2016b).
- *Charadrius leschenaultii* (Greater sand plover) (Vulnerable under EPBC Act and BC Act) is known to occur in littoral and estuarine habitats, typically on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks (TSSC, 2016c). This species has been recorded utilising mangrove communities (TSSC, 2016c).
- *Charadrius mongolus* (Lesser sand plover) (Endangered under EPBC Act and BC Act) usually occurs in coastal littoral and mudflats in estuaries or beaches, but has also been recorded at inland sites in muddy areas around lakes, soaks and bores (TSSC, 2016d). This species has been recorded utilising mangrove communities (TSSC, 2016d).
- *Chelonia mydas* (Green turtle) (Vulnerable under EPBC Act and BC Act) is a migratory marine reptile associated with shallow, benthic foraging habitats such as tropical tidal and sub-tidal coral and rocky reef habitats, or inshore seagrass beds or mangrove heath (DoEE, 2017). Although the mixed mangrove habitat in the application area may provide suitable foraging habitat for this species, it is considered highly unlikely that this species would be utilising the application area, given its distance and separation from the mouth of the estuary by existing infrastructure.
- *Limosa lapponica menzbieri* (Bar-tailed godwit, northern Siberian) (Critically Endangered under EPBC Act and BC Act) typically inhabit coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays (TSSC, 2016e). The mixed mangrove habitat in the application area is unlikely to provide suitable breeding, roosting or foraging habitat, but may provide transient habitat for this species as it migrates between more suitable coastal habitat.
- *Mormopterus cobourgiensis* (North-western free-tailed bat) (Priority 1) is associated with mangrove communities in Western Australia but is also found in woodland in the Northern Territory, roosting in tree hollows (Reardon, et al., 2014). The mixed mangrove habitat in the application area may provide suitable breeding, roosting or foraging habitat for this species.
- *Numenius madagascariensis* (Eastern curlew) (Critically Endangered under EPBC Act and BC Act) is found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons (DoE, 2015b). This species has been recorded utilising mangrove communities for roosting and foraging (DoE, 2015b).
- *Pristis zijsron* (Green sawfish) (Vulnerable under EPBC Act and BC Act) typically inhabit shallow, sediment-heavy coastal and riverine environments, including inshore marine waters, estuaries, river mouths, embankments and along sandy and muddy beaches (TSSC, 2008). Although the mixed mangrove habitat in the application area may provide suitable habitat for this species, it is considered highly unlikely that this species would be utilising the application area, given its distance and separation from the mouth of the estuary by existing infrastructure.
- *Sternula nereis nereis* (Fairy tern) (Vulnerable under EPBC Act and BC Act) utilises a variety of habitats including offshore, estuarine, or lacustrine (lake) islands, wetlands, beaches and spits (DSEWPC, 2011). The mixed mangrove habitat in the application area is unlikely to provide suitable breeding, roosting or foraging habitat, but may provide transient habitat for this species as it migrates between more suitable coastal habitat.
- *Tringa brevipes* (Grey-tailed tattler) (Priority 4) is known to occur in sheltered coasts with reefs or rock platforms or with intertidal mudflats, including embayments, estuaries, and coastal lagoons, especially those

fringed with mangroves (Higgins and Davies, 1996). This species has been recorded utilising mangrove communities for roosting and foraging (Higgins and Davies, 1996).

While the aforementioned conservation significant fauna species have the potential to occur within the application area, it is acknowledged that the mixed mangrove habitat present within the application area is well-represented within the greater Utah Point area and further abroad within the Port Hedland harbour (O2 Marine, 2021). Further, the application area comprises approximately 0.00065 per cent of the adjacent mangrove stand and, based on figures available in Technical Guidance – Protection of Benthic Communities and Habitats (EPA, 2016), approximately 0.000012 per cent of the total existing mangrove community present within the Port Hedland Local Assessment Unit. Noting the extent of the proposed clearing and that abundant suitable habitat is available in the local area, it is not considered likely that the application area represents significant breeding, roosting or foraging habitat for any conservation significant fauna species.

