GOVERNMENT OF
WESTERN AUSTRALIA

# CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

| | |
|---|---|
| **Purpose Permit number:** | CPS 9883/1 |
| **Permit Holder:** | Rottnest Island Authority |
| **Duration of Permit:** | From 8 January 2024 to 8 January 2039 |

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

## PART I – CLEARING AUTHORISED

### 1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of constructing staff accommodation facilities.

### 2. Land on which clearing is to be done

Lot 10976 on Deposited Plan 216860, Rottnest Island

### 3. Clearing authorised

The permit holder must not clear more than 2.78 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

### 4. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 8 January 2029.

## PART II – MANAGEMENT CONDITIONS

### 5. 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.

## 6. Weed and dieback 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* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known *dieback* or *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.

## 7. Directional clearing

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

## 8. Fauna management

(a) In relation to the area cross-hatched yellow in Figure 1 of Schedule 1, the permit holder must engage a *fauna specialist* to inspect that area immediately prior to, and for the duration of clearing activities, for the presence of the following fauna species:

  (i) *Setonix brachyurus* (quokka)

  (ii) *Tiliqua rugosa konowi* (Rottnest Island bobtail)

(b) Clearing activities must cease in any area where fauna referred to in condition 8(a) are identified until either:

  (i) the fauna individual has moved on from that area to adjoining *suitable habitat*; or

  (ii) the fauna individual has been removed by a *fauna specialist*.

(c) Any fauna individual removed in accordance with condition 8(b)(ii) must be relocated by a *fauna specialist* to a *suitable habitat*.

(d) Where fauna is identified under condition 8(a), the permit holder must within 14 calendar days provide the following records to the *CEO*:

  (i) the number of individuals identified;

  (ii) the date each individual was identified;

  (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

  (iv) the number of individuals removed and relocated;

  (v) the relevant qualifications of the *fauna specialist* undertaking removal and relocation;

  (vi) the date each individual was removed;

  (vii) the method of removal;

  (viii) the date each individual was relocated;

  (ix) the location where each individual was relocated to, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and

  (x) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

## 9. Offset - Revegetation and rehabilitation

Within 24 months of commencing *clearing* authorised under this permit, and no later than 8 January 2029, the permit holder must *revegetate* and *rehabilitate* 5.77 hectares of native vegetation within the area cross-hatched red in Figure 2 of Schedule 1 of this permit by implementing and adhering to the Parker Point Housing *Revegetation Plan*, December 2023 prepared by Rottnest Island Authority (2023), including but not limited to the following actions:

(a) undertake *planting* with species listed in Table 3 of Schedule 2:
  (i) at the density specified in Table 3 of Schedule 2;
  (ii) at an *optimal time*; and
  (iii) using only *local provenance* propagating material;

(b) establish either tree guards or fencing around *plantings* such that they are protected from grazing;

(c) implement hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the *rehabilitation* areas;

(d) undertake *weed* control activities to maintain the minimum completion criteria specified in Table 4 of Schedule 2;

(e) establish at least five 10 x 10 metre quadrat monitoring sites within rehabilitated areas;

(f) undertake monitoring of the areas *revegetated* and *rehabilitated* under condition 9 of this permit by an *environmental specialist* in accordance with Table 4 of Schedule 2 until the completion criteria listed in Table 4 of Schedule 2 have been met;

(g) undertake remedial actions for *revegetation* and *rehabilitation* areas where monitoring indicates the completion criteria, outlined in Table 4 of Schedule 2, have not been met including:
  (i) further *planting* of *native vegetation* that will result in the completion criteria specified in Table 4 of Schedule 2 being met, ensuring only using only *local provenance* propagating material of species listed in Table 3 of Schedule 2 are used;
  (ii) further *weed* control activities;
  (iii) further monitoring of the *revegetated* and *rehabilitated* areas by an *environmental specialist*, until the completion criteria in Table 4 of Schedule 2 are met.

(h) where a determination is made by an *environmental specialist* that the completion criteria in Table 4 of Schedule 2 are met, that determination shall be submitted to the CEO within three months of the determination being made by the *environmental specialist*.

# PART III - RECORD KEEPING AND REPORTING

## 10. 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 | (a) the species composition, structure, and density of the cleared area;<br>(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings;<br>(c) the date that the area was cleared;<br>(d) the size of the area cleared (in hectares);<br>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 5; and<br>(f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 6;<br>(g) actions taken in accordance with condition 7; and<br>(h) actions taken to manage and mitigate impacts to fauna in accordance with condition 8. |
| 2. | In relation to offset management, pursuant to condition 9 | (a) the location and boundaries of the 5.77 hectare offset area (recorded digitally as a shapefile) subject to conditions 9; and<br>(b) actions undertaken in accordance with condition 9. |

### 11. Reporting

The permit holder must provide to the *CEO* the records required under condition 10 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 department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*. |
| clearing | has the meaning given under section 3(1) of the EP Act. |

| Term | Definition |
|---|---|
| condition | a condition to which this clearing permit is subject under section 51H of the EP Act. |
| environmental specialist | means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of two (2) years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this permit, or who is approved by the CEO as a suitable environmental specialist. |
| fauna specialist | means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the *CEO* as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*. |
| fill | means material used to increase the ground level, or to fill a depression. |
| dieback | means the effect of *Phytophthora* species on native vegetation. |
| department | means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3. |
| EP Act | *Environmental Protection Act 1986* (WA) |
| local provenance | means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared. |
| mulch | means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation. |
| native vegetation | has the meaning given under section 3(1) and section 51A of the EP Act. |
| optimal time | means the optimal time for undertaking direct seeding and planting for that region. |
| planting(s)/plant | means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species |
| rehabilitate/rehabilitated/ rehabilitation | means actively managing an area containing native vegetation in order to improve the ecological function of that area. |
| revegetate/ed/ing/ion | means the re-establishment of a cover of *local provenance native vegetation* in an area using methods such as natural regeneration, direct seeding and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area. |
| Revegetation Plan | means the *Parker Point Road Staff Housing Revegetation Management Plan, December 2023* (DWER ref DWERDT876883) produced by Rottnest Island Authority for this permit and approved by the CEO (Rottnest Island Authority, 2023). |
| weeds | means any plant –<br>(a) that is a declared pest under section 22 of the |

| Term | Definition |
|---|---|
| | *Biosecurity and Agriculture Management Act 2007*; or<br>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or<br>(c) not indigenous to the area concerned. |

**END OF CONDITIONS**

JBurton

Jessica Burton
MANAGER
NATIVE VEGETATION REGULATION

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

6 December 2023

# Schedule 1


**Figure 1: Map of the boundary of the area within which clearing may occur (area cross-hatched yellow)**


**Figure 2: Map of the boundary of the area within which conditions apply (cross-hatched red)**

# Schedule 2

### Table 3. Target species for revegetation

| Species name | Common name | Species type | Planting density |
|---|---|---|---|
| *Callitris preissii* | Rottnest Island pine | dominant tree species | 1 stem per 5 metres squared (0.2 plants per square metre). |
| *Melaleuca lanceolata* | Rottnest Island teatree | dominant tree species | |
| *Acanthocarpus preissii* | prickle lily | understory species | |
| *Rhagodia baccata* | berry saltbush | understory species | |
| *Austrostipa flavescens* | coast spear-grass | understory species | |
| *Trachymene pilosa* | native parsnip | understory species | |
| *Guichenotia ledifolia* | | understory species | |

