Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10412/1,
Permit type:	Area permit
Applicant name:	Shire of Broome
Application received:	13 November 2023
Application area:	15.70 hectares of native vegetation
Purpose of clearing:	Construction of a caravan park and associated infrastructure
Method of clearing:	Mechanical
Property:	Lot 3130 on Deposited Plan 32082 (Crown Reserve 51028) Sanctuary Road reserve (PIN 11478832) Oryx Road and portion of un-made road reserves (PIN 11478830) Fairway Drive and portion of un-made road reserves (PIN 11478829)
Location (LGA area/s):	Shire of Broome
Localities (suburb/s):	Cable Beach Bilingurr

1.2. Description of clearing activities

The Shire of Broome is proposing to clear 15.70 hectares of native vegetation distributed across ten separate areas in close proximity in the extensive land use zone of Western Australia. The application is on Lot 3130 on Deposited Plan 32082 (Crown Reserve 51028), Sanctuary Road (PIN 11478832), Oryx Road and a portion of un-made road (PIN 11478830), and Fairway Drive and portion of un-made road (PIN 11478829), Cable Beach and Bilingurr (see Figure 1, Section 1.5). The proposed clearing will facilitate the construction of a caravan park and associated infrastructure.

1.3. Decision on application

Decision:	Granted
Decision date:	26 March 2024
Decision area:	15.70 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 21 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 biological assessment (360 Environmental, 2023b), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), and 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 works will help in addressing the current accommodation crisis within the Shire of Broome and help support projected population growth (360 Environmental, 2023a).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- potential impacts to fauna that may be present at the time of clearing; and
- land degradation in the form of wind or water erosion.

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 is unlikely to lead to appreciable land degradation or have long-term adverse impacts on conservation significant fauna species and can be minimised and managed to unlikely lead to an unacceptable risk to environmental values. The applicant has suitably demonstrated avoidance and minimisation measures.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- Avoid, minimise to 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.
- Limit the clearing to activities during daylight
- Pre-clearance surveys for the Greater Bilby.

1.5. Site maps

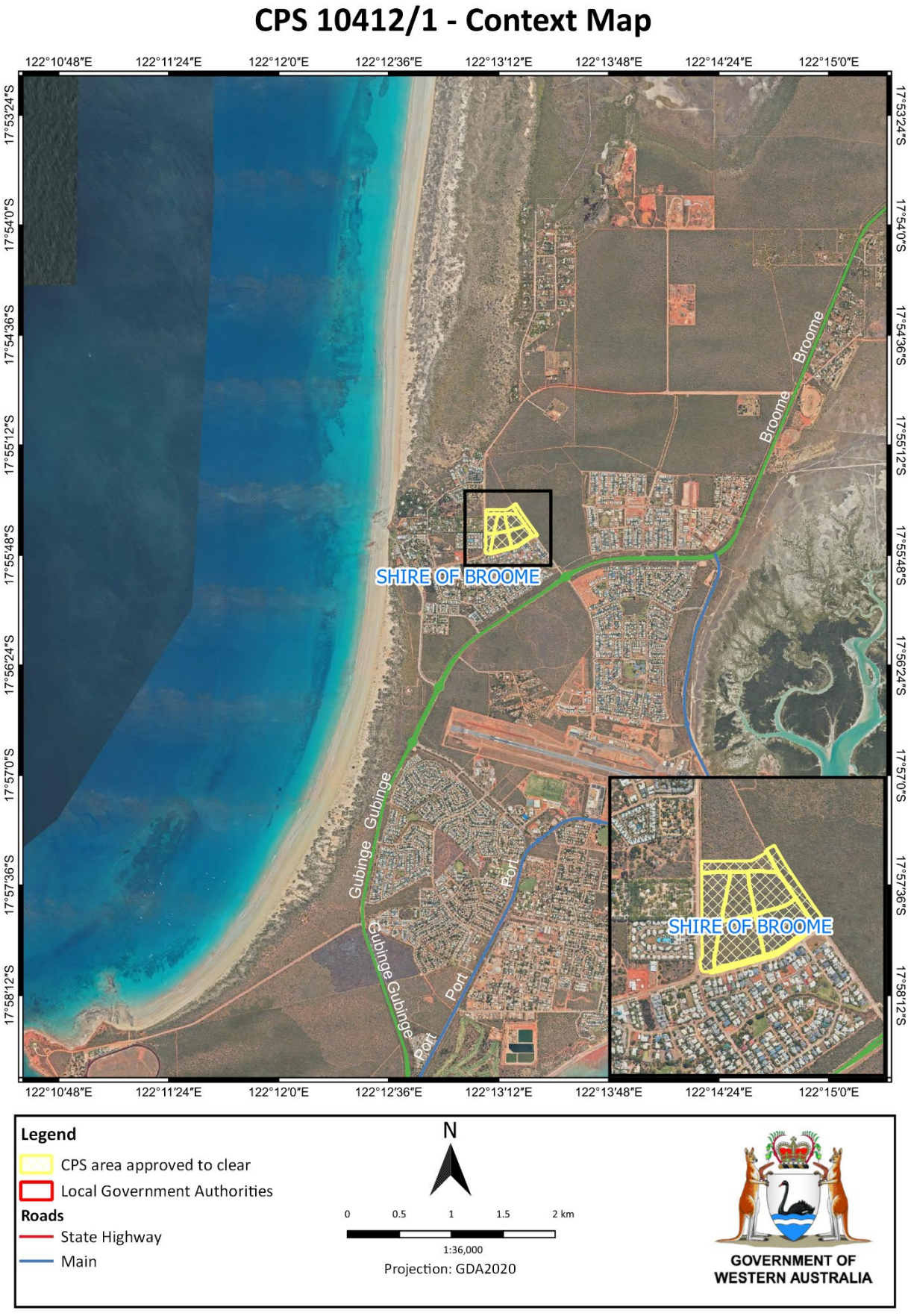

Figure 1: Context map of the application area the area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