It is also noted that the proposed clearing will result in the loss of 0.0272 hectares of mangrove habitat on the edge of a 42 hectare expansive stand of intertidal mangroves at Utah Point, and is also adjacent to the Utah Point Multi-User Bulk Handling Facility and an associated infrastructure, which has experienced a high degree of disturbance. Given the above, it is not likely that the proposed clearing will reduce connectivity within the adjacent mangrove stand or significantly impact fauna species utilising the area for movement or migration between areas of suitable habitat.

Conclusion

Based on the above assessment, the Delegated Officer determined that proposed clearing is unlikely to result in impacts to significant habitat for fauna species and does not constitute a significant residual impact.

Conditions

No fauna management conditions required.

3.2.2. Land and water resources - Clearing Principles (f) and (i)

Assessment

Given the application area intersects a perennial estuary and includes intertidal mangrove habitat, the vegetation proposed to be cleared is considered to be growing in an environment associated with a watercourse or wetland. However, as discussed above, the proposed clearing will result in the loss of 0.0272 hectares of mangrove habitat on the edge of a 42-hectare expansive stand of intertidal mangroves at Utah Point, including less than 0.001 per cent of the adjacent mangrove stand and total existing mangrove community present within the Port Hedland Local Assessment Unit. It is also noted that the application area is easily accessible as it is adjacent to the Utah Point Multi-User Bulk Handling Facility and an associated infrastructure, making it unlikely that the clearing activities will result in significant disturbance to the adjacent mangrove stand. The implementation of a suitable weed management condition is considered appropriate to mitigate the impact of spreading weeds into the adjacent mangrove community or disturbing other nearby vegetation. Additionally, as the proposed clearing area is adjacent to an access road and is on the landward side of this road, it is not considered likely that the proposed clearing will significantly impact tidal flows within the estuary. Noting the above and its extent, the proposed clearing is not anticipated to result in any long-term impacts to the ecological values provided by the mangrove communities associated with the estuary.

The application area is also mapped within the Pilbara Surface and Groundwater Areas. The removal of mangrove vegetation has the potential to increase sedimentation and turbidity within the estuary, thereby possibly impacting surface water quality. However, given the extent of the proposed clearing, the abundance of mangrove stands within the estuary, and the fact that the application area is on the landward side of the adjacent access road, it is likely that any impacts to water quality will be minimal and short-term. Noting the above, it is not likely that the proposed clearing will cause significant or long-term deterioration in the quality of surface or underground water.

Conclusion

Based on the above assessment, the Delegated Officer determined that proposed clearing is unlikely to result in significant impacts to the ecological values provided by the mangrove communities associated with the estuary or to significant or long-term impacts to the quality of surface or underground water.

Conditions

A weed management condition will be implemented to manage potential impacts to adjacent riparian vegetation as a result of the proposed clearing.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on DWER's website on 10 February 2021, inviting submissions from the public within a 14-day period. No submissions were received in relation to this application.

The Town of Port Hedland advised DWER that they did not have any comments or objections regarding the proposed clearing (Town of Port Hedland, 2021).

DWER's Contaminated Sites Branch advised that records are held for Lot 370 on Deposited Plan 35619 due to potential contamination issues in several lease areas including a diesel spill, raw sewage spill and disposal of dredging sediments (DWER, 2021). However, the diesel and sewage spills occurred in areas a significant distance to the south of the proposed clearing area which have been classified separately (DWER, 2021). Given the above, DWER's Contaminated Sites Branch advised that they had no objection to the proposed vegetation clearing (DWER, 2021).

One Aboriginal site of significance, the Minhakurrpanha site, is mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Site characteristics