### Table 4. Completion criteria for revegetation and rehabilitation

| Aspect | Completion criteria | Monitoring frequency |
|---|---|---|
| 1) species richness | Each 10 m x 10 m monitoring site includes dominant tree and understory species listed in Table 3 after both five years and ten years after planting. | Species richness in monitoring sites will be monitored at one, three, five years and ten years after planting. |
| 2) species density | The rehabilitation area to contain a density of at least 1000 surviving stems of species listed in Table 3 per hectare which includes a minimum of 200 stems per hectare of dominant tree species. To be achieved after both five years and ten years after planting. | The number of surviving stems of species in the revegetation areas will be monitored at one, three, five years and ten years after planting. |
| 4) vegetation condition | Vegetation in each 10 m x 10 m monitoring site must be in a Good to Very good (Keighery, 1994) or higher condition after both five years and ten years after planting. | Vegetation condition in monitoring sites will be monitored at one, three, five years and ten years after planting. |
| 5) weeds | No declared weeds regulated under the *Biosecurity and Agriculture Management Act 2007* to be present within the rehabilitation area five years of planting. | Weeds in the revegetation areas will be monitored at one, three, five years and ten years after planting. |

Government of Western Australia
Department of Water and Environmental Regulation on

# Clearing Permit Decision Report

## 1 Application details and outcome

### 1.1. Permit application details

| | |
|---|---|
| **Permit number:** | CPS 9883/1 |
| **Permit type:** | Purpose permit |
| **Applicant name:** | Rottnest Island Authority |
| **Application received:** | 19 September 2022 |
| **Application area:** | 2.78 hectares |
| **Purpose of clearing:** | Constructing staff housing |
| **Method of clearing:** | Mechanical |
| **Property:** | Lot 10976 on Deposited Plan 216860 |
| **Location (LGA area/s):** | City of Cockburn |
| **Localities (suburb/s):** | Rottnest Island |

### 1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a 2.78-hectare contiguous area (see Figure 1, Section 1.5). The proposed clearing will support the development of housing facilities for staff working on Rottnest Island.

The proposed clearing area was reduced from 4 hectares to 2.78 hectares during the assessment process (refer to Section 3.1 for further details).

### 1.3. Decision on application

| | |
|---|---|
| **Decision:** | Granted |
| **Decision date:** | 6 December 2023 |
| **Decision area:** | 2.78 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 one submission were received. Consideration of matters raised in the public submission is summarised in **Error! Reference source not found.**.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix C), relevant datasets (see Appendix I.1), the findings of flora and vegetation surveys, the clearing principles set out in Schedule 5 of the EP Act (see Appendix D), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that:

- The application may contain habitat for quokka, Rottnest Island bobtail, Swan Coastal Plain shield-backed trapdoor spider, Perth slider, Rottnest Island dugite and peregrine falcon, however the proposed clearing is unlikely to result in impacts to the conservation status of these species or significant habitat;

- The proposed clearing will result in clearing of a 2.27-hectare area of the SCP30aThreatened Ecological Community (TEC) in Degraded to Very Good condition.
- The application area has the potential to contain Priority 4 flora species *Lepidium puberulum*, however it is considered that even if it were to be present within the application area the proposed clearing would be unlikely to impact upon the conservation status of this species or significant habitat.
- The proposed clearing is not considered likely to impact the values of the Rottnest Island reserve; and
- The proposed clearing is unlikely to result in impacts to nearby Government House Lake or the hypersaline microbial community 1 (Government House Lake, Rottnest) Priority 2 ecological community associated with this lake.

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 impacts of the proposed clearing can be minimised and managed through conditions on the permit, including the provision of an offset (see Section 4), such that it is unlikely to lead to an unacceptable risk to environmental values, and that 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;
- inspect application area prior to clearing for quokka and Rottnest Island bobtail and relocate any fauna found; and
- implement a revegetation and rehabilitation offset as described in Section 4.

## 1.5. Site map


Figure 1. Map of the application area. 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 polluter pays principle
- 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)
- *Rottnest Island Authority Act 1987* (WA) (RIA Act)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

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 and necessity of the clearing

The applicant (360 Environmental, 2022a) provided the following information with their application to demonstrate consideration of avoidance and mitigation measures for the proposed clearing:

- Areas subject to erosion and sedimentation as a result of clearing shall be stabilised (i.e. combination of binding sprays, site mulch, bunding, scouring, catchment reduction as required).
- Adjacent areas of intact vegetation will be fenced to ensure no accidental impacts or clearing.
- Vegetation clearing will be scheduled to occur immediately before planned earthworks to minimise the potential for dust, where practicable.
- To ensure dieback is not introduced or spread on Rottnest Island, the movement of soils and plant material will follow Rottnest Island Authority (RIA) biosecurity policies and procedures.
- A pre-clearing fauna inspection will be performed immediately prior to clearing and identified fauna such as reptiles will be relocated to minimize impacts to fauna that may reside in the clearing area.

The following further information demonstrating avoidance and mitigation considerations was provided during the assessment (Rottnest Island Authority (RIA), 2023a and 2023c):

- The development will be set back off Parker Point Road to retain the mature trees, providing noise and privacy buffers.
- Proposed building footprints consider environmental features inclusive of mature trees and existing topography. The Landscape Plan designs retain existing trees within building clusters.
- The Landscape Plan designs consider the existing vegetation. Both designs aim to enhance the current environmental assets of the site, maintaining the existing vegetation where possible.
- RIA will put measures in place, at a local level, to prevent surface water runoff during the clearing. Surface water will be retained on site and the RIA will apply bunding (e.g. earth bund, coir logs or similar) where required.

Noting that the application area contains an area of the SCP30a TEC (refer to Section 3.2.2 for further details), the applicant (RIA, 2023a) also provided the following additional information to justify the necessity of clearing at this particular location:

“The recent development approvals for the Hotel Rottnest Samphire Resort (constructed and operational from late 2020) and The Lodge Wadjemup (under construction and operational from approx. 2024) include the development condition that the respective businesses are required to build their own staff housing. As set out previously, following review of available land parcels, the Parker Point Road site was selected to facilitate the development of staff housing for the following reasons:

- existing staff housing is located on Parker Point Road - locating staff housing in one location demonstrates proper and orderly planning.
- location is approximately 500m from existing short stay visitor accommodation.
- location is within the prescribed settlement boundary, which is approved for development.
- location can utilise existing water infrastructure on Parker Point Road and scheduled electrical upgrade on Parker Point Road.
- location is zoned in the Rottnest Island Management Plan (RIMP) - Land Use Plan as 'Mixed Use'."

Further information provided by the applicant justifying the site selected for this development is presented in Appendix G.

The application area was also reduced during the assessment of this application from 4 hectares (see Figure 2 below) to 2.78 hectares, which reduced the area of SCP30a threatened ecological community being cleared from 4 hectares to 2.27 hectares. The applicant has agreed to a revegetation offset to mitigate impacts to the SCP30a TEC (refer to Section 4 for further details).


Figure 2. Original 4-hectare application area.

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 C) 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 **Error! Reference source not found.**) identified that the risk of impacts from the proposed clearing to biological values (fauna and vegetation) and conservation areas required further consideration. 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 Principles (a) and (b)*

Assessment

The following conservation significant fauna species may utilise vegetation within the application area as habitat:

- *Hesperocolletes douglasi* (Douglas' broad-headed bee) (Critically Endangered)
- *Setonix brachyurus* (quokka) (Vulnerable)
- *Tiliqua rugosa konowi* (Rottnest Island bobtail) (Vulnerable)
- *Idiosoma sigillatum* (Swan Coastal Plain shield-backed trapdoor spider) (Priority 3)
- *Lerista lineata* (Perth slider, lined skink) (Priority 3)
- *Pseudonaja affinis exilis* (Rottnest Island dugite) (Priority 4)
- *Falco peregrinus* (Peregrine falcon) (Other specially protected)

**Douglas' broad-headed bee** was last recorded on Rottnest Island in 1938 (TSSC, 2019). It is not known what vegetation it utilised on the island, although one specimen was found east of Muchea in Banksia woodlands in 2015 (TSSC, 2019). Noting the dramatic changes to vegetation on the island since 1938, and that extensive searches, including within Rottnest Island, that has not recorded this species elsewhere, it is considered highly unlikely to occur within the application area, although its presence cannot be definitely ruled out.

