



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 8975/2
File Number: DWERVT6157~6
Duration of Permit: From 23 October 2020 to 23 April 2028

PERMIT HOLDER

City of Joondalup

LAND ON WHICH CLEARING IS TO BE DONE

Lot 500 on Deposited Plan 417015, Hillarys
Lot 15445 on Deposited Plan 40340, Hillarys

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 0.018 hectares of native vegetation within the areas cross-hatched yellow on attached Plan 8975/2(a), Plan 8975/2(b), and Plan 8975/2(c).

CONDITIONS

1. Period within which clearing is authorised

The Permit Holder shall not clear any native vegetation after 23 April 2023.

2. 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.

3. 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 *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared;
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared; and
- (d) ensure that personnel carrying out the works are trained in *appropriate plant disease hygiene procedures* and have access to any *equipment or materials needed for plant disease hygiene*.

4. Revegetation (Bush Forever mitigation)

- (a) The Permit Holder shall establish and maintain native vegetation within the areas cross-hatched red on attached Plan 8975(d) and Plan 8975(e) in accordance with the following conditions:
 - (i) the *revegetation* shall be established and maintained to an average planting density of four stems per square metre;
 - (ii) the *revegetation* composition shall include vegetation resistant to wind erosion, the species authorised to be cleared under this Permit and/or resemble pre-clearing vegetation types in that area;

- (iii) the *revegetation* is to commence before 23 April 2023.
- (b) Within twelve months of undertaking *revegetation* in accordance with condition 4(a) of this Permit, the Permit Holder must:
 - (i) determine the species composition, structure and density of the *revegetation*; and
 - (ii) where, in the opinion of an *environmental specialist*, the composition, structure and density determined under condition 4(b)(i) of this Permit will not result in a similar composition, structure and density to that set out in condition 4(a) of this Permit, the Permit Holder must undertake additional *planting* or *direct seeding* of native vegetation to achieve this outcome.

5. Vegetation management - fencing

The Permit Holder shall:

- (a) within 12 months of the clearing authorised under this Permit, construct an appropriately designed fence within the areas cross-hatched red on attached Plan 8975/2(f) and Plan 8975/2(g) to protect adjacent vegetation by excluding pathway users.
- (b) The Permit Holder shall inspect the fence constructed in accordance with condition 5(a) of this Permit every 12 months for the duration of this Permit to ensure the fence is protecting adjacent vegetation by excluding pathway users.
- (c) Where the Permit Holder identifies that the fence constructed in accordance with condition 5(a) of this Permit is not protecting adjacent vegetation by excluding pathway users, the Permit Holder shall repair the fence.

6. Fauna management - direction of clearing

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

7. Records to be kept

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 of the clearing;
- (e) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 2 of this Permit;
- (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 3 of this Permit;
- (g) actions taken to protect adjacent vegetation by the erection and maintenance of appropriate fencing in accordance with condition 5 of this Permit, including the date in which the fence was constructed and/or maintained; and
- (h) in relation to the *revegetation* of areas in accordance with condition 4 of this Permit:
 - (i) the location of the *revegetation*, 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;
 - (ii) a description of the *revegetation* activities undertaken;
 - (iii) the species composition, structure and density of *revegetation*; and
 - (iv) a copy of the *environmental specialist's* report.

8. Reporting

- (a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
 - (i) of records required under condition 7 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.

- (b) If no clearing authorised under this Permit has been undertaken, a written report confirming that no clearing under this Permit has been undertaken, must be provided to the *CEO* on or before 30 June of each year.
- (c) Prior to 23 January 2028, the Permit Holder must provide to the *CEO* a written report of records required under condition 7 of this Permit where these records have not already been provided under condition 8(a) of this Permit.

Definitions

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

appropriate plant disease hygiene procedures means documented procedures that include the inspection and cleaning of vehicles, machinery, equipment, tools and footwear.

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

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

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist means a person who holds a tertiary qualification in environmental science or equivalent, and has 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;

equipment or materials needed for plant disease hygiene means plastic tubs, brushes, plastic bags, alcohol wipes and drums, backpacks or spray bottles with 70% ethanol or methylated spirits in 30% water; or 20% household bleach (with 5% active ingredient) in 80% water; or quaternary ammonium disinfectant diluted according to manufacturer's directions.

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

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

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

regeneration means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

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 Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