CPS 10412/1 - Map

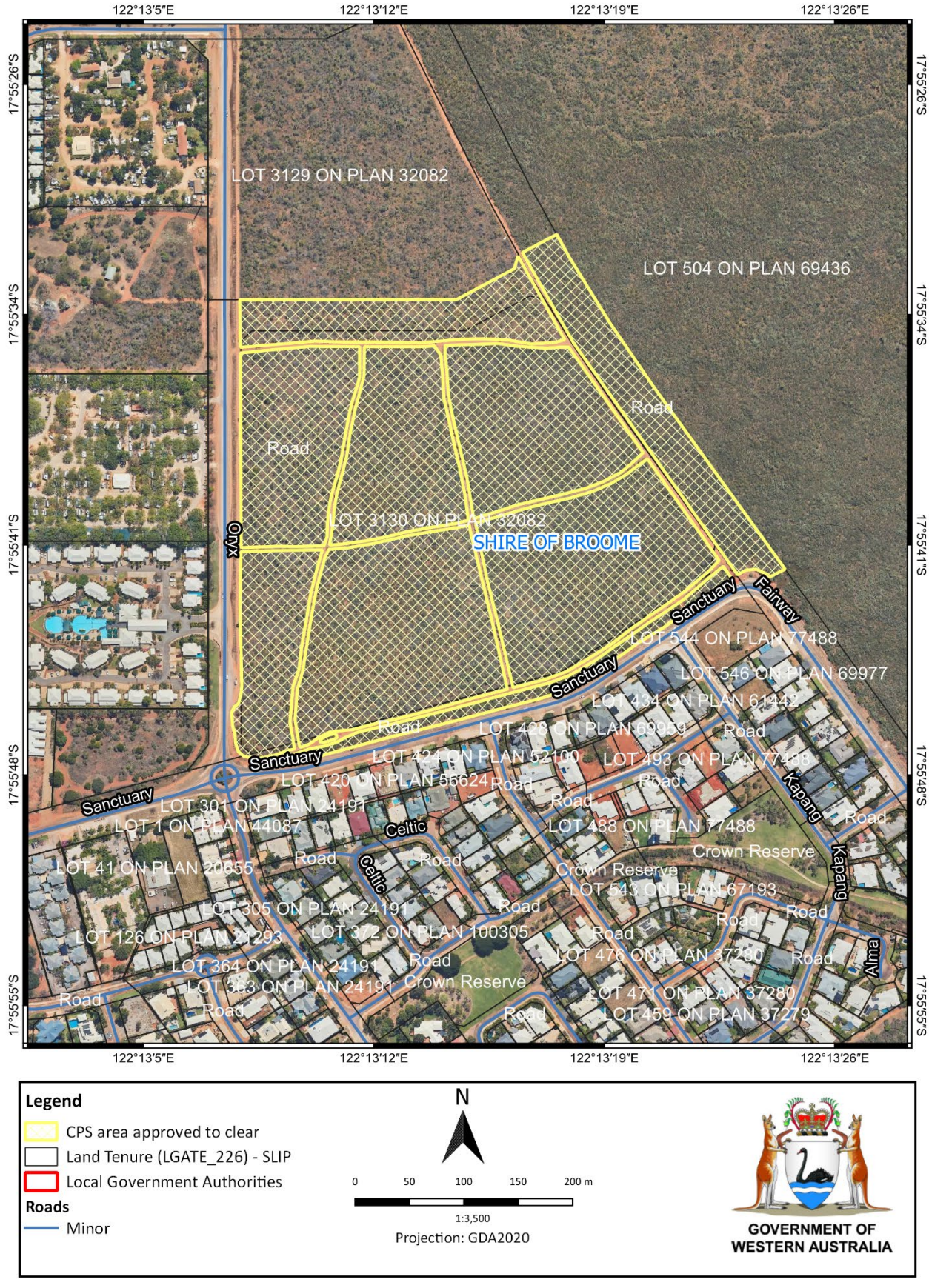

Figure 2: Map of the application area the area crosshatched yellow indicates the area authorised to be cleared under the granted clearing permit.

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)
- *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* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Project background

The proposed clearing is intended to facilitate the development of the Sanctuary Road caravan park, key worker and over 55s village project, which is one of the Shire of Broome's highest priority projects. The aim of this project is to address the current accommodation crisis within Broome and support the growing population in the area. Based on current population projections by the government, Broome's population is set to grow by an additional 1,740 persons by 2031, reaching a total of 18,730. The project is also expected to become a major contributor to the economy of the Kimberley region bringing in approximately 140 full time jobs (360 Environmental, 2023a).

Avoidance and minimisation

The Shire of Broome (2023) has advised that the location of the proposed Sanctuary Road caravan park was determined to be the optimum location for clearing as it had relatively low environmental values:

- No Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) were recorded within the application area,
- No Threatened or Priority flora species were recorded within the application area,
- No priority or threatened fauna species were found within the application area,
- The acacia shrubland fauna habitats are typical of the Dampierland bioregion,
- No significant fauna species were recorded within the application area.

Furthermore, the clearing area has been minimised as far as possible to still allow an appropriately sized development while retaining vegetation.

Management measures

To minimise the risk of impact from the activities associated with the application, the following environmental management measures have been committed to by the Shire of Broome (360 Environmental, 2023a).

- induction of all contractors and/or internal personnel understating the clearing in accordance with the Shire of Broome procedures,
- GPS coordinates of the clearing Area to be supplied to contractors undertaking the clearing activities,
- prior to clearing and earthworks commencing within the clearing area, the area will be clearly demarcated (by barrier tape or star pickets) to ensure that no over clearing occurs beyond the permitted area,
- vegetation clearing works to minimise the potential for dust, where practicable. The use of a water cart or other means of wetting will be made available,

- a pre-clearing fauna inspection will be performed prior to the clearing for possible nests, and fauna relocation for species that are slow-moving by a licensed fauna handler or a zoologist, if deemed necessary,
- fauna spotter will be on site during clearing to relocate fauna to minimise potential risk of injury or death to fauna,
- clearing and earthworks will be conducted in a one-way movement in a slow manner towards surrounding vegetation to direct fauna and minimised potential risk of injury or death to fauna,
- the Shire of Broome will undertake an activity notice with Traditional Owners prior to clearing, and
- disposal/refuse of excavated vegetation to be used as mulch by the Shire of Broome where appropriate.

Conclusion

After consideration of the avoidance and mitigation measures and the management measures provided, it was determined 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 (biodiversity and fauna) and land and water resources (appreciable land degradation and incidence or intensity of flooding). 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 (biodiversity and fauna) - Clearing Principles (a) and (b)

Assessment

The Sanctuary Road biological assessment (360 Environmental, 2023b) identified one fauna habitat type within the application area including:

- *Acacia shrubland* (Pindan Vegetation) *Corymbia greeniana*, *Bauhinia cunninghamii*, *Brachychiton diversifolius* subsp. *diversifolius* low isolated to sparse trees over *Acacia eriopoda* tall open shrubland over *Sorghum* sp. mid sparse to open tussock grassland and *Triodia schinzii* mid sparse to open hummock grassland. In some areas vegetation condition was impacted by tracks and weeds. Peeling bark, spinifex hummocks, and woody debris provide shelter for small reptiles and mammals. Isolated trees provide shelter and foraging habitat for birds.

According to available databases, 90 conservation significant fauna species have been recorded within the local area (50-kilometre radius), comprising of three Priority 1, two Priority 2, one Priority 3, seven Priority 4, five Endangered, eight Vulnerable, five critically endangered, 58 migratory, and one specially protected species (OS) fauna taxa. Noting the findings of the Sanctuary Road biological assessment (360 Environmental, 2023b), the site characteristics (see Appendix B), and the habitat preferences of the conservation significant fauna species recorded within the local area (See Appendix B.4), eight species were considered as having the potential to occur within the application area.

Avian species

The three avian species with the potential to occur within the application area (*Apus pacificus* - Migratory, *Falco hypoleucos* - Vulnerable, and *Falco peregrinus* – Specially protected species) have wide home ranges across Australia, inhabiting coastal, sub coastal, arid, semi-arid and rainforest environments, mainly distributed around water-associated habitats (DCCEEW, 2015; TSSC, 2020; and DAWE, 2021). The species' do not rely on specialist niche habitats. As such, the application area is unlikely to represent a significant habitat for the three avian species. The application area is more likely to provide occasional transitory hunting habitat, which is abundant adjacent to the application area. Furthermore, the surrounding environment retains approximately 98.60 per cent of vegetation likely used by these bird species. Thus, any proposed clearing is unlikely to impact any significant habitat for conservation significant avian species.

