GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8947/2
Permit Holder:	Western Australia Land Authority T/A Development WA
Duration of Permit:	3 November 2020 to 3 November 2030

ADVICE NOTE
The permit area forms part of the larger Ocean Reef Marina development area, which encompasses approximately 42 hectares of land, of which 16.79 hectares is currently vegetated. As part of Metropolitan Region Scheme (MRS) amendment 1270/41, the rezoning of 26.26 hectares of Bush Forever Site 325 was undertaken to facilitate the development of the Ocean Reef Marina. To counterbalance the impacts of the rezoning of this area, the Permit Holder has secured a 26 hectare portion of Lot 51 on Plan 9474, Carabooda, represented by the area hatched red on attached Plan 8947/2c. This land acquisition combined with rehabilitation of five (5) hectares degraded vegetation adjacent to the development area was determined to counterbalance the environmental impacts to the portion of land excised from Bush Forever Site 325.

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of developing supporting infrastructure including signage and access roads, to facilitate development of breakwaters associated with the Ocean Reef Marina development.

2. **Land on which clearing is to be done**
   Lot 555 on Plan 402198, Iluka
   Lot 1029 on Diagram 57604, Ocean Reef
   Lot 10098 on Plan 216093, Ocean Reef
   Lot 10518 on Plan 216093, Ocean Reef
   Lot 15446 on Plan 40340, Ocean Reef

3. **Area of Clearing**
   The Permit Holder must not clear more than 2.89 hectares of native vegetation within the areas cross-hatched yellow, red and green on attached Plan 8947/2a and Plan 8947/2b.

4. **Period during which clearing is authorised**
   The permit holder must not clear any native vegetation after 3 November 2025.

5. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II – MANAGEMENT CONDITIONS

6. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in 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.

7. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the 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.

8. Wind Erosion Management

The Permit Holder must commence construction no later than one (1) month after undertaking clearing authorised under this Permit.

9. Directional Clearing

The Permit Holder shall conduct clearing in a slow, progressive manner from one direction to the other (e.g. south to north) to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

10. Fauna Management

Within three (3) months of the commencement of clearing authorised by this Permit, the Permit Holder must submit to the *CEO* for approval a Fauna Management Plan, prepared in consultation with relevant authorities, which includes:

(a) a plan for minimising the risk of death and injury to native fauna through vehicle strike along completed roadways;
(b) a plan for the construction or installation of *conservation fencing* along the areas cross-hatched red that abut Bush Forever Site 325 on attached Plan 8947/2a following the completion of construction activities. *Conservation fencing* will allow for fauna movement by being raised at least 15 centimetres from the ground;
(c) a table setting out the Permit Holder's commitments to the Plan's requirements; and
(d) a program for monitoring compliance with the Permit Holder's commitments.

The Permit holder must implement and adhere to the approved Fauna Management Plan following approval by the *CEO*.

11. Revegetation and Rehabilitation

Within twelve (12) months of the commencement of clearing, the Permit Holder must engage an *environmental specialist* to prepare a plan, in consultation with relevant authorities, for the *revegetation* and *rehabilitation* of areas outlined under condition 11(a) and submit the plan to the *CEO* for approval. This plan will be in accordance with DWER's *A Guide to Preparing Revegetation Plans for Clearing Permits* and include, but not be limited to, the following:

(a) specifications of the following areas to be *revegetated* and *rehabilitated* including:
  (i) the area cross-hatched green on Plan 8947/2a, a total of 0.17 hectares, to be *revegetated* to Very Good (Keighery, 1994) condition or better;
  (ii) to appropriately conserve and stockpile the topsoil from the area cross-hatched green on Plan 8947/2a authorised under this permit and reuse it in the revegetation of that area;

(iii) areas cross-hatched light blue on Plan 8947/2a, to be *rehabilitated* to Very Good (Keighery, 1994) condition or better;

(iv) an area of Bush Forever Site 325 that is a total of 3.5 hectares to be *rehabilitated* to Very Good (Keighery, 1994) condition or better, that does not overlap with any rehabilitation required by the negotiated planning outcome and is to be identified in consultation with local community groups (e.g. Joondalup Community Coast Care Forum)*;*