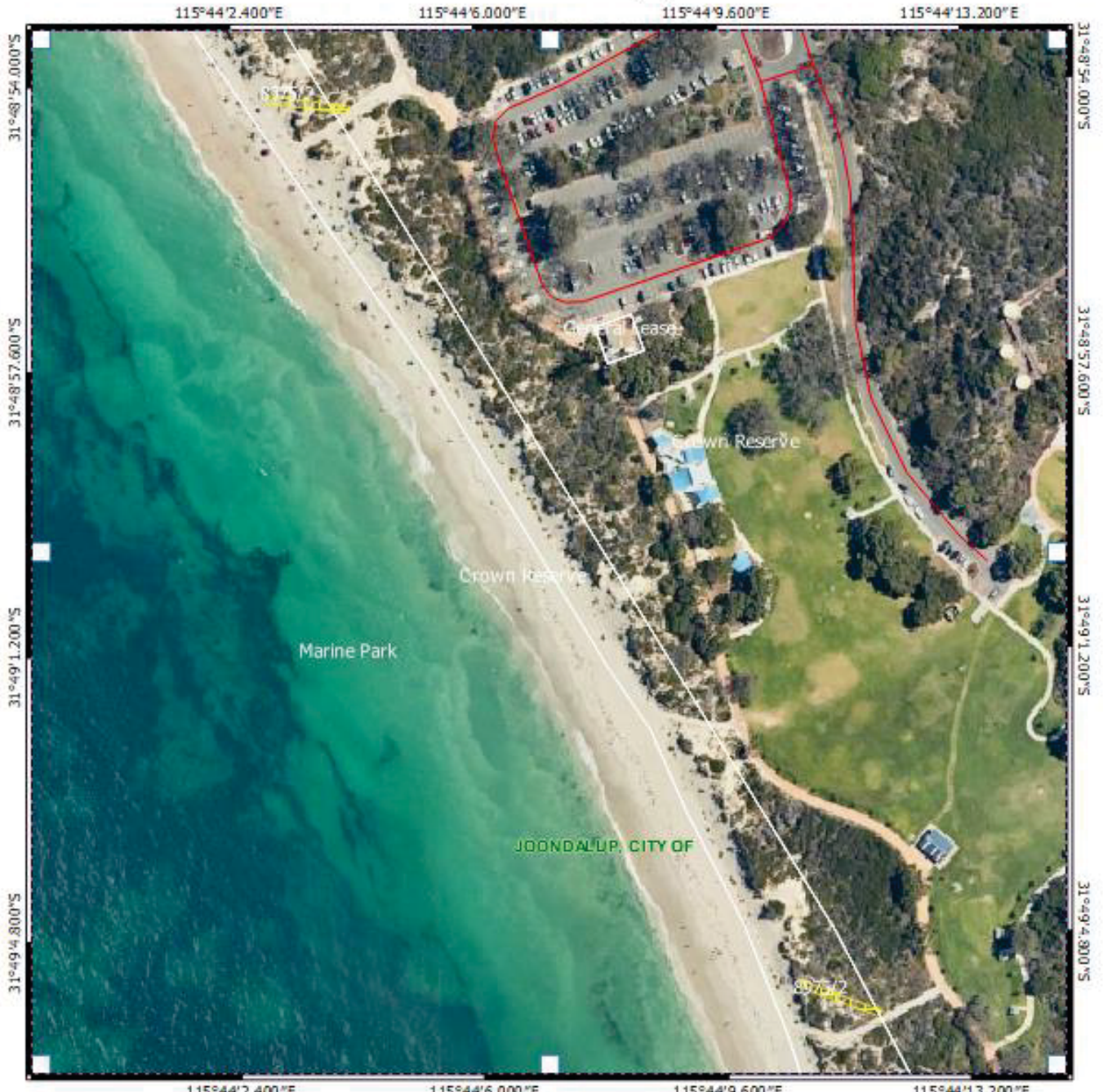


Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

30 June 2021

Plan 8975/2(a)



CPS layers

CPS areas approved to clear

base layers

- Road Centrelines
- Cadastre - LGATE 218
- Local Government Authority

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GOVERNMENT OF
WESTERN AUSTRALIA

MGA Zone 50
Geocentric Datum of Australia 1994

Plan 8975/2(b)



CPS layers

 CPS areas approved to clear

base layers

Cadastre - LGATE 218

Local Government Authority



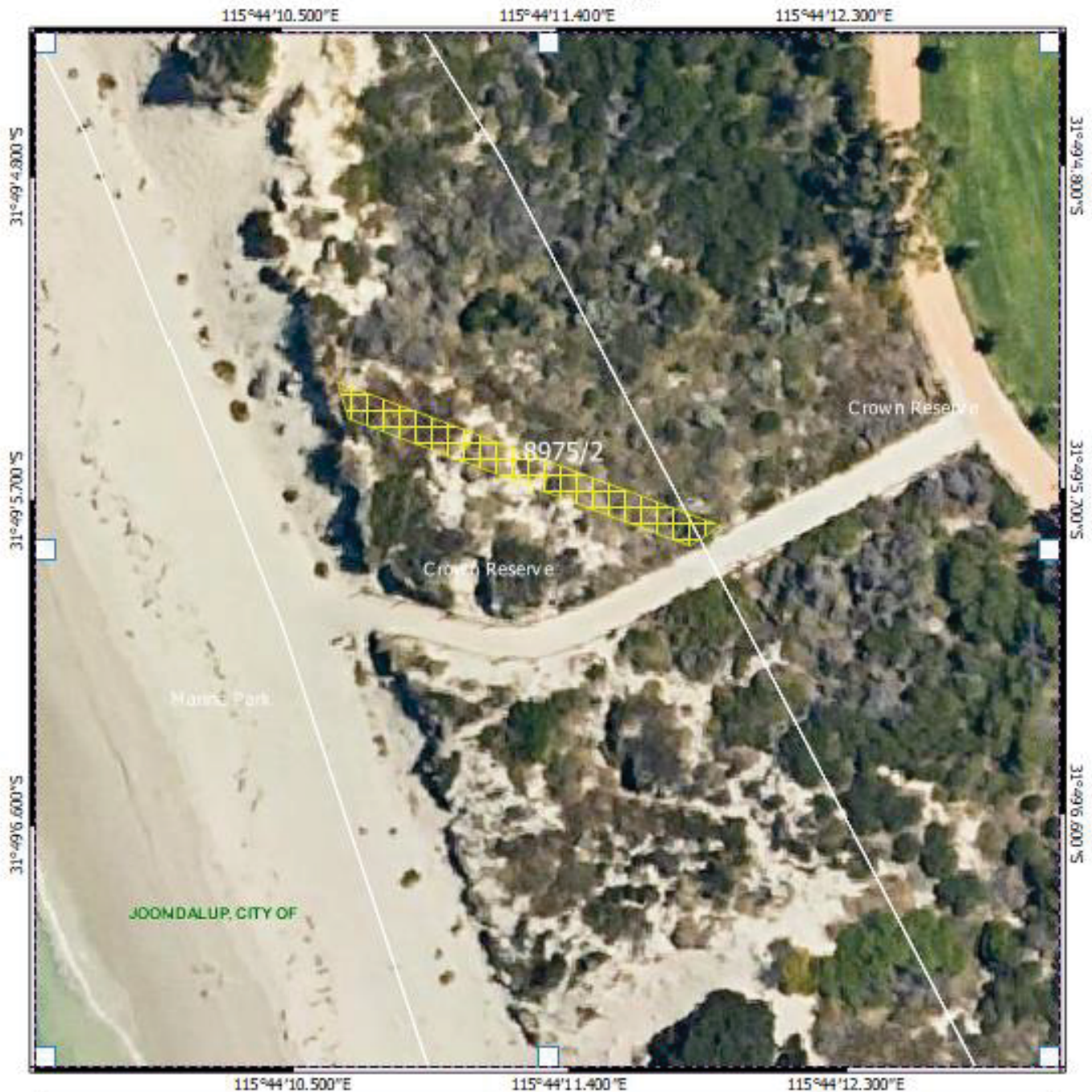
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MGA Zone 50
Geocentric Datum of Australia 1994