Spectacled hare-wallaby

The Spectacled hare-wallaby (*Lagorchestes conspicillatus leichardti* – Priority 4) is a small nocturnal wallaby found across northern Australia with a subspecies on Barrow Island, where they are more densely populated (DEWHA,

2008). The Spectacled hare-wallaby is known to inhabit tropical tussock or spinifex habitats, forests, woodlands, and shrublands, preferring areas with a mosaic of vegetation due to differences in fire history (DEWHA, 2008). The species is herbivorous, foraging on herbs, grasses, and fruit (DEWHA, 2008). The closest known record of the Spectacled hare-wallaby is approximately 37.06 kilometres from the application area, and there are 40 known records mapped within the local area. Considering the abundant habitat within and surrounding the application area and the distance of the closest record from the application area, the proposed clearing is unlikely to negatively impact the spectacled hare-wallaby. However, wallaby individuals may transiently occur on-site given the suitable habitat. It is recommended that clearing activities are conducted slowly, in one direction and limited to daylight hours.

Bilby

The Greater bilby (*Macrotis lagotis* - Vulnerable) is a medium-sized omnivorous burrowing marsupial occupying three major habitats, including open tussock grassland on uplands and hills, mulga woodland or shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas (TSSC, 2016). The species is known to shelter in burrows during daylight and utilises up to 18 burrows in a several month period. Greater bilbies are also known to construct a new burrow on average every 2.5 weeks (TSSC, 2016). The Greater bilby is known from 282 records within the local area, the closest of which is approximately 0.21 kilometres from the application area. The mixed shrubland within the application area may provide suitable habitat for the Greater bilby. During 360 Environmental's biological assessment (360 Environmental, 2023b), no evidence of Greater bilby tracks, scats, nests, diggings, burrows, or direct sightings were recorded within or directly surrounding the Survey Area. 360 Environmental, however, stated that the Greater bilby may use the habitat for foraging and shelter. Greater bilby individuals may transiently occur on-site, given the closest known record, the high mobility of the species and the proximity of adjacent suitable habitats around the application area (360 Environmental, 2023b). Based on the above assessment, the application area is unlikely to represent a significant habitat for Greater bilby. To prevent direct impacts to individuals within the application area during the time of the proposed works, it is recommended that pre-clearing surveys should be conducted a week before the proposed clearing to identify the occurrence of any burrows that the Greater bilby may use. Additionally, clearing activities should be conducted slowly, in one direction, and limited to daylight hours as the Greater bilby is known to be nocturnal.

Northern Free-tailed bat

The Northern free-tailed bat (NFTB) (*Ozimops cobourgianus* – Priority 1) is found across Northern Australia. In Western Australia, they are predominantly distributed across coastal mangrove fringes, with the species known to roost within the hollows of *Avicennia marina* (White Mangrove) (Reardon et al., 2017; 360 Environmental, 2023a). The NFTB is an insectivore and mainly forages in *Eucalyptus* or *Melaleuca* woodlands and other coastal habitats (Reardon et al., 2017). The species is known from 2 records within the local area, the closest of which is approximately 1.42 kilometres from the proposed clearing area. During 360 Environmental's biological assessment (360 Environmental, 2023b), no signs of the species were found. Based on the field assessment and abundant surrounding habitat, the proposed clearing is unlikely to significantly impact the NFTB. However, individuals of the species may be found transiently within the application area while foraging. It is recommended that clearing activities are conducted slowly, in one direction to minimise the risk of direct impacts to individuals.

Northern brushtail possum

The Northern brushtail possum (*Trichosurus vulpecula arnhemensis* - Vulnerable) is a nocturnal semi-arboreal marsupial and considered as a subspecies of the species of *T. arnhemensis* (TSSC, 2021). Most of this species' current population have been recorded in the Northern Territory, with limited records in Kimberley region of Western Australia. The Northern brushtail possum is mainly associated with tall *Eucalyptus* open forests and sometimes with mangrove communities where these contains hollow-bearing trees (TSSC, 2021). Eleven records of the Northern brushtail possum are mapped within the local area, with the closest record being approximately 1.08 kilometres from the proposed clearing area. 360 Environmental noted that the *Acacia* shrubland would provide suitable habitat for the species. However, the species is unlikely to be dependant on the vegetation within the application area due to the scarcity of hollows within the proposed clearing area (360 Environmental, 2023b). No evidence of Northern brushtail possum tracks, scats, hollows, or direct sightings were recorded within or directly surrounding the survey area (360 Environmental, 2023b). Possum individuals may occur on-site during the proposed clearing activities, given the closest record and the proximity of adjacent suitable habitats around the application area. It is recommended that clearing activities be conducted slowly, in one direction and limited to daylight hours.

Airlie Island Ctenotus

The Airlie Island ctenotus (*Ctenotus angusticeps* - P3) belongs to the *Scincidae* family (skink), which is primarily found in coastal areas of Western Australia. It has a dense population on Airlie Island and a scattered population on the northwest coastline of mainland Western Australia (TSSC, 2019). This species is highly restricted to specific habitats, primarily salt marsh communities adjacent to mangroves. The species is known to inhabit crab holes to shelter at night, with records showing that the species has always been found in environments with crab holes (TSSC, 2019). There have been 32 records found within the local area, with the closest known record of the species 3.73 kilometres from the proposed clearing area. Based on the above assessment, the proposed clearing is unlikely to negatively impact the Arilie Island ctenotus due to the distance of the closest record to the application area and the lack of suitable salt marsh habitat.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to have impacts on significant habitat for any conservation listed fauna species due to abundant fauna habitat surrounding the application area and given that the application area is already impacted by cleared tracks. However, the proposed clearing may result in fauna fatalities should they occur within the application during the clearing. The implementation of minimisation and avoidance measures (Section 3.1) will help minimise the risk of impacts from clearing activities. To minimise impacts to adjacent suitable habitat, weed management will reduce the risk of the spread of weeds and degradation of adjacent areas.

Conducting the clearing in a slow progressing manner from one direction towards the adjacent vegetation will allow any fauna present to move into the adjacent native vegetation ahead of the clearing activity. Restricting the proposed clearing to daylight hours will further avoid potential injuries to fauna as well as undertaking a targeted pre-clearing fauna survey.

Conditions

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

- Undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.
- Pre-clearing fauna inspection will be performed prior to the clearing for possible nests, and fauna relocation for species that are slow-moving by a licensed fauna handler or a zoologist, if deemed necessary.
- Clearing to be conducted during daylight hours.
- Take hygiene steps to minimise the risk of the introduction and spread of weeds.

3.2.2. Land and water resources (land degradation) - Clearing Principles (g) (j)

Assessment

According to available databases, the application area is located within the Yeeda soil system, which is characterised by red sandplains supporting pindan vegetation with dense acacia shrubs, scattered bloodwood and grey box trees and curly spinifex and ribbon grass. The Yeeda soils are mapped as being susceptible to wind and water erosion, export, a moderate risk of salinity, and waterlogging/flooding. The proposed clearing may cause risks to land degradation if soils are exposed for extended periods post-clearing.

Given the mitigation measures proposed by the Shire (see Section 3.1) and the purpose of the clearing is to construct a caravan park and associated infrastructure, the land degradation risks by the proposed clearing are likely to be short-term and minimal, with the land degradation risks of the area being able to be mitigated by undertaking the proposed works no later than three months after the clearing.

The Kimberly climate is affected by tropical cyclones and tropical storms and can bring heavy inundations of rainfall in the months leading up to and during the wet season (1st November – 30th April). Cyclones often exacerbate wind water erosion and water logging/flooring of soils (BoM, 2023). It is recommended that clearing be undertaken after the wet season to minimise the potential effects.

Conclusion

For the reasons set out above, it is considered that the impacts of the proposed clearing on wind and water erosion, phosphorous export, salinity, water logging/flooding are likely to be short-term, minimal and can be managed by minimising the time between clearing and post-clearing activities.

Conditions

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

- The permit holder must commence construction activities no later than three (3) months after undertaking the authorised clearing activities.