| Characteristic | Details |
|--|--|
| Local context | The area proposed to be cleared is part of a 42 hectare expansive stand of intertidal mangroves in the extensive land use zone of Western Australia. It is adjacent to the Utah Point Multi-User Bulk Handling Facility and an associated access road and occurs within the estuary between Finucane Island and Nelson Point in Port Hedland. Spatial data indicates the local area (50-kilometre radius from the centre of the area proposed to be cleared) retains approximately 94.48 per cent of the original native vegetation cover. |
| Conservation areas | The closest conservation area is Eighty Mile Beach Marine Park, which occurs approximately 115 kilometres east of the proposed clearing area. |
| Vegetation description | <p>Photographs supplied by the applicant and a mangrove health and habitat assessment (O2 Marine, 2021) indicate that the vegetation within the proposed clearing area consists of the following habitat types:</p> <ul style="list-style-type: none"> • Mixed heath of <i>Avicennia marina</i> and <i>Aegiceras corniculatum</i> (Am/Ac); • Scattered <i>Avicennia marina</i> (Am3), with large gaps in canopy; • Mud/sand flat with no vegetation; and • Rock barriers with no vegetation (O2 Marine, 2021). <p>The full survey mapping is available in Appendix D.</p> <p>This is consistent with the mapped Beard vegetation association 43, which is described as low forest (Kimberley) or thicket (Pilbara) mangroves <i>Avicennia marina</i>, <i>Rhizophora stylosa</i>, and <i>Bruguiera exaristata</i> (Shepherd et al, 2001).</p> |
| Vegetation condition | <p>Photographs supplied by the applicant and a mangrove health and habitat assessment (O2 Marine, 2021) indicate that the vegetation within the proposed clearing area is in Very Good (Trudgen, 1991) condition, described as some relatively slight signs of damage caused by human activities since European settlement.</p> <p>The full Trudgen (1991) condition rating scale is provided in Appendix C. Representative photos and the survey descriptions and mapping are available in Appendix D.</p> |
| Soil description and land degradation risk | <p>The soil is mapped within the Littoral System (286Li) described as bare coastal mudflats (unvegetated), samphire flats, sandy islands, coastal dunes and beaches, supporting samphire low shrublands, sparse acacia shrublands and mangrove forests (DPIRD, 2019).</p> <p>The Littoral System is considered to have a low risk of land degradation resulting from wind erosion, water erosion, salinity, subsurface acidification, or phosphorus export, but may have a high risk of waterlogging and flooding (Van Vreeswyk et al., 2004).</p> |
| Waterbodies and Hydrogeography | <p>The desktop assessment and aerial imagery indicated that the proposed clearing area intersects a perennial estuary. The closest wetland is the Leslie (Port Hedland) Saltfields System, occurring approximately 16.4 kilometres east of the application area.</p> <p>The application area is mapped within the Pilbara Surface and Groundwater Areas proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (the RIWI Act).</p> |

| Characteristic | Details |
|------------------------|---|
| Flora | <p>The desktop assessment identified that a total of 15 threatened or priority flora species have been recorded within the local area, comprising two Priority 1 (P1) flora, one Priority 2 (P2) flora, eight Priority 3 (P3) flora, three Priority 4 (P4) flora, and one threatened flora (Western Australian Herbarium, 1998-). None of these existing records occur within the amended area, with the closest record being an occurrence of <i>Gomphrena pusilla</i> (P2) approximately 1.8 kilometres from the application area, separated by road and industrial infrastructure.</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), the current land use, the habitat preferences of the aforementioned species, and the distribution and extent of existing records, impacts to conservation significant flora species or significant habitat for these species were not considered likely to result from the proposed clearing and did not require further consideration.</p> |
| Ecological communities | <p>The desktop assessment identified that the closest state-listed threatened ecological community (TEC) is an occurrence of the Themeda grasslands on cracking clays (Hamersley Station, Pilbara) TEC, which occurs approximately 230.2 kilometres south of the application area.</p> <p>The closest state-listed priority ecological community (PEC) is an occurrence of the Horseflat Land System of the Roebourne Plains, approximately 88.5 kilometres west of the application area.</p> |
| Fauna | <p>The desktop assessment identified that a total of 66 threatened or priority fauna species have been recorded within the local area, including 19 threatened fauna species, seven priority fauna species, 38 fauna species protected under international agreement, and two other specially protected fauna species (DBCA, 2007-). None of these records occur within the application area, with the closest record being a north-western free-tailed bat (<i>Mormopterus cobourgianus</i>) occurring approximately 100 metres from the application area.</p> <p>With consideration for the site characteristics set out above and relevant datasets (see Appendix E.1), the application area may provide suitable habitat for 40 of the aforementioned conservation significant fauna species and impacts to these species required further consideration (see Appendix A.2).</p> |