Plan 8975/2(c)



CPS layers

-  CPS areas approved to clear


base layers

- Cadastre - LGATE 218
- Local Government Authority

MGA Zone 50
Geocentric Datum of Australia 1994

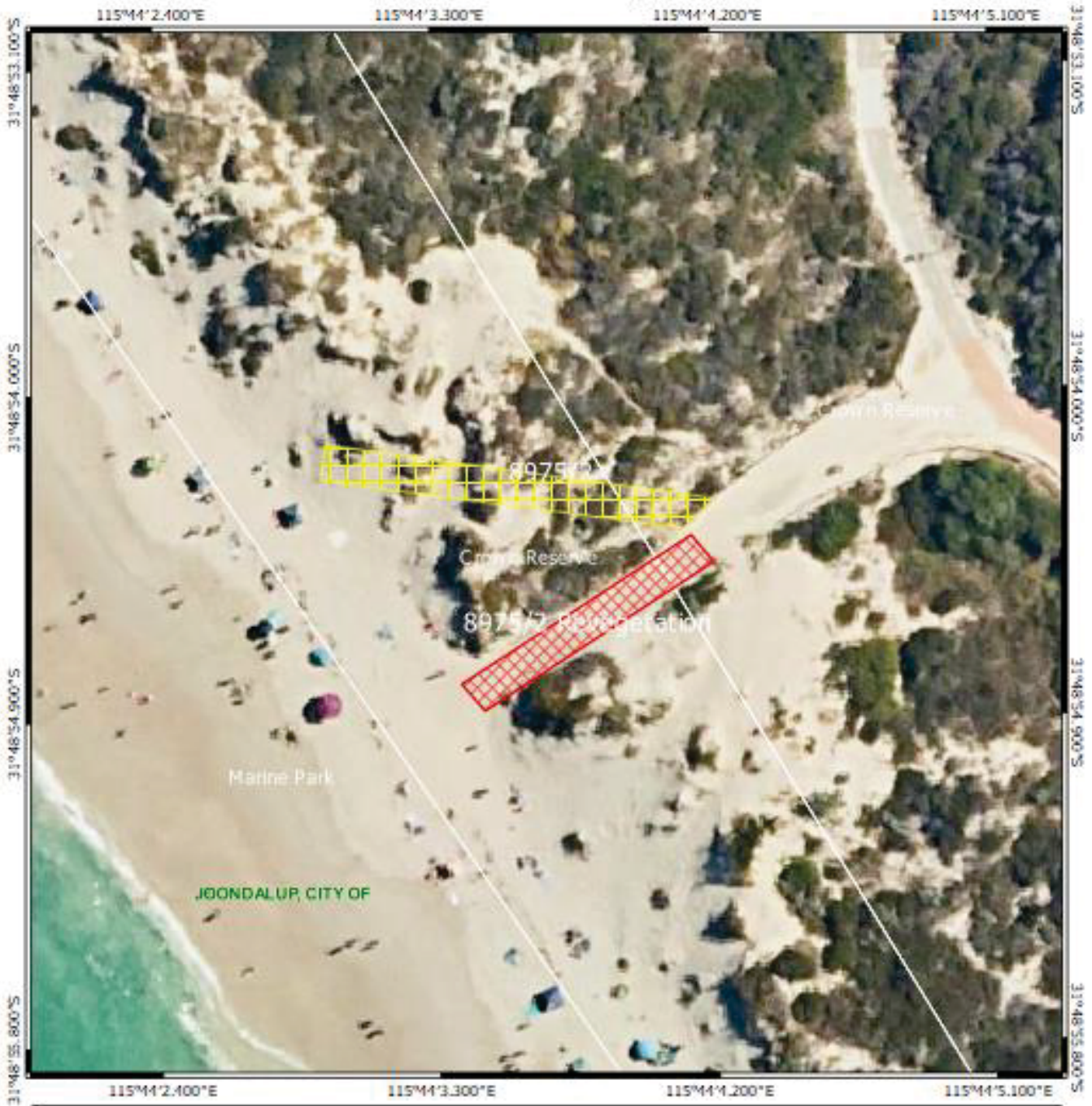
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Plan 8975/2(d)