**Quokka** utilise a wide variety of habitats on Rottnest Island, with an estimated 46 per cent of the population found around the Rottnest 'settlement' area, where the application area is situated, where water and grassed lawns are available (O'Connor, 1999). RIA staff have sighted quokka scats within the application area (360 Environmental, 2022a), meaning that quokkas are likely to utilise the application area. Despite the high level of disturbance on Rottnest Island the species' population on the island is large compared to that on the mainland (estimated as between 8000-12000 individuals in 2012) (DEC, 2013) and the island population is considered resilient to current levels of disturbance (DCCEEW, n.d.). As such, it is considered that the proposed clearing is unlikely to result in impacts to the conservation status of quokka. Impacts to individuals that may be utilising the habitat at the time of clearing will be mitigated through fauna management conditions on the permit.

The **Rottnest Island bobtail** is likely to inhabit coastal habitat, limestone heath, and *Acanthocarpus preissii* – *Austrostipa flavescens* and *Acacia rostellifera* heath communities (RIA, 2014). The species may occur within the application area. However, noting Rottnest Island retains approximately 75% remnant vegetation, it is considered that the proposed clearing is unlikely to result in impacts to the conservation status of Rottnest Island bobtail. Impacts to individuals will be mitigated through fauna management conditions on the permit.

**Swan Coastal Plain shield-backed trapdoor spider** occurs within Banksia woodland and heathland on sandy soils (Rix et al., 2018), and has been previously recorded on Rottnest Island. As such, it is possible it may occur within the application area. However, as Rottnest Island retains approximately 75% remnant vegetation, it is considered that the proposed clearing is unlikely to result in impacts to the conservation status of Swan Coastal Plain shield-backed trapdoor spider.

The **Perth Slider** has rarely been observed on Rottnest Island and at one point was documented as 'possibly extinct' (Maryan et.al., 2015), however during a targeted search in 2019 it was recorded on the island for the first time since 1986, in *Acacia rostellifera* scrub (RIA, 2022). While *Acacia rostellifera* was not identified within the application area area by 360 Environmental (2022a) it is considered that individual of Perth Slider may still occur within the clearing area. As Rottnest Island retains approximately 75% remnant vegetation, it is considered that the proposed clearing is unlikely to result in impacts to the conservation status of Perth Slider or on significant habitat.

The **Rottnest Island dugite** is likely to inhabit coastal habitat, limestone heath, and *Acanthocarpus preissii* – *Austrostipa flavescens* and *Acacia rostellifera* heath communities (RIA, 2014). Habitat for this species may occur within the application area. However, noting Rottnest Island retains approximately 75% remnant vegetation, it is considered that the proposed clearing is unlikely to result in impacts to the conservation status of Rottnest Island dugite or impact on significant habitat. Impacts to individuals will be mitigated through fauna management conditions on the permit.

The **peregrine falcon** typically nests on rocky ledges in tall, vertical cliff faces and gorges, or in tall trees associated with drainage lines, and can hunt in a range of habitat types including timbered watercourses, riverine environments, wetlands, plains, open woodlands, and pylons and spires of buildings (Australian Museum, 2021). Considering the

wide distribution and range of habitats used by the peregrine falcon the proposed clearing is unlikely to result in impacts to this species.

Conclusion

Based on the above assessment, while the application may contain habitat for quokka, Rottnest Island bobtail, Swan Coastal Plain shield-backed trapdoor spider, Perth slider, Rottnest Island dugite and peregrine falcon, the proposed clearing is unlikely to result in impacts to the conservation status of these species or on significant habitat for these species. Impacts to individuals can be mitigated through conditions placed on the permit.

Conditions

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

- Slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity will minimise impact to individuals.
- Inspect application area prior to clearing for quokka and Rottnest Island bobtail and relocate any fauna found.

### *3.2.2. Biological values (vegetation and flora) - Clearing Principles (a) and (d)*

Assessment

It is noted that flora surveys occurring within the application area (Focused Edge Consulting, 2022 and 360 Environmental, 2022b) did not occur at an appropriate time (i.e. late winter and spring) to detect the Priority 4 annual herb *Lepidium puberulum*. This species is found within a range of vegetation types on sandy soils within Rottnest Island, Garden Island and along the coastline of WA (Western Australian Herbarium, 1998-), and it is considered that this species has the potential to be present within the application area. However, noting the wide range and number of records of this species, as well as that it is a Priority 4 species, it is considered that even if it were to be present within the application area the proposed clearing would be unlikely to impact upon the conservation status of this species. It is considered that flora surveys were adequate to detect other conservation significant flora species considered possible to occur within the application area, and individuals of such species were not found (Focused Edge Consulting, 2022 and 360 Environmental, 2022b).

The application area contains 2.27 hectares of vegetation analogous with the *Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain (floristic community type 30a as originally described in Gibson et al. (1994))- SCP30a Threatened Ecological Community (SCP 30a TEC) in Degraded to Very Good (Keighery, 1994) condition. This TEC is listed as Critically Endangered under the BC Act. It is highly restricted and located on calcareous sandy soils of the Quindalup dunes in urban areas close to Perth, on Garden Island and on Rottnest Island (DBCA, 2023). DBCA (2023) advised that while the impacts of this proposal on the conservation status and overall mapped extent of the FCT30a TEC are unlikely to be significant, the cumulative impacts of this and other developments increase the risk to this highly restricted TEC. To mitigate impacts to this TEC, the applicant has agreed to revegetate and rehabilitated 5.77-hectares of this TEC elsewhere on the island (refer to Section 4 for further details).

DBCA (2023) also advised that at a local scale the impacts of the clearing to the SCP30a TEC may be considered significant, as it will result in the clearing of the areas of the TEC patch in the best condition (Good to Very Good condition) and will fragment the TEC occurrence in this area. In response to this, the applicant noted that the portion of the SCP 30a TEC mapped as being in Very Good condition, while meeting the technical definition of the SCP30a TEC, has a quite different species composition to other patches of SCP30a TEC on Rottnest Island, which may reflect the fact that the vegetation in this area contains planted vegetation (Gabbitus R., pers. comm.). Although the proposed clearing will result in fragmentation of the existing SCP30a TEC patch, the offset area was chosen to provide connectivity to an existing patch of SCP30a TEC, with the resultant TEC patch in the offset area likely more resilient and resistant to edge effects and other disturbance.

The risk of impacts of the proposed clearing to the Priority 2 ecological community Hypersaline microbial community 1 (Government House Lake, Rottnest) have been considered in Section 3.2.4 below.

Conclusion

Based on the above assessment, the proposed clearing will result in clearing of a 2.27-hectare area of the SCP30a TEC in Degraded to Very Good condition. The impacts of this clearing will be mitigated by a revegetation offset required as a condition of the permit (refer to Section 4).

The application area has the potential to contain Priority 4 species *Lepidium puberulum,* however, it is considered that even if it were to be present within the application area the proposed clearing would be unlikely to impact upon the conservation status of this species.

Conditions

- Revegetation offset (refer to section 4 for further details).