3.3. Relevant planning instruments and other matters

The proposed clearing is intended to facilitate the development of the Sanctuary Road caravan park, key worker and over 55s village project, which is one of the Shire of Broome's highest priority projects. The aim of this project is to address the current accommodation crisis within Broome and support the growing population in the area. Based on current population projections by the government, Broome's population is set to grow by an additional 1,740 persons by 2031, reaching a total of 18,730. The project is also expected to become a major contributor to the economy of the Kimberley region bringing in approximately 140 full time jobs.

The proposed clearing is a small area of the broader Shire of Broome Northern District Development Plan that involves a masterplan development of 700 Hectares within Broome. The Sanctuary Road caravan park, key workers' housing, and over-55s village project, although related to the Northern District Development Plan, is a separate and independent project that can proceed with its development even if the district development plan does not go ahead (360 Environmental, 2023a).

The Shire of Broome are in contact with the Department of Planning, Lands and Heritage (DPLH) to secure a long-term management order for the site. The Management order currently prescribes power to lease for a term not exceeding 50 years (vesting since February 2011).

The Shire of Broome has consulted with the Department of Biodiversity, Conservation and Attractions (DBCA) describing the project and the reason for applying for a clearing permit. The DBCA informed that they have previously looked at the larger Broome North District Development Plan and would again through the clearing permit application (360 Environmental, 2023a).

The Shire of Broome has consulted with Nyama Buru Yawuru, describing the project and the reason for applying for a clearing permit. Nyama Buru Yawuru deemed no obvious issues with the development but would review through the clearing permit process. The Shire of Broome has attempted to get in contact with Nyama Buru Yawuru since applying for a clearing permit. However, they have not received a follow-up response (360 Environmental, 2023a).

Several Aboriginal sites of significance have been 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

A.1. 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 the department 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.

<table>
<tr><th>Characteristic</th><th>Details</th></tr>
<tr><td>Local context</td><td>The area proposed to be cleared is multiple patches of native vegetation in the extensive land use zone of Western Australia. It is surrounded by Cable Beach and Road reserves.

Spatial data indicates the local area (50-kilometre radius from the centre of the area proposed to be cleared) retains approximately 98.60 per cent of the original native vegetation cover.</td></tr>
<tr><td>Ecological linkage</td><td>The application area is not within any mapped linkages and is unlikely to be a part of any local ecological linkages.</td></tr>
<tr><td>Conservation areas</td><td>The application area does not lie within any reserve areas. However, there are approximately 37 conservation areas within a 10-kilometre radius of the application area, with the majority being aboriginal conservation areas (24).

The following are the closest conservation areas to the application area:
<table>
<tr><th>Conservation area type</th><th>Conservation object name/ID</th><th>Distance from application area (km)</th><th>Direction from application area</th></tr>
<tr><td>Care And Rehabilitation of Wildlife</td><td>Broome Wildlife Centre (R 47964)</td><td>1.29</td><td>North</td></tr>
<tr><td rowspan="6">Conservation, Recreation and Traditional and Customary Aboriginal Use and Enjoyment</td><td>Yawuru Nagulagun / Roebuck Bay Marine Park (M 17)</td><td>1.96</td><td>East</td></tr>
<tr><td>Yawuru Native Title Holders (R 51497)</td><td>2.9</td><td>Northeast</td></tr>
<tr><td>Yawuru Native Title Holders (R 52354)</td><td>3.05</td><td>North</td></tr>
<tr><td>Yawuru Native Title Holders (R 51497)</td><td>3.06</td><td>North</td></tr>
<tr><td>Yawuru Native Title Holders (R 51162)</td><td>3.18</td><td>East</td></tr>
<tr><td>Yawuru Native Title Holders (R 52354)</td><td>3.78</td><td>Northwest</td></tr>
<tr><td>Offices Nursery Education and Temporary Camping Ground</td><td>Conservation Commission Of WA WPL (R 1644)</td><td>4.71</td><td>South</td></tr>
</table></td></tr>
<tr><td>Vegetation description</td><td>Site photographs and a vegetation survey supplied by the applicant (360 Environmental, 2023) indicate the vegetation within the proposed clearing area consists of four different vegetation types across the application area. Representative photos and maps are available in Appendix D.

Vegetation types and the corresponding hectare amounts within the proposed clearing area:</td></tr>
</table>

<table>
<tr><th>Characteristic</th><th>Details</th></tr>
<tr><td></td><td>
<table>
<tr><th>Vegetation type name</th><th>Description of vegetation type</th><th>Hectares</th></tr>
<tr><td>BdTm</td><td>Brachychiton diversifolius subsp. diversifolius, Corymbia greeniana low open woodland over (Acacia colei var. colei), Acacia plectocarpa subsp. plectocarpa, Persoonia falcata shrubland over hummock grassland Triodia microstachya.</td><td>8.92</td></tr>
<tr><td>BdGbTm</td><td>Brachychiton diversifolius subsp. diversifolius, Corymbia greeniana low open woodland over Grewia breviflora, Acacia colei var. colei closed shrubland over Corchorussidoides subsp. sidoides perennial herbland and Triodia microstachya humock grassland.</td><td>4.85</td></tr>
<tr><td>ApTm</td><td>Acacia plectocarpa subsp. plectocarpa isolated trees over Lysiphyllum cunninghamii low open woodland over Grewia breviflora and (Persoonia falcata) shrubland over Triodia microstachya open hummock grassland.</td><td>0.54</td></tr>
<tr><td>AcCp</td><td>Acacia colei var. colei mid closed shrubland over Acacia adoxa var. subglabra low open shrubland over Chrysopogon pallidus open tussock grassland.</td><td>1.39</td></tr>
<tr><td>Cleared</td><td>cleared areas of tracks running through the application area.</td><td>2.21</td></tr>
<tr><td colspan="2">Total</td><td>15.7</td></tr>
</table>

The mapped vegetation type retains approximately 99.68 per cent of the original extent (Government of Western Australia, 2019).
</td></tr>
<tr><td>Vegetation condition</td><td>The vegetation survey provided (360 Environmental, 2023), indicates the native vegetation within the proposed clearing area is in a Good to Very Good (Trudgen, 1991) condition. The full Trudgen condition rating scale is provided in Appendix C. Representative photos and mapping are available in Appendix D.</td></tr>
<tr><td>Climate and landform</td><td>The climate experienced in the application is a tropical climate and is characterised by hot wet summers (December to March) and a dry season (April to November) (Bureau of Meteorology, 2023). Rainfall is generally received during the summer via unpredictable tropical downpours and cyclotomic low pressure systems. An average of 747.0 millimetres of rainfall is recorded annually from the Broome Airport (Station No. 003003), which is the closest weather station, located approximately 2.5 kilometres from the application area. Tropical cyclones can occur during the wet season months (Bureau of Meteorology, 2023).