- CPS layers**
-  CPS areas approved to clear
 -  CPS 8975-2 - Revegetation [2]
- base layers**
- Cadastre - LGATE 218
 - Local Government Authority



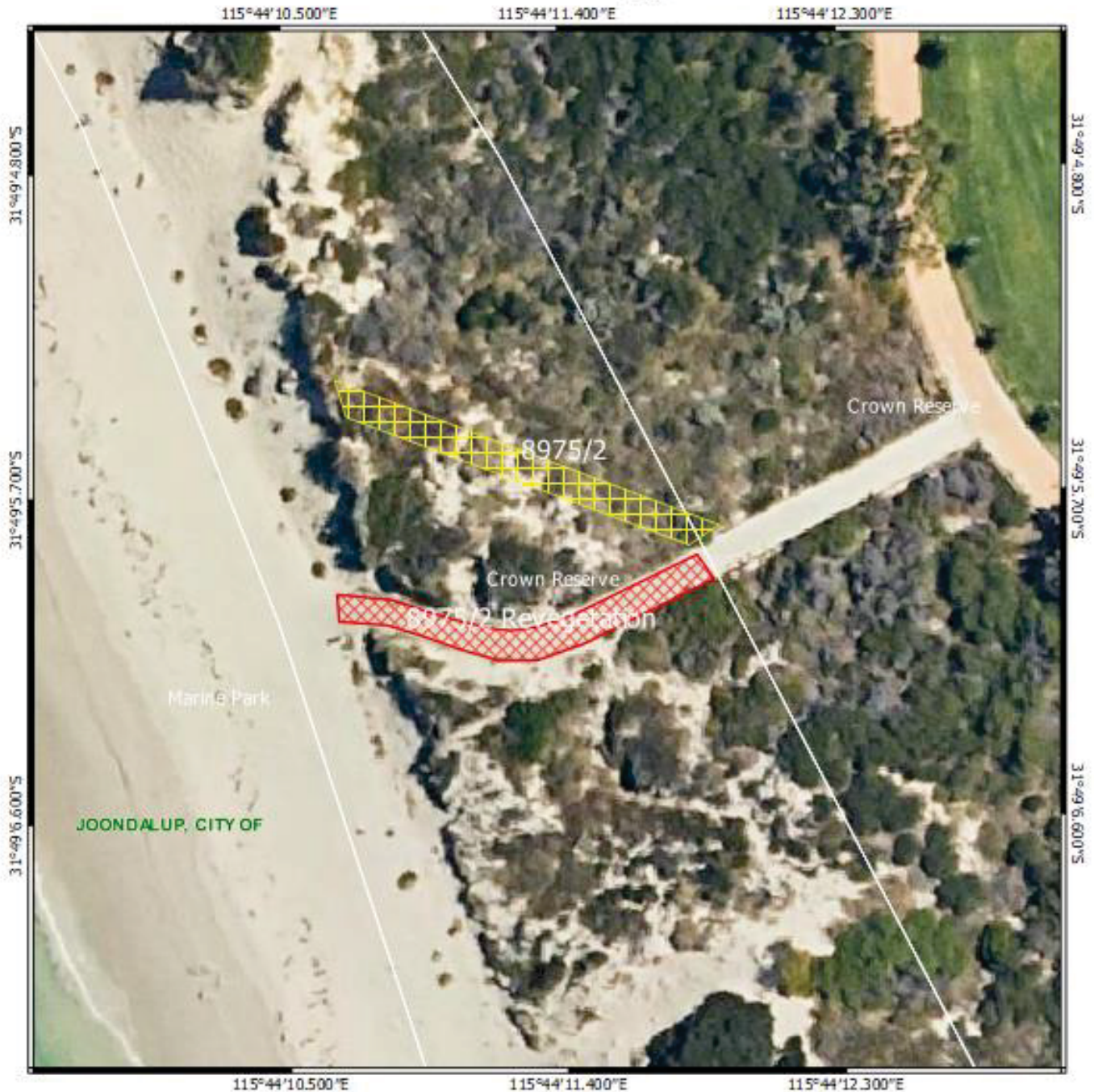
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Plan 8975/2(e)



CPS layers

- CPS areas approved to clear
- CPS 8975-2 - Revegetation [2]