#### *3.2.3. Conservation areas - Clearing Principle (h)*

Assessment

The application area is within Rottnest Island, a Class A reserve for the purpose of 'public recreation' as registered in 2003 under the *Land Administration Act 1997*. Under the provisions of the Rottnest Island Authority Act 1987 (RIA Act), the control and management of the Island is vested in the RIA. The RIA Act also defines the 'settlement area', which includes areas zoned under the Draft Rottnest Island Management Plan 2023-2028 as "mixed use", in which the application area is within (RIA, 2023d). The purpose of this zone is to provide for residential and or leisure and or commercial uses, accommodation for seasonal and short-term workers and to facilitate the use, development and redevelopment of land in accordance with the existing or preferred character of the area, whereas conservation is a key function of the 'reserve' zoned portion of the island (RIA, 2023d). Hence, while RIA should still consider the environmental impacts of the proposed clearing, noting that conservation is not the primary purpose of the portion of the island encompassing the application area, the proposed clearing is not considered likely to significantly impact the values of the Rottnest Island reserve overall. Weed and dieback management conditions will mitigate impacts to adjacent vegetation within the reserve.

Conclusion

Based on the above assessment, the proposed clearing is not considered likely to impact the values of the Rottnest Island reserve.

Conditions

- Weed and dieback management condition.

#### *3.2.4. Water quality and wetlands - Clearing Principle (i)*

Assessment

Vegetation within the application area does not include riparian vegetation associated with Government House Lake and is separated from this wetland by a strip of cleared land, a road, and riparian vegetation associated with the wetland. As such, the proposed clearing is considered unlikely to impact upon the function of the wetland or the hypersaline microbial community 1 (Government House Lake, Rottnest) Priority 2 ecological community associated with this lake.

Noting that the applicant has advised that measures will be put in place to prevent surface water runoff during the clearing, and that any surface water will be retained on site, the proposed clearing is considered unlikely to result in erosion and sedimentation impacting surface water of this wetland.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to result in impacts to nearby Government House Lake or the hypersaline microbial community 1 (Government House Lake, Rottnest) Priority 2 ecological community associated with this lake.

Conditions

Nil.

### 3.3. Relevant planning instruments and other matters

While the application area is within the boundaries of the City of Cockburn, the City of Cockburn has no involvement in or responsibility for any functions relating to the control and management of Rottnest Island. Development and Improvement Applications for works on Rottnest Island are required to be submitted to and determined by RIA pursuant to the *Rottnest Island Authority Act 1987* and subsequent Regulations.

Noting that the clearing will modify a threatened ecological community, the applicant will require an authorisation under section 45 of the BC Act from DBCA prior to undertaking the proposed clearing. It is understood RIA has applied for this authorisation.

A registered Aboriginal site of significance (SM22-A-01) intersects the application area. It is the permit holder's responsibility to comply with the *Aboriginal Cultural Heritage Act 2021* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

## 4 Suitability of offsets

Through the detailed assessment outlined in Section 3.2 above, the Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance and mitigation measures summarised in Section 3.1:

- Clearing of a 2.27 hectare area of the *Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain (floristic community type 30a as originally described in Gibson et al. (1994))- SCP30a Threatened Ecological Community in Degraded to Very Good condition.

The applicant proposed an environmental offset consisting of revegetation of a 5.77-hectare area approximately 2.4 kilometres southwest of the application area. The applicant has proposed to place the revegetation offset area under a conservation covenant in accordance with the *Soil and Land Conservation Act* 1945 (SLC Act) to protect the revegetation area in perpetuity. The Delegated Officer considers that a conservation covenant is not required given that the revegetation area is already appropriately zoned as a Class A Reserve.

The applicant is required to revegetate the 5.77-hectare area with the objective of establishing vegetation that is consistent with the SCP30a TEC in good condition. A revegetation management plan has been provided by the applicant detailing revegetation commitments, targets and completion criteria, site preparation, maintenance and contingency measures and species list.

The Delegated Officer considers that this adequately counterbalances the significant residual impacts listed above. The justification for the values used in the offset calculation is provided in Appendix H.

## End

## Appendix A. Additional information provided by applicant

The applicant provided the following information during the course of the assessment.

| Summary of comments | Consideration of comment |
|---|---|
| Response to DWER's request for information letter (RIA, 2023a) | Considered in Section 3.1 |
| Discussion regarding vegetation in application area (R. Gabbitus 2023, personal communication, 5 October) | Considered in Section 3.2.1 |
| Revegetation Plan (RIA, 2023b) | Considered in Section 4 |
| Information regarding prevention of surface water runoff (RIA, 2023c) | Considered in Section 3.1 |

## Appendix B. Details of public submissions

| Summary of comments | Consideration of comment |
|---|---|
| The condition of vegetation was graded as 'good' or lower in 360 Environmental (2022b) report and vegetation condition was graded higher in the Focussed Vision (2022) survey. The lower grading of vegetation condition was adopted by 360 Environmental (2022a) to support the clearing permit indicating this report is biased and leads to a more favourable outcome when assessing the proposal against clearing principle (a). Also, the reasoning for adopting the 360 vegetation surveys over the Focussed Vision survey is not clearly articulated. | DWER considered both the 360 Environmental (2022b) and Focussed Vision (2022) surveys when evaluating vegetation condition, although it is noted there were areas within the application area where only the Focussed Vision (2022) survey was considered as the 360 Environmental (2022b) survey did not encompass the entire application area. While there were slight differences in vegetation condition mapped within the application area, these differences were not substantial and using one or the other would not have resulted in differences to DWER's overall assessment of the vegetation. |
| A very limited area of original vegetation is present at Rottnest. The clearing would therefore represent a significant loss of the remaining portion of original vegetation. This represents a clear diversion from the clearing principle (e). | Spatial data indicates that Rottnest Island retains approximately 75% of its pre-European vegetation extent, a relatively high extent. While it is acknowledged that much of the vegetation on the island has been modified from its original state to varying extents, so too has the vegetation within the application area, which has historically been cleared and consists of a mixture of regrowth and planted vegetation. It is considered that the clearing is not at variance with principle (e). |
| 360 Environmental (2022a) has provided limited reasoning as to when the clearing is potentially at variance with clearing principles (b), (d), (e), (h) and (i) - it is suggested these principles are revisited. | DWER has considered the clearing principles in Appendix D, with further detail as to the assessment of impacts in Section 3. DWER's assessment against the clearing principles differs to that of 360 Environmental (2022a) in several ways. In it's assessment DWER has also considered the necessity of the clearing (refer to Section 3.1). |
| There is no proposal for an offset to be implemented. | Offsets were discussed with the applicant during the assessment process and the final offset required is outlined in Section 4. |
| The proposed clearing areas provide valuable habitat for the quokka which is listed as 'Vulnerable' with major threats being development and habitat loss which is the subject of this proposal. | Impacts of the clearing to the quokka have been considered in Section 3.2.1. |
| The staff housing developments do not need to clear such a large area of land to support their proposal. It is recommended the developments be scaled back to a more realistic size suited to their operations which would require a much smaller clearing area. | As outlined in Section 3.1, it is considered that the applicant has sufficiently considered measures to avoid and minimise clearing, noting that they reduced the extent of the clearing area during the assessment and have advised they are planning to retain native vegetation within the development area where possible. |