A.1. Vegetation extent

| | Pre-European extent (ha) | Current extent (ha) | Extent remaining (%) | Current extent in all DBCA managed land (ha) | Current proportion (%) of pre-European extent in all DBCA managed land |
|---|--------------------------|---------------------|----------------------|--|--|
| IBRA bioregion* | | | | | |
| Pilbara | 17,808,657.04 | 17,731,764.88 | 99.57 | 1,801,714.98 | 10.12 |
| Vegetation complex | | | | | |
| Beard vegetation association 43 * | 193,260.12 | 175,894.19 | 91.01 | 64383.95 | 33.31 |
| Vegetation complex in IBRA bioregion | | | | | |
| Beard vegetation association 43 (Pilbara) * | 17,053.31 | 14,708.68 | 86.25 | 2.53 | 0.01 |

| | Pre-European extent (ha) | Current extent (ha) | Extent remaining (%) | Current extent in all DBCA managed land (ha) | Current proportion (%) of pre-European extent in all DBCA managed land |
|---------------------|--------------------------|---------------------|----------------------|--|--|
| Local area | | | | | |
| 50-kilometre radius | 419,339.18 | 396,200.59 | 94.48 | - | - |

*Government of Western Australia (2019)

A.2. Fauna analysis table

With consideration for the site characteristics set out above and relevant datasets (see Appendix E.1), impacts to the following conservation significant fauna required further consideration.

| Species name | Conservation status | Suitable habitat features? [Y/N] | Suitable vegetation type? [Y/N] | Distance of closest record to application area (km) | Number of known records in local area (total) | Are surveys adequate to identify? [Y, N, N/A] |
|---|---------------------|----------------------------------|---------------------------------|---|---|---|
| <i>Calidris canutus</i> (Red knot) | EN | Y | N | 1.4 | 18 | N/A |
| <i>Calidris ferruginea</i> (Curlew sandpiper) | CR | Y | N | 1.5 | 52 | N/A |
| <i>Calidris tenuirostris</i> (Great knot) | CR | Y | N | 1.5 | 33 | N/A |
| <i>Charadrius leschenaultii</i> (Greater sand plover) | VU | Y | Y | 0.8 | 47 | N/A |
| <i>Charadrius mongolus</i> (Lesser sand plover) | EN | Y | Y | 1.5 | 35 | N/A |
| <i>Chelonia mydas</i> (Green turtle) | VU | Y | Y | 0.4 | 5 | N/A |
| <i>Limosa lapponica menzbieri</i> (Bar-tailed godwit) | CR | Y | N | 10.2 | 1 | N/A |
| Migratory waterbirds (28 species) | MI | Y | Y | >0.9 | - | N/A |
| <i>Mormopterus cobourgianus</i> (North-western free-tailed bat) | P1 | Y | Y | 0.08 | 7 | N/A |
| <i>Numenius madagascariensis</i> (Eastern curlew) | CR | Y | Y | 1.4 | 42 | N/A |
| <i>Pristis zijsron</i> (Green sawfish) | VU | Y | Y | 19.2 | 1 | N/A |
| <i>Sternula nereis nereis</i> (Fairy tern) | VU | Y | N | 2.1 | 2 | N/A |
| <i>Tringa brevipes</i> (Grey-tailed tattler) | P4 | Y | Y | 0.9 | 66 | N/A |

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

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> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared is a small patch on the edge of an expansive stand of intertidal mangroves, and does not contain locally or regionally significant flora, fauna, habitats ecological communities, or ecological linkages. The proposed clearing area does not comprise a high level of biodiversity.</p> | Not likely to be at variance | No |
| <p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared may contain suitable habitat for a number of conservation significant fauna species (see Appendix A.2). However, given the application area is a small patch on the edge of an expansive stand of intertidal mangroves, it is unlikely that the clearing of 0.0272 hectares of mangrove habitat will result in the loss of significant habitat for these species.</p> | Not likely to be at variance | Yes <i>Refer to Section 3.2.1, above.</i> |
| <p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared consists of 0.0272 hectares of intertidal mangrove habitat and is unlikely to contain or provide significant habitat for any flora species listed under the BC Act.</p> | Not likely to be at variance | No |
| <p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared consists of 0.0272 hectares of intertidal mangrove habitat and is not consistent with any threatened ecological community (TEC) listed under the BC Act. Given the distance and separation from the closest TEC, the proposed clearing is not likely to impact or be necessary for the maintenance of any state-listed TEC.</p> | Not likely to be at variance | No |
| Environmental value: 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 extent of the mapped vegetation types and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (see Appendix A.1). The vegetation proposed to be cleared is part of an expansive tract of intertidal mangrove habitat and is not considered to be part of a significant ecological linkage in the local area.</p> | Not likely to be at variance | No |