base layers

- Cadastre - LGATE 218
- Local Government Authority

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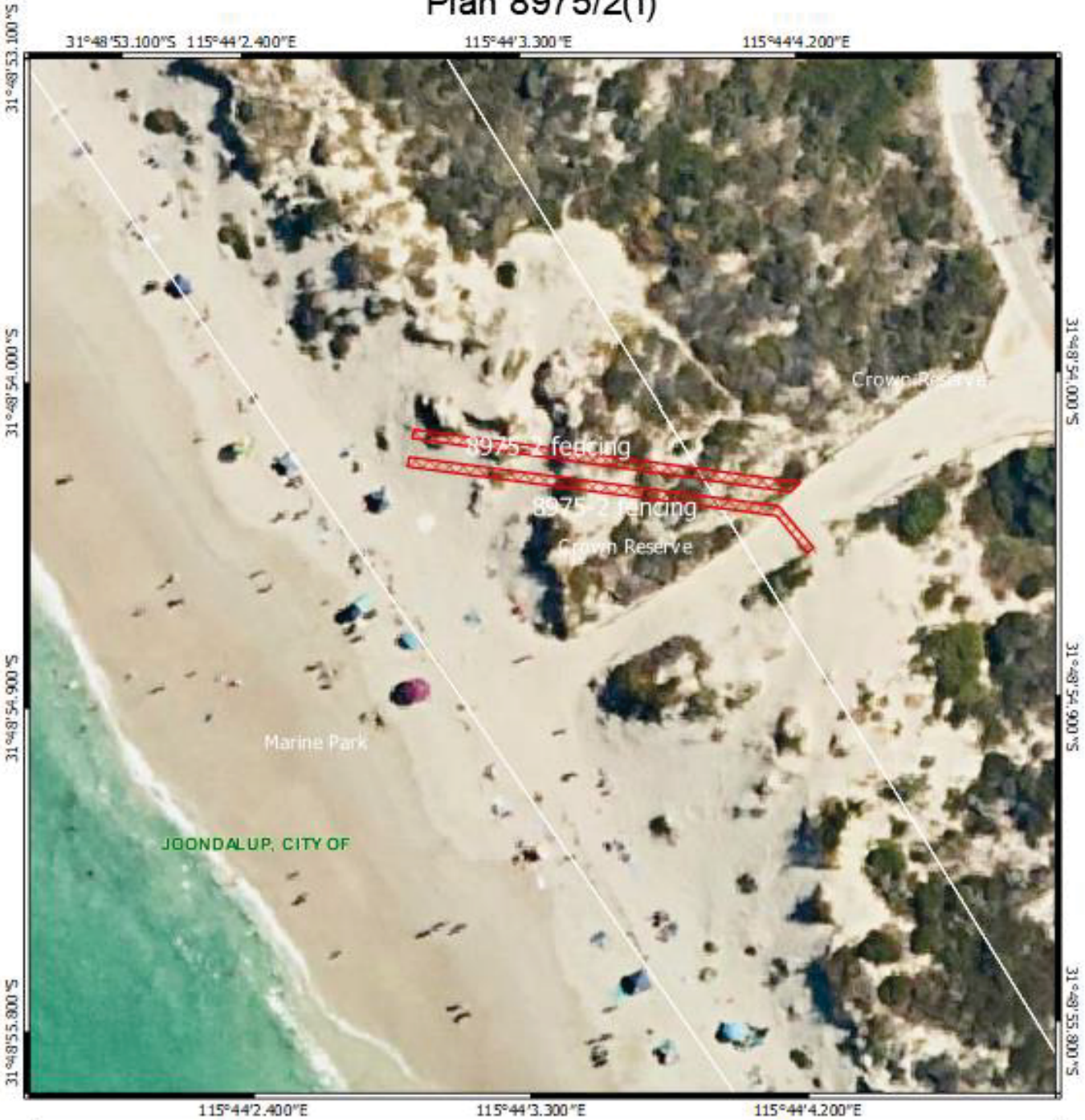
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Geocentric Datum of Australia 1994

Plan 8975/2(f)