(b) specifying an *optimal time* prior to 30 October 2025 in which the *revegetation* and *rehabilitation* identified under condition 11(a) will commence, by way of:

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

(ii) undertaking a pre-*planting* weed control program where required;

(iii) deliberately *planting* native vegetation and/or *direct seeding* or translocating native vegetation that will result in a similar species composition, structure and density to vegetation types in Very Good (Keighery, 1994) condition occurring in the adjacent vegetation;

(iv) ensuring *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the areas. In the event that *local provenance* material cannot be obtained, *locally endemic* species must be used;

(c) specification to install educational signage to inform reserve users of the *revegetation* and *rehabilitation* activities being undertaken;

(d) specifications to establish a suitable number of 5 x 5 metre quadrat monitoring sites within the areas of *revegetation* and *rehabilitation* specified under condition 11(a), and within adjacent vegetation in Very Good (Keighery, 1994) condition (reference sites), ensuring variations in vegetation types are accounted for;

(e) include quantitative completion criteria*,* based on reference sites, which will capture species richness, density, cover, and structure, and weed and rubbish coverage;

(f) a monitoring program for quadrats specified in condition 11(d) to be undertaken at least annually, and undertaken by an *environmental specialist,* capturing data to inform the completion criteria;

(g) undertake *weed* control activities on an 'as needs' basis to maintain a weed coverage consistent with reference sites established under condition 11(d);

(h) undertake remedial actions for *revegetation* and *rehabilitation* areas where monitoring indicates that these areas have not, or are not likely to meet the completion criteria, as specified under condition 11(e), including:

(i) further *revegetation* and *rehabilitation* by deliberately *planting,* translocating and/or *direct seeding* native vegetation seeds that will result in the minimum targets specified in the completion criteria, ensuring *local provenance* seeds and propagating material are used. In the event that *local provenance* material cannot be obtained, *locally endemic* species must be used;

(ii) undertaking further weed control activities;

(iii) undertaking watering activities; and

(iv) undertaking annual monitoring of each *revegetation* and *rehabilitation* areas, until the completion criteria specified under condition 11(e) are met; and

(i) where a determination by an *environmental specialist* that the completion criteria as specified under condition 11(e) has been met within the areas *revegetated* and *rehabilitated* through monitoring under condition 11(f) of this permit, that determination shall be submitted for the *CEO*'s consideration. If the *CEO* does not agree with the determination, the *CEO* may require the Permit Holder to undertake additional works in accordance with the requirements under condition 11(h).

The Permit Holder must implement and adhere to the approved Rehabilitation/Revegetation Plan following approval by the *CEO*. The Permit Holder must publish on its website the approved Rehabilitation/Revegetation Plan required by Condition 11 within 21 days of the Rehabilitation/Revegetation Plan being approved by the *CEO*.

PART III – RECORD KEEPING AND REPORTING

12. Record keeping

The Permit Holder must maintain the following records in relation to the clearing of native vegetation authorised under this Permit:

(a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
(b) the date(s) that the area was cleared;
(c) the size of the area cleared (in hectares);
(d) the direction that clearing occurred;
(e) purpose for which the clearing was undertaken;
(f) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 6 of this Permit;
(g) actions taken to minimise the risk of the introduction and spread of *dieback* and *weeds* in accordance with condition 7 of this Permit;
(h) actions taken in accordance with the approved Fauna Management Plan, required by condition 10 of this Permit;
(i) actions taken to *revegetate* and *rehabilitate* vegetation in accordance with condition 11 of this permit.