# Appendix C. Site characteristics

## C.1. Site characteristics

| Characteristic | Details |
|---|---|
| Local context | The area proposed to be cleared is a 2.77hectares of native vegetation within a 2.78-hectare footprint in the intensive land use zone of Western Australia. It is surrounded by a road, buildings and native vegetation to the northwest and northeast, native vegetation to the southeast and a road and Rottnest Island Lake to the southwest.<br><br>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared, excluding ocean) retains approximately 75 per cent of the original native vegetation cover, although it is noted that a large portion of this is modified to various extents from its original state. |
| Ecological linkage | No formal ecological linkages have been identified within the application area. Vegetation within the application area forms part of a local ecological linkage between vegetation to the northwest and the southeast. |
| Conservation areas | The application area is within Rottnest Island, a Class A reserve for the purpose of 'public recreation' as registered in 2003 under the *Land Administration Act 1997*. It is managed by the RIA under the provisions of the *Rottnest Island Authority Act 1987*. |
| Vegetation description | A vegetation survey (Focused Vision Consulting, 2022) indicates the vegetation within the proposed clearing footprint consists of:<br><br>• CpMI - *Callitris priessi* and *Melaleuca lanceolata* Tall Shrubland<br>• OaAp - *Olearia axillaris* Tall Sparse Shrubland over *Acanthocarpos preissii* Low Open Shrubland<br>• MiAp - *Melaluca lanceolata* Tall Shrubland over *Acanthocarpos preissii* Low Open Shrubland<br>• Cleared<br><br>The full survey descriptions and maps are available in Appendix F.<br><br>This is consistent with the mapped vegetation type:<br><br>• Quindalup Complex (55), which is described as Coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of *Melaleuca lanceolata* (Rottnest Teatree) - *Callitris preissii* (Rottnest Island Pine), the closed scrub of *Acacia rostellifera* (Summer-scented Wattle) and the low closed *Agonis flexuosa* (Peppermint) forest of Geographe Bay. (Heddle et. al., 1980)<br><br>The mapped vegetation type retains approximately 60 per cent of the original extent (Government of Western Australia, 2019b). |
| Vegetation condition | Vegetation surveys (360 Environmental, 2022b and Focused Vision Consulting, 2022) Based on vegetation surveys (360 Environmental, 2022b and Focused Vision Consulting, 2022) vegetation can be described as being in Very Good to Completely Degraded (Keighery, 1994) condition, described as:<br><br>• Very good: Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.<br>• Good: Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it.<br>• Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management.<br>• Completely degraded: The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are |

| Characteristic | Details |
|---|---|
| | often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.<br><br>The full Keighery (1994) condition rating scale is provided in Appendix E. The full survey mapping is available in Appendix F.<br><br>The application area has historically been cleared, and the vegetation present is likely to be a mixture of regrowth and planting (RIA, 2023b). |
| Climate and landform | Climate: The long-term mean minimum temperature for Rottnest Island from 12.4˚C (July and August) to 17.8˚C (July) (1983 to 2022) and the long-term mean maximum temperature ranges from 19.5˚C (February) to 27.2˚C (February) (360 Environmental, 2022a).<br><br>Topography: The topography of the site is relatively flat, and ranges from seven metres Australian Height Datum (AHD) in the southwest part of the site to five metres AHD in the northeast (360 Environmental, 2022). |
| Soil description | The soil is mapped as the Quindalup South System (211Qu), including:<br>• Quindalup parabolics low (211Qu_D5) – described as low, undulating parabolic sand dunes; and<br>• Quindalup parabolic bowls b (211Qu__D6b) - described as associated with D5 parabolic dunes. |
| Land degradation risk | Soils within the application area have a moderate risk of wind erosion, water erosion, salinity and phosphorus export and a low risk of other land degradation impacts (refer to Table C.5). |
| Surface water | A large perennial waterbody (Government House Lake) is approximately 30 metres southwest of the application area. This is part of the Rottnest Island Lakes system mapped within the Directory of Important Wetlands in Australia (DIWA ID 89). Hypersaline microbial community 1 (Government House Lake, Rottnest) associated with this lake is mapped as a Priority 2 ecological community. |
| Hydrogeography | The application area falls within the Rottnest Island Groundwater Area, as proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act).<br><br>Hydrogeology: Surficial Sediments - Shallow Aquifers (Limestone, calcrete lithology)<br><br>Groundwater salinity: 500-1000 mg/L TDS |
| Flora | There are records of three Priority and no Threatened flora species within the local area, the closest of which to the application area is Priority 1 species *Lachnagrostis nesomytica* subsp. *pseudofiliformis* approximately 0.8 kilometres west from the application area. Of these species, two have been found in similar habitats to the application area.<br><br>Flora surveys conducted within the application area (360 Environmental, 2022b and Focused Vision Consulting, 2022) did not record any Threatened or Priority flora species within the application area. |
| Ecological communities | There are records of one Threatened and seven Priority ecological communities within the local area, the closest of which to the application area is the *Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain (floristic community type 30a as originally described in Gibson et al. (1994))- SCP30a Threatened Ecological Community (SCP 30a TEC) mapped 60 metres northwest of application area. This is the only conservation significant ecological community considered likely to be present within the application area, noting the Priority ecological communities within the local area are associated with saline lakes.<br><br>Vegetation types CpMl and MlAp, comprising 2.27 of the application area, area considered analogous to the SCP30a TEC (Focused Vision Consulting, 2022a). |

| Characteristic | Details |
|---|---|
| Fauna | There are records of 15 threatened, seven priority, one conservation dependent, 19 migratory and two other specially protected fauna species within the local area, the closest of which to the application area is threatened *Calidris ferruginea* and multiple migratory bird species located approximately 0.2 kilometres southeast of the application area. Of these, it is considered that seven may use the application area as habitat, with the remaining species utilising wetland, coastal or marine habitats. |

## C.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*** | | | | | |
| Swan coastal plain | 1,501,221.93 | 579,813.47 | 38.62 | 222,916.97 | 14.85 |
| **Vegetation complex**** | | | | | |
| Heddle vegetation complex (Quindalup Complex, 55) | 54,573.87 | 33,011.64 | 60.49 | 5,994.64 | 10.98 |
| **Local area** | | | | | |
| 10km radius (excluding ocean) | - | - | 75 (approx.) | - | - |

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

## C.3. Fauna analysis table

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

| Species name (common name) | Conservation status | Suitable habitat features? [Y/N] | Distance of closest record to application area (km) | Number of known records in local area | Are surveys adequate to identify? [Y, N, N/A] |
|---|---|---|---|---|---|
| *Falco peregrinus* (Peregrine falcon) | OS | possible | 1.52 | 4 | N |
| *Hesperocolletes douglasi* (Douglas's broad-headed bee) | CR | unlikely | 2.99 | 1 | N |
| *Idiosoma sigillatum* (Swan Coastal Plain shield-backed trapdoor spider) | P3 | possible | 0.93 | 3 | N |
| *Lerista lineata* (Perth slider, lined skink) | P3 | possible | 0.71 | 14 | N |
| *Pseudonaja affinis exilis* (Rottnest Island dugite) | P4 | possible | 0.33 | 111 | N |
| *Setonix brachyurus* (quokka) | VU | Y | 0.4 | 368 | N |
| *Tiliqua rugosa konowi* (Rottnest Island bobtail) | VU | Y | 0.38 | 115 | N |

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

## C.4. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix H), 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 in local area | Number of known records (total) | Are surveys adequate to identify? [Y, N, N/A] |
|---|---|---|---|---|---|---|---|---|
| *Lachnagrostis nesomytica* subsp. *nesomytica* | 1 | N | likely | Y | 2.9 | 2 | 2 | Y |
| *Lachnagrostis nesomytica* subsp. *pseudofiliformis* | 1 | N | Y | Y | 0.8 | 3 | 3 | Y |
| *Lepidium puberulum* | 4 | Y | Y | Y | 0.9 | 1 | 29 | N |
| *Myosotis australis* subsp. *australis* | 4 | Y | Y | Y | 2.7 | 3 | 10 | Y |