The mapped topographical contours of the application area indicate that the elevation is steady, ranging from 20 meters Isohyet to 23 meters Isohyet.</td></tr>
<tr><td>Soil description</td><td>The soil across the application area is mapped as:
<table>
<tr><td>Name</td><td>The Yeeda System</td></tr>
<tr><td>Soils</td><td>335Ye</td></tr>
<tr><td>Description</td><td>Red sandplains supporting pindan vegetation with dense acacia shrubs, scattered bloodwood and grey box trees and curly spinifex and ribbon grass.</td></tr>
</table>
</td></tr>
<tr><td>Land degradation risk</td><td>The degradation risk factors of the soil across the application area are not mapped, however, clearing permit CPS 10156/1, which is approximately 748 meters from the application area has the same mapped soil type as the application area. Advice received from the Commissioner of Soil and Land Conservation (CSLC, 2023), on CPS 10156/1 has classified the soil type application area as susceptible to wind erosion, water erosion and waterlogging, Nutrient export, and a minimal salinity risk. The salinity of the application area is mapped at <500 total dissolved solids milligrams per litre.</td></tr>
<tr><td>Waterbodies</td><td>The desktop assessment and aerial imagery indicated that the following waterbodies are the closest to the application area:
<table>
<tr><th>Name of wetland and watercourse.</th><th>Name/ID</th><th>Approximate Distance from application area (km)</th><th>Direction from application area</th></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Characteristic</th><th>Details</th></tr>
<tr><td></td><td>
<table>
<tr><td>Dampierland (conservation)</td><td>Roebuck Bay</td><td>1.83</td><td>East</td></tr>
<tr><td>Ramsar site</td><td>Roebuck Bay (16)</td><td>9.90</td><td>Southeast</td></tr>
<tr><td>Ocean</td><td>Indian Ocean</td><td>1.10</td><td>West</td></tr>
</table>
</td></tr>
<tr><td>Hydrogeography</td><td>
<table>
<tr><td>Hydrological Zone</td><td>Timor sea</td></tr>
<tr><td>Basin</td><td>Cape Leveque coast (801)</td></tr>
<tr><td>Hydrographic Catchment</td><td>Cape Leveque Coast Basin</td></tr>
</table>
<table>
<tr><td>RIWI Act Surface Water and Irrigation District</td><td>No</td><td></td></tr>
<tr><td>RIWI Act Rivers</td><td>No</td><td></td></tr>
<tr><td>RIWI Act Groundwater Areas</td><td>Yes</td><td>Broome Object ID 39</td></tr>
<tr><td>CAWS Act Clearing Control Catchment</td><td>No</td><td></td></tr>
<tr><td>Public Drinking Water Source Areas</td><td>No</td><td></td></tr>
<tr><td>Wellhead Protection Zone</td><td>No</td><td></td></tr>
<tr><td>Reservoir Protection Zone</td><td>No</td><td></td></tr>
</table>
</td></tr>
<tr><td>Flora</td><td>According to available database, 18 conservation significant flora species have been recorded within the local area (50-kilometre buffer). Comprising four Priority 1, one Priority 2, 12 Priority 3, and one Priority 4. Of the 18 conservation species, six species were found to have a similar vegetation type, habitat features, and soil type of the application area (see C.3 Flora analysis table).

According to 360 Environmental (2023), there were no priority or threatened flora species identified during the environmental survey of the area, comprising a total of approximately 17.92 hectares. Clearing is unlikely to negatively impact conservation significant flora species.</td></tr>
<tr><td>Ecological communities</td><td>According to available databases, 11 Commonwealth-listed PECs and two Commonwealth listed TEC’s occur within the 50km radius of the application area. None of these records occur over the application area. The closest ecological community is a PEC (Corymbia paractia dominated community on dunes) located approximately 0.39 kilometres from the application area.

According to the 360 Environmental (2023) environmental survey, no TECs or PECs were found within the application area. The clearing is unlikely to impact any TECs or PECs surrounding the application area negatively.</td></tr>
<tr><td>Fauna</td><td>According to available database, 90 conservation significant fauna species have been recorded within the local area comprising of three Priority 1, two Priority 2, one Priority 3, seven Priority 4, five Endangered, eight Vulnerable, five critically endangered, 58 migratory, and one specially protected species (OS) fauna taxa.

Of the 75 avian species, the majority are migratory species inhabiting coastal environments and water associated habitats and are unlikely to utilise the application area outside of transitional habitat and is not considered significant habitat.

Of the 15 non avian species, the closest recorded fauna species is Macrotis lagotis (bilby) approximately 0.21 kilometres from the application area.

Noting the habitat requirements, the distribution of the recorded species, the mapped vegetation types, fauna survey (360 Environmental, 2023), and the condition of the</td></tr>
</table>

Characteristic	Details
	vegetation within the application area. The application area is likely to comprise suitable habitat for the following fauna species: • *Apus pacificus* (Pacific Swifts) • *Falco hypoleucos* (grey falcon) • *Falco peregrinus* (peregrine falcon) • *Lagorchestes conspicillatus leichardti* (spectacled hare-wallaby (mainland)) • *Macrotis lagotis* (bilby) • *Ozimops cobourgianus* (northern coastal free-tailed bat) • *Trichosurus vulpecula arnhemensis* (northern brushtail possum (Kimberley)) • *Ctenotus angusticeps* (Airlie Island Ctenotus).

A.2. 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*					
Dampierland	8,343,944.95	8,319,879.14	99.71	142,055.31	1.70
Vegetation complex					
Dampierland_750	1,229,182.16	1,225,280.52	99.68	34,114.53	2.78
Local area					
50km radius	400,236.40	394,646.58	98.60	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3. Flora analysis table

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

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Acacia monticola x tumida var. kulparn	P3	Y	Y	Y	3.62	11	N
Aphyllodium glossocarpum	P3	Y	Y	N	3.48	2	N
Aphyllodium parvifolium	P1	N	N	N	28.71	1	Y
Bonamia oblongifolia	P3	Y	Y	Y	41.73	3	Y
Corymbia paractia	P1	N	Y	Y	0.69	27	Y
Glycine pindanica	P3	Y	Y	Y	0.61	20	Y
Gomphrena pusilla	P2	Y	Y	N	1.86	11	Y
Goodenia byrnesii	P3	Y	Y	Y	4.66	2	Y
Jacquemontia sp. Broome (A.A. Mitchell 3028)	P1	Y	Y	Y	1.77	8	Y

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Lophostemon grandiflorus subsp. grandiflorus	P3	N	N	N	40.36	4	Y
Paranotis halfordii	P3	N	N	N	28.9	1	N
Pittosporum timorense	P4	N	Y	N	43.06	11	N
Polymeria sp. Broome (K.F. Kenneally 9759)	P3	Y	Y	Y	4.32	4	N
Stylidium pindanicum	P3	N	N	N	16.61	3	N
Tephrosia andrewii	P3	N	N	Y	48.83	1	Y
Tephrosia valleculata	P3	N	N	N	40.74	1	N
Terminalia kumpaja	P3	Y	Y	Y	1.18	7	Y
Thespidium basiflorum	P1	N	N	N	8.35	4	N

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

A.4. Fauna analysis table

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 (total)	Are surveys adequate to identify? [Y, N, N/A]
Birds						
Actitis hypoleucos (common sandpiper)	MI	N	N	1.68	568	Y
Anous stolidus (common noddy)	MI	N	N	2.76	16	Y
Apus pacificus (fork-tailed swift)	MI	Y	Y	0.63	98	Y
Ardenna pacifica (wedge-tailed shearwater)	MI	N	N	2.76	4	Y
Ardenna tenuirostris (short-tailed shearwater)	MI	N	N	1.40	1	Y
Arenaria interpres (ruddy turnstone)	MI	N	N	0.75	739	Y
Bulweria bulwerii (Bulwer's petrel)	MI	N	N	0.81	1	Y
Calidris acuminata (sharp-tailed sandpiper)	MI	Y	N	0.75	311	Y
Calidris alba (sanderling)	MI	N	N	0.22	117	Y
Calidris canutus (red knot)	EN	N	N	1.68	643	Y
Calidris ferruginea (curlew sandpiper)	CR	N	N	2.11	661	Y
Calidris melanotos (pectoral sandpiper)	MI	N	N	4.34	8	Y
Calidris ruficollis (red-necked stint)	MI	N	N	0.81	752	Y
Calidris subminuta (long-toed stint)	MI	N	N	2.11	74	Y
Calidris tenuirostris (great knot)	CR	N	N	0.75	804	Y
Calonectris leucomelas (streaked shearwater)	MI	N	N	0.81	7	Y
Cecropis daurica (red-rumped swallow)	MI	N	N	12.63	11	Y
Charadrius dubius (little ringed plover)	MI	N	N	3.11	11	Y
Charadrius leschenaultii (greater sand plover)	VU	N	N	0.75	692	Y
Charadrius mongolus (lesser sand plover)	EN	N	N	0.75	367	Y
Charadrius veredus (oriental plover)	MI	N	N	2.11	120	Y