13. Reporting

(a) The Permit Holder must produce the records required under condition 12 of this Permit when required by the *CEO*.
(b) Prior to 30 July 2030, the Permit Holder must provide to the *CEO* a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

conservation fencing means fencing installed for the purpose of conservation, with the intention to exclude unauthorised access without preventing the movement of fauna;

dieback means the effect of *Phytophthora* species on native vegetation;

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;

fill means material used to increase the ground level, or fill a hollow;

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared;

locally endemic means plant species that have been recorded as naturally occurring within the City of Joondalup coastal foreshore;

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 period from May to August for undertaking planting;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

rehabilitate / rehabilitated / rehabilitation means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate / vegetated / revegetation means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

weed/s means any plant -

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

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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

28 January 2021

Plan 8947/2a

Legend

- CPS areas subject to revegetation conditions
- CPS areas subject to rehabilitation conditions
- CPS areas subject to fencing conditions
- CPS areas areas approved to clear
- Land Tenure LGATE -226
- Road Centrelines
- Local Government Authorities

N

0 25 50 75 100 m

1:2594

MGA Zone 50
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8947/2b

Legend

- CPS areas approved to clear
- Land TenureLGATE - 226
- Road Centrelines
- Local Government Authorities

Road Centrelines

- Local Road

N

0 25 50 75 100 m

1:2500

MGA Zone 50
Geocentric Datum of Australia 1994

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GOVERNMENT OF WESTERN AUSTRALIA

Plan 8947/2c

Legend

- Land acquisition area
- Land TenureLGATE - 226
- Road Centrelines
- Local Government Authorities

Image

N

0 50 100 150 200 m

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Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

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 8947/2
Permit type:	Purpose Permit
Applicant name:	Western Australian Land Authority (Development WA)
Application received:	5 January 2021
Application area:	2.89 hectares of native vegetation
Purpose of clearing:	Building or Structure
Method of clearing:	Mechanical Removal
Property:	Lot 555 on Plan 402198, Iluka Lot 15446 on Plan 40340, Ocean Reef Lot 10518 on Plan 216093, Ocean Reef Lot 1029 on Plan 57604, Ocean Reef Lot 10098 on Plan 216093, Ocean Reef
Location (LGA area/s):	City of Joondalup
Localities (suburb/s):	Ocean Reef

1.2. Description of clearing activities

This clearing permit amendment gives effect to the determination of the Minister for Environment (the Minister) to allow the appeals in part (Appeal Number: 050 of 2020).

Decision:	Granted
Decision date:	28 January 2021
Decision area:	2.89 hectares of native vegetation, as depicted in Section 1.4 below.

1.3. Reasons for decision

On 9 October 2020, Clearing Permit CPS 8947/1 was granted to authorise the clearing of up to 2.89 hectares of native vegetation within a 3.05 hectare footprint within Lots 10098 and 10518 on Deposited Plan 216093, Lot 1029 on Diagram 57604, Lot 15446 on Deposited Plan 40340 and Lot 555 on Deposited Plan 402198, Ocean Reef, for the purpose of developing supporting infrastructure for breakwater construction associated with the development of the Ocean Reef Marina. A total of 279 appeals were lodged against the decision to grant Clearing Permit CPS 8947/1.

This clearing permit amendment gives effect to the determination of the Minister for Environment (the Minister) to allow the appeals in part. The Minister has requested the Department of Water and Environmental Regulation (DWER) to:

- remove the reference to clearing permit CPS 8788/1 from condition 10 in relation to the development and implementation of a fauna management plan;
- replace the requirement in condition 11 to rehabilitate the area hatched blue on Plan 8947/1c and the 2.5 hectares portion in excellent condition of the area hatched blue on Plan 8947/1b with a requirement to identify, in consultation with local community groups (e.g. Joondalup Community Coast Care Forum), and

rehabilitate 3.5 hectares of Bush Forever site 325 that would best benefit from such works and which does not overlap with any rehabilitation required by the negotiated planning outcome;

- add a requirement for the applicant to publish on its website the final approved rehabilitation plan required by condition 11; and
- add a requirement to condition 11 for the applicant to appropriately conserve and store topsoil from the area hatched green on Plan 8947/1a and to reuse it in the revegetation of that area.

Given the above, the Delegated Officer decided to grant a clearing permit with modified conditions to reflect the Minister's determination.