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|---|------------------------------|--|
| <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> Given the distance to and separation from the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of adjacent or nearby conservation areas.</p> | Not likely to be at variance | No |
| Environmental value: 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> Given the proposed clearing area occurs within an estuary and includes intertidal mangrove habitat, the vegetation is considered to be growing in an environment associated with a watercourse or wetland.</p> | At variance | Yes <i>Refer to Section 3.2.2, above.</i> |
| <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 mapped soils have a low risk of land degradation resulting from wind or water erosion, salinity, phosphorus export and subsurface acidification, but are mapped as high risk for waterlogging and flooding. Noting the extent of the proposed clearing and that the application area includes intertidal mangrove vegetation that is periodically submerged, the proposed clearing is not considered likely to have an appreciable impact on land degradation.</p> | Not likely to be at variance | No |
| <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> Given the proposed clearing area occurs within an estuary and includes intertidal mangrove habitat that is periodically submerged, the proposed clearing may temporarily impact surface or ground water quality.</p> | Not likely to be at variance | Yes <i>Refer to Section 3.2.2, above.</i> |
| <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> It is noted that the mapped soils are susceptible to flooding and waterlogging. However, noting the extent of the proposed clearing and that the application area includes intertidal mangrove vegetation that is periodically submerged, the clearing of 0.0272 hectares of mangrove vegetation is not considered likely to contribute to increased 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. Biological survey information excerpts

Table 1. Mangrove classifications and their description used to prepare mangrove association maps derived Paling et. al. 2003 (O2 Marine, 2021).

| Code | Classification | Description |
|-------|--|--|
| Am1 | <i>A. marina</i> (Seaward edge) | Typically closed canopy cover and usually big, spreading trees and often with limbs that bend down onto the substrate - this is usually only a few 10's meters wide and backed by <i>Rhizophora</i> (Rs either in a monospecific stand or mixed association with Am) |
| Rs | <i>R. stylosa</i> (Behind Am) | Typically closed canopy and dense, often just 10's of meters wide and may extend as fingers into the landward Am where there are narrow shallow tidal channels. |
| Rs/Am | <i>R. stylosa</i> / <i>A. marina</i> closed canopy mixed | This is usually a transition zone between the Rs monospecific stands and the monospecific stands of the landward edge Am closed canopy. <i>R. stylosa</i> / <i>A. marina</i> (closed canopy, mixed) was allocated where either species contributed approximately between 20% to 80% of the mangrove stand. |
| Am2 | <i>A. marina</i> closed canopy (Landward edge) | Typically the largest area of mangrove association and comprises trees that show a decline in height moving from seaward to landward. |
| Am3 | <i>A. marina</i> scattered. | The point where Am landward edge displays canopy gaps and these gaps eventually become larger in total area than the surrounding Am. Individual scattered mangroves were excluded if tree density was approximately less than five trees per 100 m ² . |



Figure 1. Photographs of the vegetation at Utah Point, clockwise from top left: *Avicennia marina* and *Aegiceras corniculatum* mixed strands (x2), *Rhizophora stylosa* seedlings, *Aegiceras corniculatum* bud, *Avicennia marina* bud, *Avicennia marina* and *Aegiceras corniculatum* mixed strand (O2 Marine, 2021).



Figure 2. Utah Point development habitat mapping (O2 Marine, 2021).

Appendix E. Sources of information

E.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)

- DBCA Statewide Vegetation Statistics
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation (DPIRD-006)
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Rivers (DWER-036)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

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)

E.2. References

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Commonwealth of Australia (2015) *Wildlife Conservation Plan for Migratory Shorebirds*. Canberra, ACT: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/publications/wildlife-conservation-plan-migratory-shorebirds-2016> (accessed March 2021).