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 (total)	Are surveys adequate to identify? [Y, N, N/A]
Chlidonias leucopterus (white-winged black tern)	MI	N	N	0.75	213	Y
Chloebia gouldiae (Gouldian finch)	P4	N	N	3.92	2	Y
Cuculus optatus (oriental cuckoo)	MI	Y	Y	3.92	12	Y
Elanus scriptus (letter-winged kite)	P4	N	N	3.92	3	Y
Erythrotriorchis radiatus (red goshawk)	VU	N	N	26.08	1	Y
Falco hypoleucos (grey falcon)	VU	Y	Y	2.37	6	Y
Falco peregrinus (peregrine falcon)	OS	Y	Y	1.87	33	Y
Fregata ariel (lesser frigatebird)	MI	N	N	0.03	140	Y
Fregata minor (great frigatebird)	MI	N	N	3.92	2	Y
Gallinago megala (Swinhoe's snipe)	MI	N	N	2.32	9	Y
Gallinago stenura (pin-tailed snipe)	MI	N	N	2.32	3	Y
Gelochelidon nilotica (gull-billed tern)	MI	N	N	1.87	325	Y
Glareola maldivarum (oriental pratincole)	MI	N	N	1.58	101	Y
Hirundapus caudacutus (white-throated needletail)	MI	N	N	12.95	1	Y
Hirundo rustica (barn swallow)	MI	N	N	0.20	174	Y
Hydroprogne caspia (Caspian tern)	MI	N	N	1.87	545	Y
Ixobrychus dubius (Australian little bittern)	P4	N	N	3.13	3	Y
Limicola falcinellus (broad-billed sandpiper)	MI	N	N	2.88	218	Y
Limnodromus semipalmatus (Asian dowitcher)	MI	Y	N	2.88	221	Y
Limosa lapponica (bar-tailed godwit)	MI	N	N	1.87	863	Y
Limosa lapponica menzbieri (bar-tailed godwit (northern Siberian))	CR	N	N	2.76	12	Y
Limosa limosa (black-tailed godwit)	MI	N	N	2.11	505	Y
Macronectes halli (northern giant petrel)	MI	N	N	10.43	1	Y
Motacilla cinerea (grey wagtail)	MI	N	N	13.16	2	Y
Motacilla flava (yellow wagtail)	MI	Y	N	2.38	3	Y
Numenius madagascariensis (eastern curlew)	CR	N	N	0.56	603	Y
Numenius minutus (little curlew)	MI	Y	N	1.87	179	Y
Numenius phaeopus (whimbrel)	MI	N	N	1.87	897	Y
Oceanites oceanicus (Wilson's storm-petrel)	MI	N	N	3.90	18	Y
Onychoprion anaethetus (bridled tern)	MI	N	N	3.92	10	Y
Pandion haliaetus (osprey)	MI	N	N	0.67	469	Y
Phalaropus lobatus (red-necked phalarope)	MI	N	N	16.53	6	Y
Philomachus pugnax (ruff)	MI	N	N	3.83	14	Y
Plegadis falcinellus (glossy ibis)	MI	Y	N	2.57	192	Y
Pluvialis fulva (Pacific golden plover)	MI	N	N	0.75	323	Y
Pluvialis squatarola (grey plover)	MI	N	N	0.81	433	Y
Polytelis alexandrae (princess parrot)	P4	Y	N	3.83	1	Y
Puffinus huttoni (Hutton's shearwater)	EN	N	N	0.81	4	Y
Rostratula australis (Australian painted snipe)	EN	N	N	10.46	17	Y

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 (total)	Are surveys adequate to identify? [Y, N, N/A]
Spatula querquedula (garganey)	MI	N	N	15.24	5	Y
Stercorarius parasiticus (Arctic jaeger, Arctic skua)	MI	N	N	0.94	1	Y
Sterna dougallii (roseate tern)	MI	N	N	3.90	42	Y
Sterna hirundo (common tern)	MI	N	N	0.75	142	Y
Sterna sumatrana (black-naped tern)	MI	N	N	3.06	1	Y
Sternula albifrons (little tern)	MI	N	N	1.35	340	Y
Sula leucogaster (brown booby)	MI	N	N	0.20	269	Y
Thalasseus bergii (crested tern)	MI	N	N	1.03	459	Y
Tringa brevipes (grey-tailed tattler)	MI	N	N	0.75	765	Y
Tringa glareola (wood sandpiper)	MI	Y	N	2.11	149	Y
Tringa nebularia (common greenshank)	MI	N	N	1.87	876	Y
Tringa stagnatilis (marsh sandpiper)	MI	N	N	2.11	254	Y
Tringa totanus (common redshank)	MI	N	N	4.41	99	Y
Tyto novaehollandiae kimberli (masked owl (northern))	P1	N	N	2.37	1	Y
Xenus cinereus (Terek sandpiper)	MI	N	N	2.11	541	Y
Mammals						
Dasyurus hallucatus (northern quoll)	EN	N	N	2.83	1	Y
Isoodon auratus auratus (golden bandicoot (mainland), wintarru)	VU	N	N	28.65	1	Y
Lagorchestes conspicillatus leichardti (spectacled hare-wallaby (mainland))	P4	Y	Y	37.06	40	Y
Macrotis lagotis (bilby, dalgyte, ninu)	VU	Y	Y	0.21	282	Y
Mesembriomys macrurus (golden-backed tree-rat)	P4	Y	N	9.80	1	Y
Ozimops cobourgianus (northern coastal free-tailed bat)	P1	Y	Y	1.42	2	Y
Phascogale tapoatafa kimberleyensis (Kimberley brush-tailed phascogale)	VU	N	N	28.65	1	Y
Trichosurus vulpecula arnhemensis (northern brushtail possum (Kimberley))	VU	Y	Y	1.08	11	Y
Wyulda squamicaudata (scaly-tailed possum)	P4	Y	N	5.41	1	Y
Reptiles						
Aipysurus apraefrontalis (short-nosed seasnake)	CR	N	N	3.92	1	Y
Ctenotus angusticeps (Airlie Island Ctenotus, Northwestern coastal Ctenotus)	P3	Y	Y	3.73	32	Y
Lerista separanda (Dampierland plain slider)	P2	N	N	5.39	6	Y
Liopholis kintorei (great desert skink)	VU	N	N	28.21	1	Y
Simoselaps minimus (Dampier Peninsula goanna)	P2	N	N	5.39	3	Y
Varanus sparnus (Dampier Peninsula goanna)	P1	N	N	35.56	7	Y