1.4. Site map

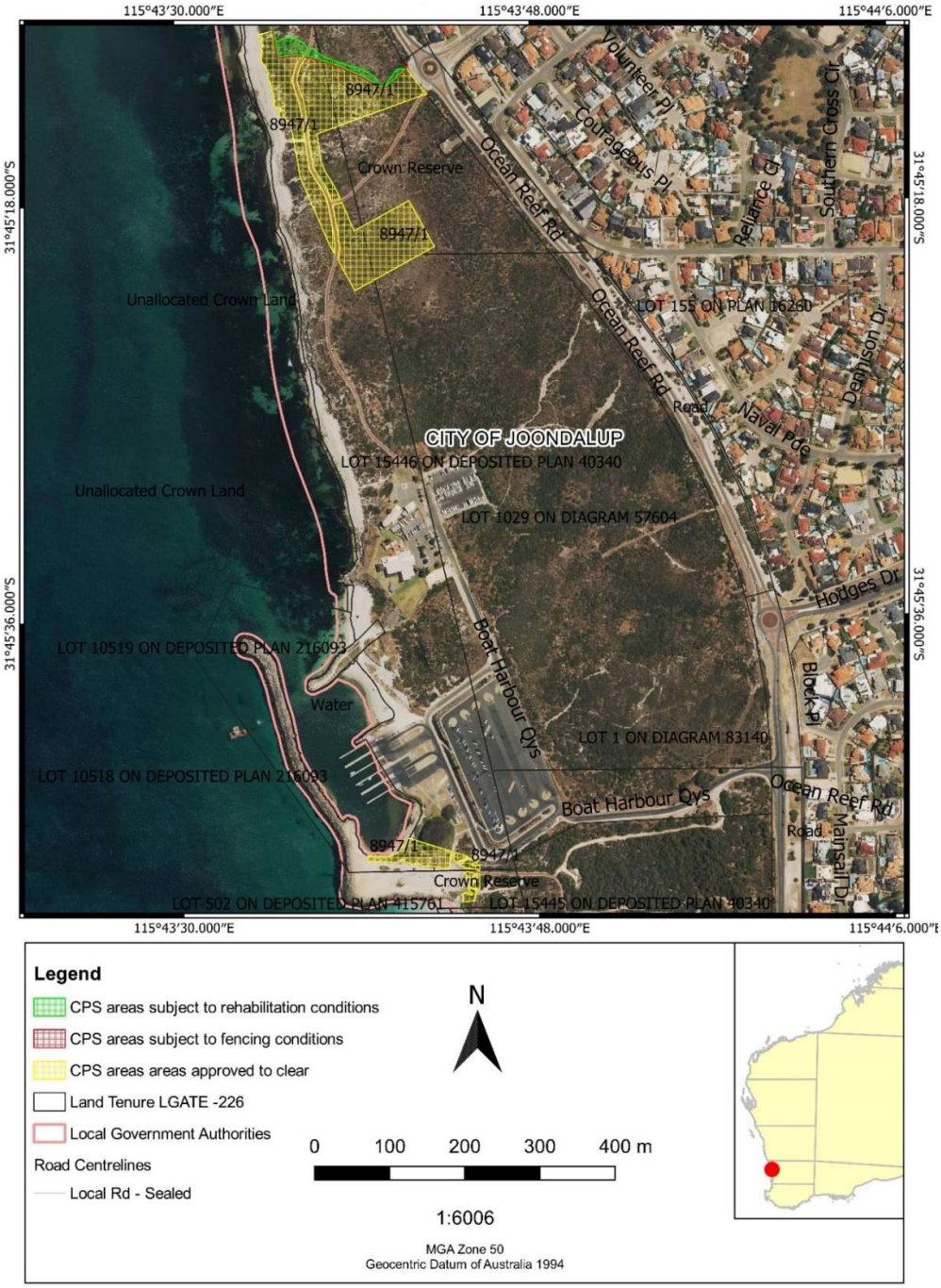

Figure 1. Map of the application area. The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicates the areas to which fencing conditions apply. The areas cross-hatched green indicate areas which will be temporarily cleared and then revegetated.