 CPS 8975-2 - Fencing

base layers

Cadastre - LGATE 218
Local Government Authority



Officer delegated under section 20 of the Environmental Protection Act 1986

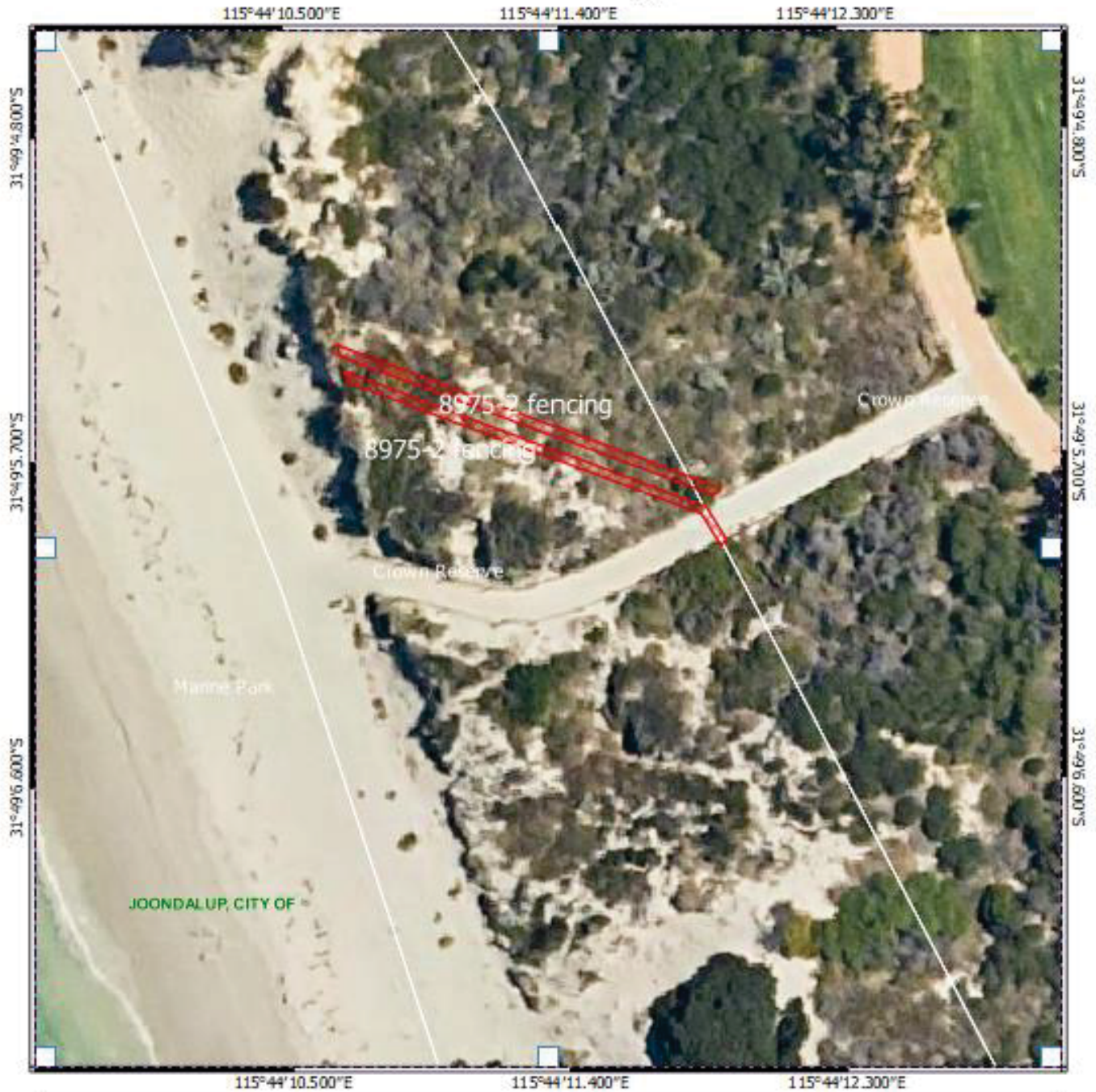



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MGA Zone 50
Geocentric Datum of Australia 1994

Plan 8975/2(g)



 CPS 8975-2 - Fencing

base layers

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Local Government Authority



Officer delegated under section 20 of the
Environmental Protection Act 1986

MGA Zone 50
Geocentric Datum of Australia 1994



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Clearing Permit Decision Report

1. Application details and outcome

1.1 Permit application details

Permit number:	CPS 8975/2
Permit type:	Area permit
Applicant name:	City of Joondalup
Application received:	23 July 2020
Proposed clearing:	0.018 hectares (ha) of native vegetation (as revised)
Purpose of clearing:	Upgrade beach access pathways
Method of clearing:	Mechanical removal
Property:	Lot 500 on Deposited Plan 417015 and Lot 15445 on Deposited Plan 40340
Location (LGA area/s):	City of Joondalup
Localities (suburb/s):	Hillarys

1.2 Description of clearing activities

The application form states that the total area of clearing is 0.016 ha of native vegetation to upgrade two beach access pathways by re-aligning their direction to the north-west to reduce wind erosion. On digitising, the extent of proposed clearing was amended to 0.018 ha. The extent of the proposed clearing is indicated in Figure 1 (see Section 1.5).

1.2 Decision on application

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Decision:	Granted
Decision date:	30 June 2021
Decision area:	0.018 ha (see Figure 1, Section 1.5)

1.4 Reasons for decision

On 30 September 2020, Clearing Permit CPS 8975/1 was granted to clear up to 0.018 hectares of native vegetation (as revised) within Lot 15445 on Deposited Plan 40340 and Lot 500 on Deposited Plan 417015, Hillarys, for the purpose of upgrading beach access pathways. One appeal was lodged against the conditions of the permit.

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

- 1) make clear that the revegetation objectives must include controlling wind erosion;
- 2) add a requirement for the permit holder to ensure that personnel carrying out the works are trained in appropriate plant disease hygiene procedures and have access to any equipment or materials needed for plant disease hygiene; and
- 3) require appropriate fencing to be installed and maintained.

Given the above, the Delegated Officer decided to grant a clearing permit to reflect the Ministers determination. The additional conditions as described above have been included in the permit. The assessment has not changed since the assessment for CPS 8975/1.