Department of Biodiversity, Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. Available from: <http://naturemap.dpaw.wa.gov.au/> (accessed February 2021).

Department of the Environment (DoE) (2015a). *Conservation Advice Calidris ferruginea curlew sandpiper*. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/856-conservation-advice.pdf> (accessed March 2021).

Department of the Environment (DoE) (2015b). *Conservation Advice Numenius madagascariensis eastern curlew*. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/847-conservation-advice.pdf> (accessed March 2021).

Department of the Environment and Energy (DoEE) (2017). *Recovery Plan for Marine Turtles in Australia*. Australian Government, Canberra. Available from: <http://www.environment.gov.au/marine/publications/recovery-plan-marine-turtles-australia-2017> (accessed March 2021).

- Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.
- Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development*. Government of Western Australia. Available from: <https://maps.agric.wa.gov.au/nrm-info/> (accessed February 2021).
- Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) (2011) *Approved Conservation Advice for *Sternula nereis nereis* (Fairy Tern)*. Canberra, ACT: Department of Sustainability, Environment, Water, Population and Communities. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/82950-conservation-advice.pdf> (accessed March 2021).
- Department of Water and Environmental Regulation (DWER) (2019) *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.
- Department of Water and Environmental Regulation (DWER) (2021) *Science and Planning – Contaminated Sites advice for clearing permit application CPS 9149/1*, received 11 February 2021 (DWER Ref: A1980418).
- Environmental Protection Authority (EPA) (2016) *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf.
- Environmental Protection Authority (EPA) (2016) *Technical Guidance – Protection of Benthic Communities and Habitats*. Environmental Protection Authority, Western Australia.
- Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. Available from: <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Higgins, P.J. and Davies, S.J.J.F. eds (1996) *Handbook of Australian, New Zealand and Antarctic Birds. Volume Three - Snipe to Pigeons*. Melbourne, Victoria: Oxford University Press.
- Mattiske, E.M. and Havel, J.J. (1998) *Vegetation Complexes of the South-west Forest Region of Western Australia*. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- O2 Marine (2021) *Utah Point Mangrove Health Assessment*. Prepared for Pilbara Ports Authority. (DWER Ref: A1978387).
- Pilbara Ports Authority (2020) *Clearing permit application CPS 9149/1*, received 14 December 2020 (DWER Ref: DWERDT391302).
- Reardon, T.B., McKenzie, N.L., Cooper, J.B., Appleton, B., Carthew, S., Adams, M. (2014) *A molecular and morphological investigation of species boundaries and phylogenetic relationships in Australian free-tailed bats *Mormopterus* (Chiroptera: Molossidae)*. Australian Journal of Zoology, **62**, pp. 102-136.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Threatened Species Scientific Committee (TSSC) (2008). *Listing Advice for *Pristis zijsron* (Green Sawfish)*. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/68442-listing-advice.pdf> (accessed March 2021).
- Threatened Species Scientific Committee (TSSC) (2016a). *Conservation Advice *Calidris canutus* Red knot*. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/855-conservation-advice-05052016.pdf> (accessed March 2021).

Threatened Species Scientific Committee (TSSC) (2016b). *Conservation Advice Calidris tenuirostris Great knot*. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/862-conservation-advice-05052016.pdf> (accessed March 2021).

Threatened Species Scientific Committee (TSSC) (2016c). *Conservation Advice Charadrius leschenaultii Greater sand plover*. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/877-conservation-advice-05052016.pdf> (accessed March 2021).

Threatened Species Scientific Committee (2016d). *Conservation Advice Charadrius mongolus Lesser sand plover*. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/879-conservation-advice-05052016.pdf> (accessed March 2021).

Threatened Species Scientific Committee (2016e). *Conservation Advice Limosa lapponica menzbieri Bar-tailed godwit (northern Siberian)*. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/86432-conservation-advice-05052016.pdf> (accessed March 2021).

Town of Port Hedland (2020) *Advice for clearing permit application CPS 9149/1*, received 17 February 2021 (DWER Ref: A1981982).

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.

Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. Available from: <https://florabase.dpaw.wa.gov.au/> (Accessed February 2021).