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, the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle
2. the principle of intergenerational equity
3. 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).

Relevant policies considered during the assessment were:

- *Environmental Offsets Policy* (2011).

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- *Environmental Offsets Guidelines* (August 2014)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016).

3. Assessment of application

3.1. Avoidance and mitigation measures

This amendment is the result of an appeal determination made by the Minister for Environment. Assessment of evidence of avoidance or mitigation measures is unchanged and can be found in the Decision Report prepared for Clearing Permit CPS 8947/1 (DWER, 2020).

3.2. Assessment of application against clearing principles

This amendment is the result of an appeal determination made by the Minister for Environment.

The assessment against the clearing principles outlined in Schedule 5 of the *Environmental Protection Act 1986* is unchanged and can be found in the Decision Report prepared for Clearing Permit CPS 8947/1 (DWER, 2020).

The Minister determined that the proposed clearing is at variance with clearing principles (a), (b), (e), (g) and (h), based on advice prepared by the Appeals Convenor (Office of the Appeals Convenor, 2020).

3.3. Relevant planning instruments and other matters

The assessment against planning instruments and other matters is unchanged and can be found in the Decision Report prepared for Clearing Permit CPS 8947/1 (DWER, 2020).

Appendix A – Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment.

1. Site characteristics

Site characteristic	Details
Local context	The proposed clearing area is part of an expansive tract of native vegetation in the local area. The area surrounding the proposed development is part of Bush Forever Site 325, and the majority of the proposed clearing area was part of Bush Forever until the Metropolitan Region Scheme Amendment 1270/41, which excised a 26.26 hectares portion of Bush Forever to facilitate the development of Ocean Reef Marina. A total of 0.17 hectares of the clearing proposed under this application is still within the Bush Forever 325 site. The proposed clearing area is part of an important ecological linkage of coastal vegetation in the Perth Metropolitan Region. Spatial data indicates the local area (10 km radius of the proposed clearing area) retains approximately 21% of the original native vegetation cover.
Vegetation description	A vegetation survey undertaken by Mattiske Consulting (2013) and reassessed by Strategen-JBS&G in 2019 indicate the vegetation within the proposed clearing area consists of six vegetation communities, including two heathlands, three shrublands and a small area of Tuart Woodland (Mattiske Consulting, 2013; Strategen-JBS&G, 2020b). Approximately 81 per cent of the proposed clearing area is mapped as vegetation community H1, which is described as a low open scrubland to heath of *Acacia cyclops, Acacia rostellifera, Spyridium globulosum* and *Templetonia retusa* over *Scaevola crassifolia, Olearia axillaris, Myoporum insulare* and *Rhagodia baccata* subsp. *dioica* over *Acanthocarpus preissii, Threlkeldia diffusa, Senecio pinnatifolius* and *Frankenia pauciflora* over *Lepidosperma gladiatum, Spinifex longifolius, Sporobolus virginicus* and mixed exotics on white sands or light grey sands of fore- and primary dunes with frequent limestone outcropping. This is consistent with the mapped vegetation type for the proposed clearing area: the Quindalup Complex - 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).
Vegetation condition	A vegetation survey undertaken by Mattiske Consulting (2013) and confirmed by Strategen-JBS&G in 2019 indicate the vegetation within the proposed clearing area ranges from completely degraded to excellent condition (Keighery, 1994), with the majority of the proposed clearing area (~83%) in good to very good condition (Mattiske Consulting, 2013), described as: • 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. The full Keighery condition rating scale is provided in Appendix B.
Soil description	Two soil types are mapped within the proposed clearing area (Schoknecht *et al*., 2004):

Site characteristic	Details
	• Quindalup South youngest dune Phase (211Qu_Q4): the youngest phase. Irregular dunes with slopes up to 20%. Loose pale brown calcareous sand with no soil profile development. • Quindalup South second dune Phase(211Qu_Q2) The second phase. A complex pattern of dunes with moderate relief. Calcareous sands have organic staining to about 20 cm, passing into pale brown sand; some cementation below 1 m. Due to the close proximity to the coastline, some of the proposed clearing area does not have a mapped soil type. However, based on adjacent soil mapping it is assumed that these areas form part of the Quindalup South youngest dune Phase.