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

### C.5. Ecological community analysis table

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

| Community 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) | Are surveys adequate to identify? [Y, N, N/A] |
|---|---|---|---|---|---|---|
| *Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands of the Swan Coastal Plain (floristic community type 30a as originally described in Gibson et al. 1994) | CR | Y | Y | Y | 0.06 | Y |

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

### C.6. Land degradation risk table

| Risk categories | *Quindalup South System (211Qu)* |
|---|---|
| Wind erosion | M2: 30-50% of map unit has a high to extreme wind erosion risk |
| Water erosion | M1: 10-30% of map unit has a high to extreme water erosion risk |
| Salinity | M1: 10-30% of map unit has a moderate to high salinity risk or is presently saline |
| Subsurface Acidification | L2: 3-10% of map unit has a high subsurface acidification risk or is presently acid |
| Flood risk | L1: <3% of the map unit has a moderate to high hazard |
| Water logging | L1: <3% of map unit has a moderate to very high waterlogging risk |
| Phosphorus export risk | M1: 10-30% of map unit has a high to extreme phosphorus export risk |

## Appendix D. 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."*<br>Assessment:<br>The area proposed to be cleared contains a threatened ecological community and is likely to provide habitat for conservation significant fauna. | At variance | Yes<br>*Refer to Sections 3.2.1 and 3.2.2 above.* |

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|---|---|---|
| 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."*<br>Assessment:<br>The area proposed to be cleared is likely to provide habitat for conservation significant fauna species, however in the context of the local area, impacts to these species are unlikely to be significant. | May be at variance | Yes<br>*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."*<br>Assessment:<br>No threatened flora are likely to be present within the area proposed to be cleared. | 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."*<br>Assessment:<br>The area proposed to be cleared contains species indicative of a threatened ecological community. | At variance | Yes<br>*Refer to Section 3.2.2 above.* |
| **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."*<br>Assessment:<br>The extents of the mapped vegetation type and native vegetation in the local area are consistent with the national objectives and targets for biodiversity conservation in Australia. Although the application area may be part of an ecological linkage, in the context of the local area this linkage is not considered to be significant. | Not likely to be 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."*<br>Assessment:<br>The proposed clearing is within the Rottnest Island Class A reserve, however given the zoning of the land within the proposed clearing area the clearing is not considered likely to significantly impact upon the environmental values of this reserve. | Not likely to be at variance | Yes<br>*Refer to Section 3.2.3 above.* |
| **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."*<br>Assessment:<br>Vegetation within the application area is not growing in association with a wetland or watercourse. | Not at variance | No |
| Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."*<br>Assessment:<br>Soils within the application area have a moderate risk of wind erosion, water erosion, salinity and phosphorus export. Noting the extent of the clearing, the | Not likely to be at variance | No |

| Assessment against the clearing principles | Variance level | Is further consideration required? |
|---|---|---|
| applicant's proposed measures to control erosion and that the proposed land use will entail the site surface being sealed or landscaped, the proposed clearing is considered unlikely to result in notable land degradation. | | |
| 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."*<br>Assessment:<br>Noting the applicant's proposed management measures and the extent of the proposed clearing, the proposed clearing is unlikely to impact groundwater quality or water quality within the nearby Government House. | Not likely to be at variance | Yes<br>*Refer to Section 3.2.4 above.* |
| 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."*<br>Assessment:<br>The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding or waterlogging. | Not likely to be at variance | No |

## Appendix E. 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 (extracted from Keighery (1994)) was used to measure the condition of the vegetation proposed to be cleared.

**Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)**

| Condition | Description |
|---|---|
| Pristine | Pristine or nearly so, no obvious signs of disturbance. |
| Excellent | Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species. |
| Very good | Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing. |
| Good | Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing. |
| Degraded | Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing. |
| Completely degraded | The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs. |