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

A.5. Ecological community analysis table

Community name	Conservation status (WA)	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Corymbia paractia dominated community on dunes	P1	Y	Y	Y	0.39	63	Y
Grevillea pyramidalis	P1	Y	N	N	6.35	1	Y
Eighty Mile Land System	P3	N	Y	N	33.22	4	Y
Gourdon Land System	P3	N	N	N	47.42	4	Y
Kimberley Vegetation Association 37	P3	N	N	N	28.97	3	Y
Kimberley Vegetation Association 67	P3	N	N	N	43.85	5	Y
Kimberley Vegetation Association 73	P3	N	N	N	1.9	9	Y
Kimberley Vegetation Association 770	P1	N	N	N	1.66	1	Y
Monsoon (vine) thickets on the coastal sand dunes of Dampier Peninsula	EN	N	N	Y	0.89	9	Y
Nimalarica Claypan Community (prevously Nimalaica)	P4	N	N	N	15.96	4	Y
Relict dune system dominated by extensive stands of Minyjuru (Mangarr) Sersalisia (formerly Pouteria) sericea.	P1	Y	N	Y	1.01	19	Y
Roebuck Land System	P3	N	N	N	12.42	3	Y
Species-rich faunal community of the intertidal mudflats of Roebuck Bay	VU	N	N	Y	1.87	1	Y

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		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared does not contain locally/ regionally significant flora, habitats or assemblages of plants. The area proposed to be cleared may have locally significant fauna occur at the time of clearing. The 360 Environmental (2023) flora and vegetation report found no PECs within or around the application area.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The application area may provide suitable habitat for several conservation significant fauna species.	May be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared is unlikely to contain habitat for threatened flora species.	Not likely to be at variance	No
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: According to spatial data and 360 Environmental's flora and vegetation report, the area proposed to be cleared does not contain species that can indicate a TEC.	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the mapped vegetation type and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia.	Not at variance	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Given the distance to the nearest conservation area is approximately 1.29 kilometres, the proposed clearing is not likely to have an impact on the environmental values of any adjacent or nearby conservation areas.	Not at variance	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given no watercourses or wetlands are recorded within the application area, the proposed clearing is not in an environment associated with a watercourse or wetland.	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are susceptible to wind and water erosion, nutrient export, and salinity. Noting the extent of the application area and the condition of the vegetation, the proposed clearing may have an appreciable impact on land degradation.	May be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: Given no water courses, wetlands or Public Drinking Water Sources Areas are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.	Not at variance	No
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: The surveyed topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding. The Commissioner of Soil and Land Conservation information indicates that the soil across the application area is prone to waterlogging. Given no water courses or wetlands are recorded within the application area and no surface water features are mapped within the clearing area, the proposed clearing is not likely to contribute to waterlogging.	Not likely to be at variance	Yes Refer to Section 3.2.2, above.

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.

Condition	Description
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 and photographs of the vegetation

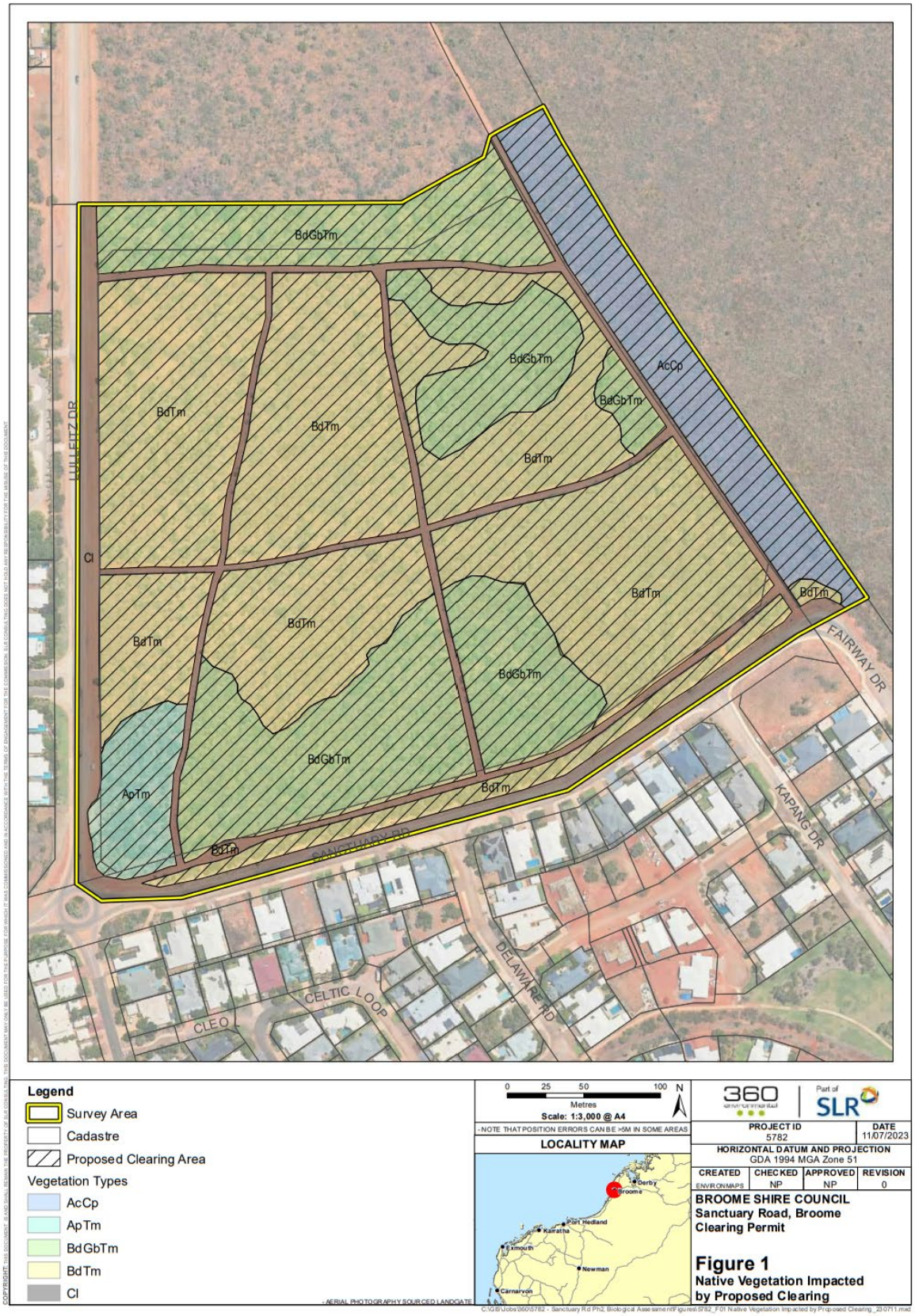

Figure C: Map of the survey area and the location of the vegetation types (360 Environment, 2023a).

Figure D: *Ehretia saligna* var. *saligna*, *Acacia colei* var. *colei* and *Acacia plectocarpa* subsp. *plectocarpa* low open forest over *Acacia adoxa* var. *subglabra*, *Persoonia falcata* and *Phyllanthus* sp. mid open shrubland over *Triodia microstachya* low sparse hummock grassland (360 Environment, 2023a).

Figure E: *Corymbia greeniana* low open woodland over *Acacia colei* var. *colei*, *Acacia adoxa* var *subglabra* and *Corymbia flavescens* mid shrubland over *Triodia microstachya* mid open hummock grassland (360 Environment, 2023a).

Figure F: *Acacia plectocarpa* subsp. *plectocarpa*, *Corymbia flavescens* and *Corymbia greeniana* low woodland over *Abutilon australiense* and *Dodonaea hispidula* var. *arida* low sparse shrubland over *Triodia microstachya* low hummock grassland (360 Environment, 2023a).