Land degradation risk	The proposed clearing area has the following land degradation risks (van Gool *et al.* 2005):
	
	• Low risk of:
	  ○ Flooding;
	  ○ Salinity;
	  ○ Subsurface acidification; and
	  ○ Waterlogging;
	• Moderate risk of:
	  ○ Phosphorus export; and
	  ○ Water erosion; and
	• High to extreme risk of:
	  ○ Water repellence; and
	  ○ Wind erosion

Waterbodies	The desktop assessment and aerial imagery indicated that the proposed clearing area does not intersect any mapped watercourses or wetlands. The application area is in close proximity to the coastline, with coastal foredunes proposed to be cleared. However, impacts to the marine component of the Ocean Reef Marina Development are being addressed through a Part IV EPA assessment.
Conservation areas	The majority of the proposed clearing area was previously part of Bush Forever Site 325 until the gazettal of Metropolitan Region Scheme Amendment 1270/41, which rezoned areas to facilitate the development of the Ocean Reef Marina, and included the removal of 26.26 hectares of Bush Forever, of which 16.79 hectares is native vegetation (WAPC, 2016). The proposed clearing area includes 0.17 hectares of vegetation that was not excised under the MRS scheme and is still listed as Bush Forever. Bush Forever Site 325 is approximately 10 kilometres of semi-continuous coastal vegetation from Hillarys to Burns Beach. The northern end of Bush Forever Site 325 is located approximately 380 metres from Bush Forever Site 322, which forms a further four (4) kilometres of coastal native vegetation. Although majority of the proposed clearing area is no longer part of the Bush Forever site, the proposed clearing may impact this adjacent conservation area through weed and disease invasion, unauthorised access, accidental clearing, and erosion impacts.
Climate and landform	The landform within the proposed clearing area is typical of the coastal landscape in the local area, with undulating foredunes and steep cliffs adjacent to the coastline in some areas. Elevation ranges from 0 m Australian height Datum (ADH) to 20 m ADH, with a high dune system located within the norther portion of the proposed clearing area. Climate within the Perth Metropolitan Region is characterised by a Mediterranean climate, with hot dry summers and mild wet winters. Wind speeds, an important factor

Site characteristic	Details
	in coastal landscapes, are typically from the southwest or northwest, with high wind speeds associated with winter storms.

Appendix B – 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.

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 C– Databases and References

GIS datasets

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

- Aboriginal Heritage Places (DPLH-001)
- Black Cockatoo Breeding Sites – Buffered (DBCA-063)
- Cadastre Address (LGATE-002)
- Carnaby's Cockatoo Areas requiring investigation as feeding habitat in the Swan Coastal Plain (SCP) IBRA Region (DBCA-057)
- 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)
- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)
- Groundwater Salinity Statewide (DWER-026)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Regional Scheme – Special Areas (DPLH-022)
- Soil and Landscape Mapping – Best Available
- Soil and Landscape Quality – Wind Erosion Risk (DPIRD-016)
- Soil and Landscape Quality – Water Erosion Risk (DPIRD-013)
- Soil and Landscape Quality – Waterlogging Risk (DPIRD-015)
- Soil and Landscape Quality – Water Repellence Risk (DPIRD-014)
- Soil and Landscape Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil and Landscape Quality – Phosphorus Export Risk (DPIRD-010)
- Soil and Landscape Quality – Salinity Risk (DPIRD-009)

Restricted GIS Databases used:

- Black Cockatoo Roost Sites
- Black Cockatoo Records
- 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)

References

Department of Water and Environmental Regulation (DWER) (2020). CPS 8947/1 Decision report and permit. Available at: ftp://ftp.dwer.wa.gov.au/permit/8947/

Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske Consulting (2013) Level 2 Flora and Vegetation Survey of the Proposed Ocean Reef Marina Survey Area, report prepared for Strategen, December 2013.

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