## Appendix F. Biological survey information excerpts

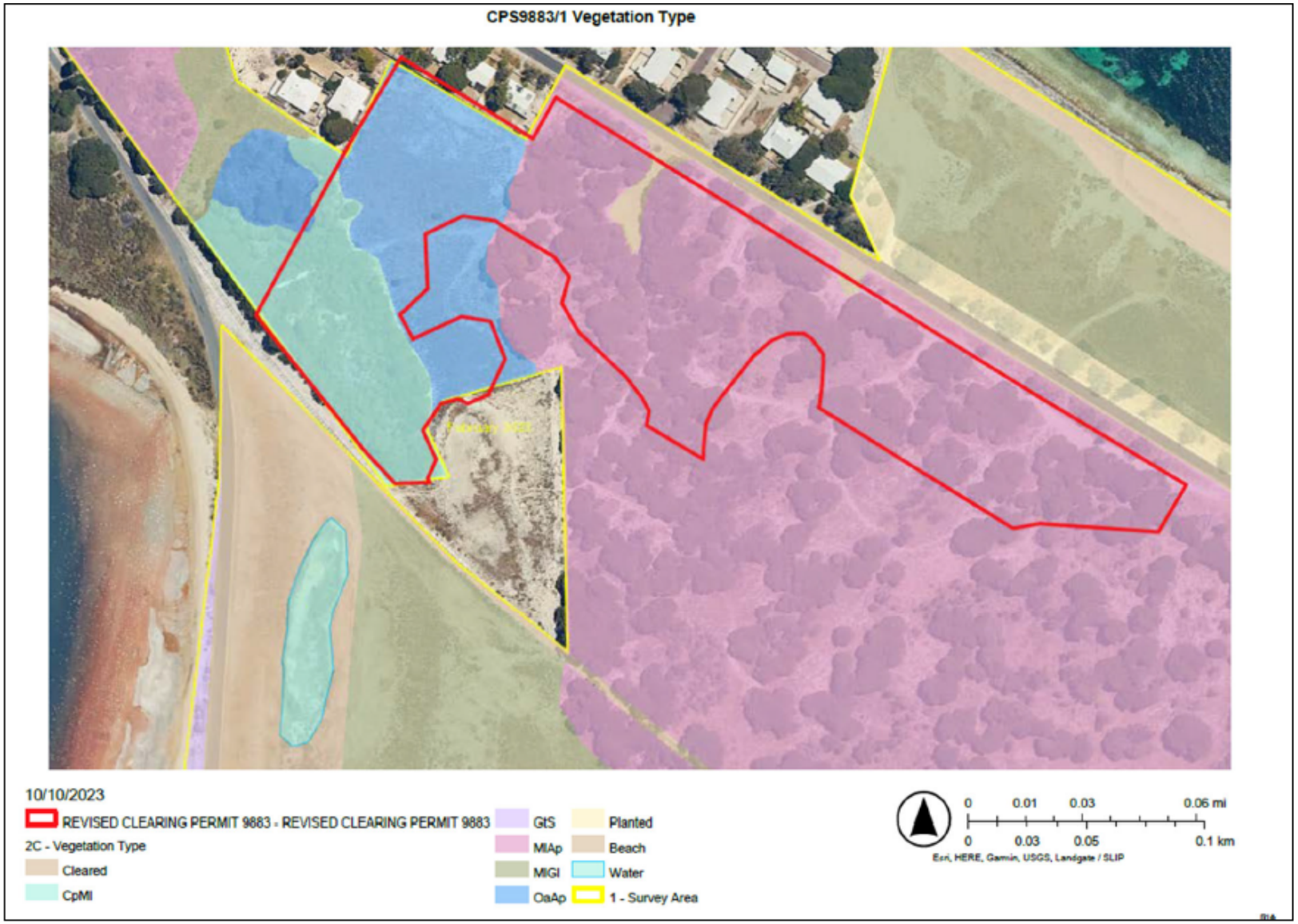


**Figure F-1: Vegetation unit mapping (RIA 2023b, adapted from Focused Vision Consulting, 2022)**

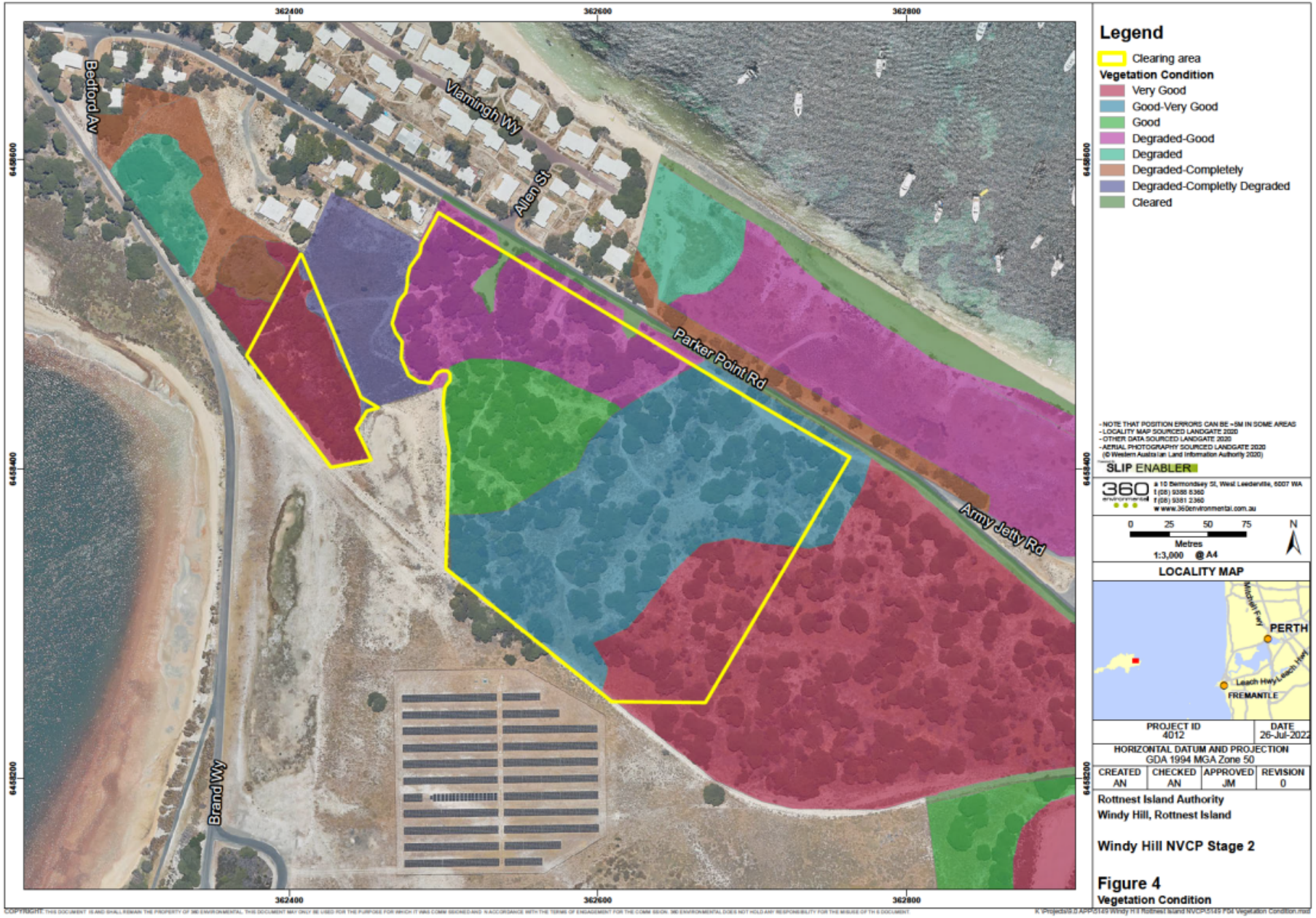


**Figure F-2: Vegetation condition mapping (360 Environmental 2022a, adapted from Focused Vision Consulting, 2022)**


**Figure F-3: Vegetation condition mapping (360 Environmental 2022b)**

## Appendix G. Additional information to justify the necessity and location of the clearing

# 2 Site Selection Process

The settlement area comprises a small portion of the Island, with the process of site selection a complex matter. In the determination of a site for development, RIA considered the following site selection criteria:

- location within the settlement boundary (no buildings permitted to be constructed outside of the settlement boundary) and alignment with the RIMP broader land use planning;
- minimised impact on Environmentally Sensitive areas;
- outside of known State Heritage registered areas;
- proximity to the Lodge Wadjemup redevelopment and Samphire resort to reduce the need for transport between the sites (within walking distance provides congestion management);
- connectivity to sewer infrastructure;
- connectivity to water infrastructure; and
- connectivity to 3 phase power infrastructure.

Several sites were considered, however the site of Parker Point Road was deemed to meet all necessary site selection criteria as set out below. A ranking scale was applied whereby 1 = does not meet criteria, up to 5 = meets the criteria.

*Table 1: Site selection criteria*

| Site | Parker Point Road Current Sites | PFM Yard | Parker Point Road East End | Geordie Bay | Garden Lake |
|---|---|---|---|---|---|
| Within the Settlement boundary | 5 | 5 | 5 | 5 | 5 |
| Minimised impact on Environmentally Sensitive areas | 5 | 1 | 5 | 5 | 1 |
| Impact on heritage areas | 5 | 5 | 5 | 5 | 5 |
| Proximity to Lodge Wadjemup and Samphire resort | 4 | 5 | 4 | 2 | 3 |
| Topography and other constraints | 4 | 5 | 2 | 4 | 3 |
| Availability of sewer | 4 | 3 | 2 | 1 | 1 |
| Availability of water | 4 | 3 | 3 | 3 | 1 |
| Availability of 3 phase power | 4 | 3 | 3 | 3 | 1 |
| **Total Score** | **35** | **30** | **29** | **28** | **20** |

Alternative sites explored but not progressed as part of the staff housing site selection process were as follows:

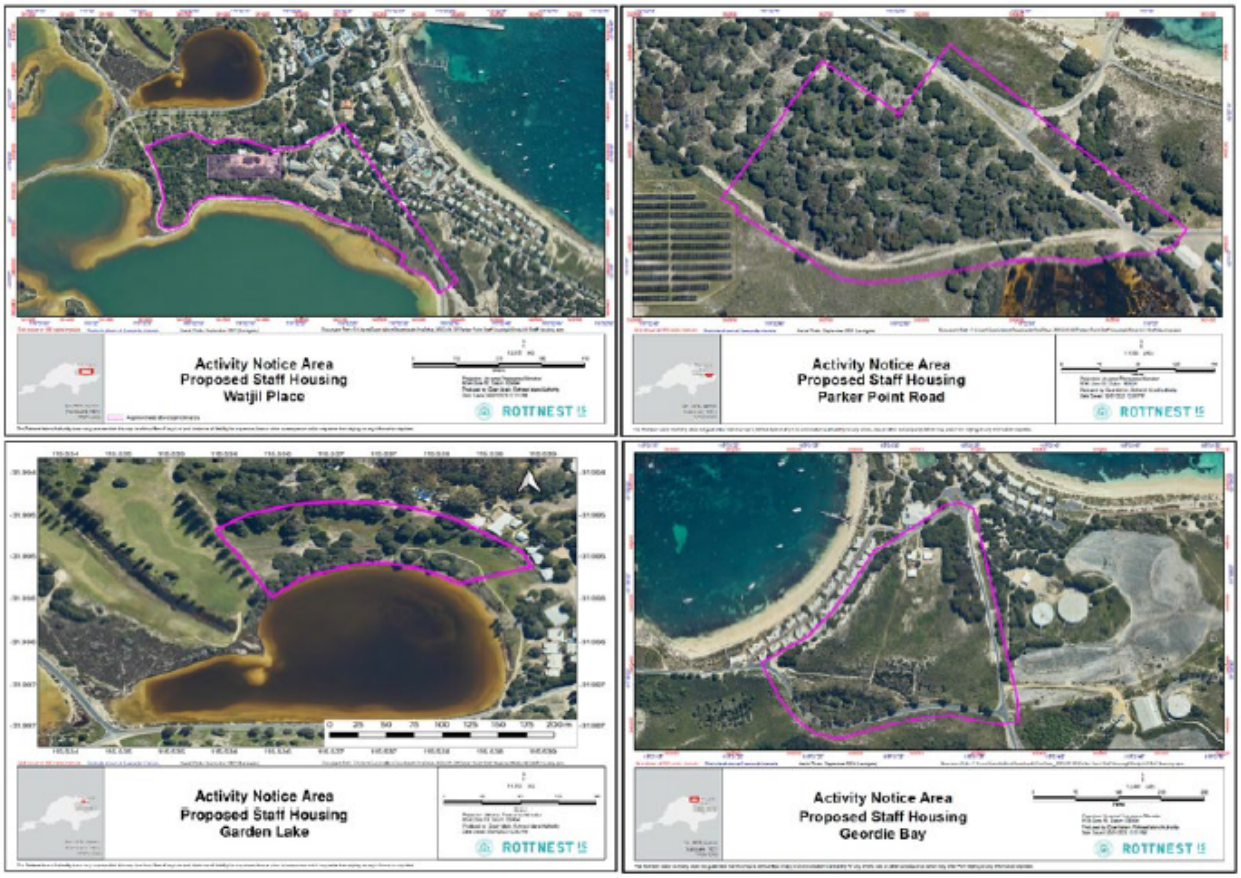


*Figure 2: Alternative sites*

# Appendix H. Offset calculations

| Environmental value to be offset | | | |
|---|---|---|---|
| ***Calculation*** | ***Score (Area)*** | | ***Rationale*** |
| ***Conservation significance*** | | | |
| Description | Vegetation within the application area analogous to SCP30a (Callitris preissii (or Melaleuca lanceolata) forests and woodlands, Swan Coastal Plain) TEC | | The proposed clearing will impact 2.27 hectares of native vegetation that is analogous to SCP30a TEC |
| Type of environmental value | Ecological community | | Callitris preissii (or Melaleuca lanceolata) forests and woodlands, Swan Coastal Plain (floristic community type 30a as originally described in Gibson et al. (1994) (SCP30a) |
| Conservation significance of environmental value | Threatened ecological community - critically endangered | | Endorsed as critically endangered by the WA Minister for Environment |
| Landscape-level value impacted | yes/no | | |
| ***Significant impact*** | | | |
| Description | clearing of vegetation that is analogous to SCP30a TEC | | Native vegetation analogous to a SCP30a TEC is proposed to be cleared for the purpose of building accomodation for staff.<br><br>Surveys undertaken by Focus Vision (2022) and 360 Environmental (2022) identified vegetation types MICpAp and MIAp were represented by Callitris preissii (MICpAp only) and Melaleuca lanceolata, which are the key taxa describing the SCP30a TEC, as well as the common community species Acanthocarpus preissii, and *Trachyandra divaricata. For this reason, these vegetation types were considered analogous to the SCP30a TEC. |
| Significant impact (hectares) / Type of feature | 2.27 | | out of the 2.78 hecatres of the application area, 2.27 ha is representative of SCP30a TEC |
| Quality (scale) / Number | 5.00 | | The condition of the SCP30a vegetation was found to range from 'Very Good' to 'Degraded'. A 'Good' condition rating has been applied for the offset calculation. |
| ***Rehabilitation credit*** | | | |
| Description | 0 | | |
| Proposed rehabilitation (area in hectares) | 0.00 | | |
| Current quality of rehabilitation site / Start number (of type of feature) | 0.00 | | |
| Future quality WITHOUT rehabilitation (scale) / Future number WITHOUT rehabilitation | 0.00 | | |
| Future quality WITH rehabilitation (scale) / Future number WITH rehabilitation | 0.00 | | |
| Time until ecological benefit (years) | 0.00 | | |
| Confidence in rehabilitation result (%) | 0 | | |
| ***Offset*** | | | |
| Description | Revegeation of disturbed areas within Rottnest Island | | A site at Oliver Hill is proposed for rehabilitation. |
| Proposed offset (area in hectares) | 5.77 | | The area of revegetation required to mitigate the significant residual impacts by 100%, based on the assumptions made below. |
| Current quality of offset site / Start number (of type of feature) | 1.00 | | Vegetation on the site is primarily 'Acanthocarpus heath', primarily Acanthocarpus preissii and *Trachyandra divaricata with other native taxa such as Rhagodia baccata, Guichenotia ledifolia and Austrostipa flavescens.<br>The vegetation condition is assessed as generally Degraded, with patches Completely Degraded where native taxa are absent (Keighery 1994 in EPA 2016), however it is not currently considerd the TEC at all due to the lack of the key TEC species Callitris preissii and Melaleuca lanceolata. |
| Future quality WITHOUT offset (scale) / Future number WITHOUT offset | 1.00 | | It is not expected that the quality of native vegetation within the offset site will significantly change over time, in the absence of the offset. |
| Future quality WITH offset (scale) / Future number WITH offset | 6.00 | | It is assumed that with appropriate rehabilitation measures as described in the applicant's revegetation plan (RIA, 2023b), the condition and quality of native vegetation that is analogous to SCP30a within the offset site will be improved, with the potential to increase from a Degraded - Completely Degraded (Keighery, 1994) to Good - Very Good condition. |
| Time until ecological benefit (years) | 10.00 | | It is assumed that the benefits of rehabilitation of native vegetation (primarily the establishment of the key species Callitris preissii and Melaleuca lanceolata) will be available after 10 years . |
| Confidence in offset result (%) | 0.8 | | There is a high to moderate level of confidence that the offset will achieve the predicted result, given rehabilitation will be undertaken in accordance with a revegetation plan and that the RIA have had previous success restoring this TEC. |
| Duration of offset implementation (maximum 20 years) | 20.00 | | The revegetation offset site is currently a Class A reserve for public recreation. RIA are also willing to place a conservation covenant over the area. Therefore, the maximum of 20 years have been applied. |
| Time until offset site secured (years) | 1.00 | | As risk of loss does not change this value does not change the calculation. |
| Risk of future loss WITHOUT offset (%) | 5.0% | | The offset site is currently within a Class A reserve for public recreation (Rottnest Island). Therefore, there is a low risk of loss without the offset. |
| Risk of future loss WITH offset (%) | 5.0% | | The revegetation offset site will remain vested a Class A reserve for public recreation. Therefore, the risk of loss is unchanged with the offset. |
| Offset ratio (Conservation area only) | N/A | | |

# Appendix I. Sources of information

## I.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)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- 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

Restricted GIS Databases used:

- 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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