Figure G: *Acacia plectocarpa* subsp. *plectocarpa*, *Flueggea virosa* subsp. *melanthesioides* and *Gyrocarpus americanus* subsp. *pachyphyllus* low open woodland over *Acacia colei* var. *colei* and *Persoonia falcata* tall open shrubland over *Triodia microstachya* low hummock grassland (360 Environment, 2023a).

Figure H: *Brachychiton diversifolius* subsp. *diversifolius*, *Corymbia greeniana* and *Lysiphyllum cunninghamii* low woodland over *Acacia colei* var. *colei*, *Erythrophleum chlorostachys* and *Grewia pindanica* mid shrubland (360 Environment, 2023a).

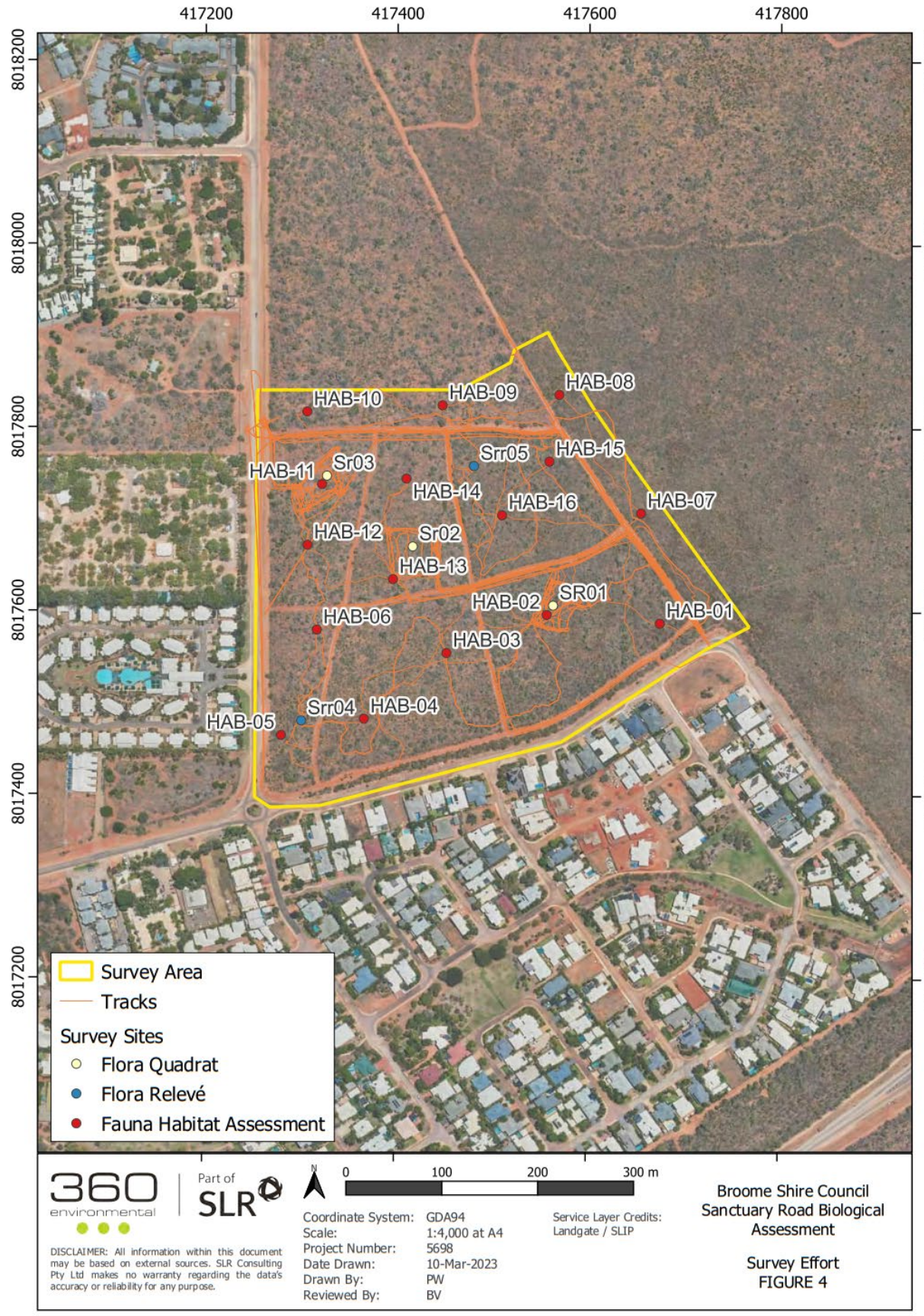

Figure I: Map of the survey area and the location of fauna assessment site photos (360 Environment, 2023a).

Figure J: HAB-01-JE – Burrows, hummocks, leaf litter, Logs > 10cm, peeling bark, worrdy debris, Ground cover is between 76 and 100% coverage (360 Environment, 2023a).

Figure K: HAB-02-JE - Burrows, hummocks, leaf litter, Logs > 10cm, peeling bark, worrdy debris, Ground cover is between 76 and 100% coverage (360 Environment, 2023a).

Figure L: HAB-03-JE - Burrows, hummocks, leaf litter, Logs > 10cm, peeling bark, worrdy debris, Ground cover is between 51 and 75% coverage (360 Environment, 2023a).

Figure M: HAB-04-JE - Burrows, leaf litter, Woody debris, Ground cover is between 26 and 50% coverage (360 Environment, 2023a).

Figure N: HAB-05-JE – Leaf litter, log > 10 cm, Peeling bark, woody debris, Ground cover is between 51 and 75% coverage (360 Environment, 2023a).

Figure O: HAB-06-JE – Hummocks, leaf litter, peeling bark, woody debris, Ground cover is between 51 and 75% coverage (360 Environment, 2023a).

Figure P: HAB-07-JE- Leaf litter, Peeling bark, woody debris, Ground cover is between 51 and 75% coverage (360 Environment, 2023a).

Figure Q: HAB-08-JE – Burrows, Leaf litter, woody debris, Ground cover is between 51 and 75% coverage (360 Environment, 2023a).

Figure R: HAB-09-JE – Leaf litter, woody debris, Ground cover is between 26 and 50% coverage (360 Environment, 2023a).

Figure S: HAB-10-JE – Leaf litter, logs >10 cm, peeling bark, woody debris, Ground cover is between 26 and 50% coverage (360 Environment, 2023a).

Figure T: HAB-11-JE - Leaf litter, logs > 10cm, Peeling bark woody debris, Ground cover is between 51 and 75% coverage (360 Environment, 2023a).

Figure U: HAB-12-JE - Leaf litter, logs > 10cm, Peeling bark woody debris, Ground cover is between 51 and 75% coverage (360 Environment, 2023a).

Figure V: HAB-13-JE - Leaf litter, logs > 10cm, woody debris, Ground cover is between 26 and 50% coverage (360 Environment, 2023a).

Figure W: HAB-14-JE - Leaf litter, logs > 10cm, Peeling bark, woody debris, Ground cover is between 26 and 50% coverage (360 Environment, 2023a).

Figure X: HAB-15-JE – Burrows, Hummocks, Leaf litter, logs > 10cm, peeling bark, woody debris, Ground cover is between 76 and 100% coverage (360 Environment, 2023a).

Figure Y: HAB-16-JE - Burrows, Hummocks, Leaf litter, logs > 10cm, peeling bark, woody debris, Ground cover is between 51 and 75% coverage (360 Environment, 2023a).

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)
- 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 Statistics
- 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, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- 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)

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