1.5 Site map

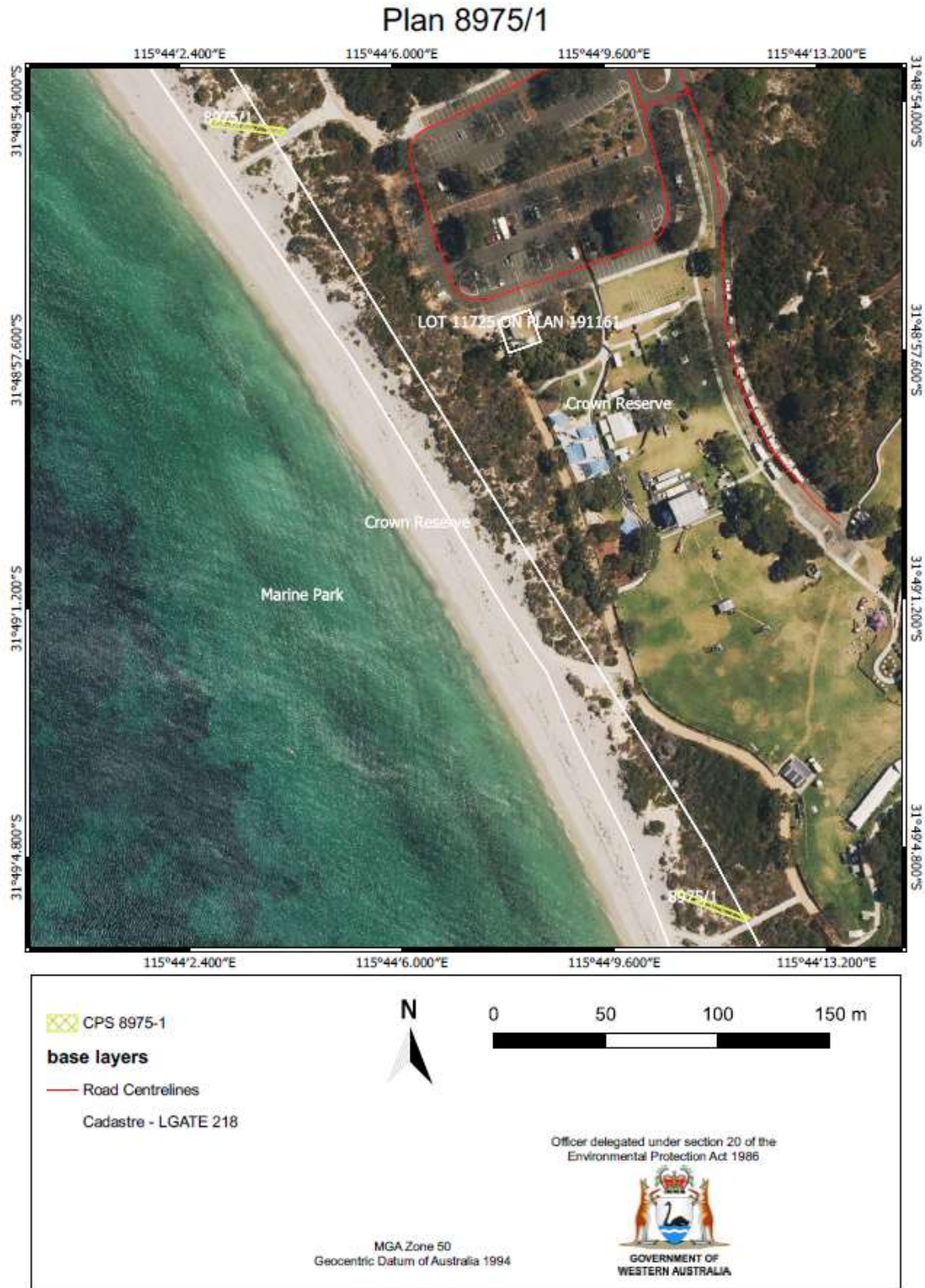


Figure 1: Map of areas approved to clear. The two areas cross-hatched yellow (north and south) indicates the area authorised to be cleared under the granted clearing permit.

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

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA)
- *Conservation and Land Management Act 1984* (WA)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- *Rights in Water and Irrigation Act 1914*.

Relevant policies considered during the assessment were:

- State Planning Policy 2.8: *Bushland Policy for the Perth Metropolitan Region* (2010)¹
- *WA Environmental Offsets Policy* (2011)²

The key guidance documents which inform this assessment are:

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

3. Detailed assessment of application

3.1 Avoidance and mitigation measures

The application form states that alternatives that would avoid or minimise the need for the proposed clearing have not been considered. However, the applicant has advised that the portions of the pathways that would be no longer used following re-alignment will be appropriately revegetated (City of Joondalup 2020c; 2020d), and that the newly created pathways will be appropriately fenced to protect adjacent vegetation.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to mitigate the potential impacts of the proposed clearing on environmental values.

3.2 Assessment of environmental impacts

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B), and considered the extent to which the impacts of the proposed clearing (as revised) present a risk to environmental values and whether these can be managed to be environmentally acceptable. The assessment against the clearing principles is contained in Appendix C.

This assessment identified that the impacts of the proposed clearing present a risk to flora and fauna habitat (including conservation-significant species), vegetation considered to be significant as a remnant in an extensively cleared area, and adjacent vegetation within a Bush Forever area. 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 Fauna

Assessment

The vegetation proposed to be cleared comprises predominantly low mixed shrubland over very open spinifex grassland, with some mixed *Acacia* shrubland (see Appendix B; Appendix E). The application area is within a broader remnant that has a part in maintaining connectivity between remnants in the local area, and is within one of a number of 'Gnangara Mound' ecological linkages that are mapped within the local area. The application area is approximately 34 metres (m) from the coastline.

A total of 20 threatened, eight priority, one 'conservation dependent' and one 'other specially protected' fauna, and 15 fauna protected under an international agreement, have been recorded in the local area. In forming a view on the likelihood of these species occurring within the application area, the preferred habitat types and typical home ranges of these species and their recorded proximity to the application area were considered, along with the type

¹ Available at: <https://www.dplh.wa.gov.au/spp2-8>

² Available at: <http://www.epa.wa.gov.au/policies-guidance/wa-environmental-offsets-policy-2011-and-guidelines>

and condition of the vegetation within the application area. Also considered in determining likelihood were the findings of the flora, fauna and fungi survey³.

The proposed clearing is likely to impact on suitable habitat for five threatened, five priority and one 'other specially protected' fauna recorded in the local area, which have been recorded within close proximity to the application area and/or from the same mapped vegetation type. This includes:

- Carnaby's black cockatoo (*Calyptorhynchus latirostris*; Endangered): Published literature sets out the habitat preferences of this species, which includes Proteaceous woodlands and shrublands and some non-native plants for foraging (Department of Parks and Wildlife, 2013; Department of Sustainability, Environment, Water, Population and Communities, 2012; Environmental Protection Authority, 2019; Johnstone et al., 2011; Shah, 2006; Valentine and Stock, 2008). The flora, fauna and fungi survey concluded that this species is likely to occur within the surveyed area. The nearest record is approximately 1.1 km from the application area. Noting the proximity of the nearest record, this species is likely to utilise the application area while moving through the landscape, however noting the preferred foraging habitat of this species and the extent of the proposed clearing, the vegetation proposed to be cleared is not likely to be significant.
- Swan Coastal Plain shield-backed trapdoor spider (*Idiosoma sigillatum*; Priority 3): A recent paper by researchers from the WA Museum and other institutions describes unique characteristics of spiders of the genus *Idiosoma*, including 'moustache-like' burrow entrances and typically restricted short-range endemic distributions, and outlines some threats to their continued survival (Rix et al, 2018). In the absence of published information specific to the habitat requirements of this species, available information for the related species shield-backed spider (*Idiosoma nigrum*; Threatened) was reviewed. The Approved Conservation Advice for *Idiosoma nigrum* indicates that the spider typically inhabits clay soils of *Eucalyptus* woodlands and *Acacia* vegetation, and relies heavily on leaf litter to build its burrow (Department of Sustainability, Environment, Water, Population and Communities, 2013). The nearest record is approximately 0.19 km from the application area. Noting the (presumed) preferred habitat of this species, it is unlikely to occur within the application area.
- Black-striped burrowing snake (*Neelaps calonotos*; Priority 3): This species is a terrestrial small-bodied burrowing snake that lives in *Banksia* woodlands and sandy areas of the Perth region (Western Australian Museum, 2017). The flora, fauna and fungi survey concluded that this species potentially occurs within the surveyed area. The nearest record is approximately 1.2 km from the application area. Noting the preferred habitat of this species, it is unlikely to occur within the application area.
- South-western brown bandicoot/quenda (*Isodon fusciventer*; Priority 4): This species typically prefers dense understorey (Department of Biodiversity, Conservation and Attractions, 2017; Department of Environment and Conservation, 2012). It is understood that individuals have overlapping home ranges of 1-2 ha. The flora, fauna and fungi survey recorded this species within the surveyed area. The nearest record is approximately 0.33 km from the application area. Noting the proximity of the nearest record, this species is likely to utilise the application area while moving through the landscape, however noting the extent of the proposed clearing, the vegetation proposed to be cleared is unlikely to be significant for the continued survival of this species.
- Graceful sun-moth (*Synemon gratiosa*; Priority 4): This species is most common in sedgeland, heathlands, woodlands and sometimes in open parts of the forest where their 'foodplants' (various grasses, sedges and mat-rushes) are found. This species breeds on two species of *Lomandra* mat-rushes (*L. maritima* and *L. hermaphrodita*) (Department of Environment and Conservation, 2011). The flora, fauna and fungi survey concluded that this species is likely to occur within the surveyed area. The nearest record is approximately 1.7 km from the application area. From the photographs provided by the applicant and available information on *Lomandra maritima*, it is possible that suitable habitat for this species occurs within the application area.
- Peregrine Falcon (*Falco peregrinus*; Other Specially Protected): This species is found in most habitats, from rainforests to the arid zone, and at most altitudes, from the coast to alpine areas. It requires abundant prey and secure nest sites, and prefers coastal and inland cliffs or open woodlands near water, and may even be found nesting on high city buildings (Australian Museum, 2020a). The flora, fauna and fungi survey concluded that this species potentially occurs within the surveyed area. The nearest record is approximately 4.5 km from the application area. Noting the variety of habitat in which this species occurs, it may utilise the application area, however noting the extent of the proposed clearing, the vegetation proposed to be cleared is unlikely to be significant for this species.

In addition to the above, the flora, fauna and fungi survey states that the following species may occur within the broader surveyed area (which includes the application area):

- Rainbow bee-eater (*Merops ornatus*; International Agreement): This species is most often found in open forests, woodlands and shrublands, and cleared areas, usually near water. It will be found on farmland with remnant vegetation and in orchards and vineyards. It will use disturbed sites such as quarries, cuttings and mines to build its nesting tunnels (Australian Museum, 2020b). The flora, fauna and fungi survey recorded

³ Ecological Australia (2016)

this species within the surveyed area. This species may utilise the application area while moving through the landscape, however noting the preferred habitat of this species and the extent of the proposed clearing, the vegetation proposed to be cleared is not likely to be significant for this species.

Significant habitat refers to the resources (breeding, resting and feeding), connectivity or habitat area for a species or community that is critical for its survival. Noting the extent and purpose of the proposed clearing and its location within a broader remnant, and the applicant's proposed revegetation of unused portions of the pathways (resulting in no net impact to fauna habitat once established), it is considered that the application area is unlikely to be significant for the survival of indigenous fauna or be necessary for the maintenance of significant habitat.

Whilst the application area does not comprise of significant habitat for fauna, there is the potential for individuals to be present at the time of clearing.

There is potential that the proposed clearing activities could result in the introduction or spread of weeds and dieback into adjacent vegetation, which could impact on its habitat quality and connectivity.

Conclusion

From the above, the vegetation proposed to be cleared may comprise suitable habitat for indigenous fauna, including species of conservation significance, however is unlikely to comprise significant habitat for these species.

It is considered that potential impacts to adjacent vegetation can be managed by undertaking steps to minimise the risk of the introduction and spread of weeds and dieback.

Slow, directional clearing to allow the movement of fauna that may be present at the time of clearing into adjacent vegetation will mitigate any impacts to fauna.

3.2.2 Flora and vegetation

Assessment

Conservation-significant flora

One threatened and 14 priority flora have been recorded in the local area. In forming a view on the likelihood of these species occurring within the application area, the preferred habitat types of these species and their recorded proximity to the application area were considered, along with the vegetation/soil types and landforms within the application area. Also considered in determining likelihood were the findings of the flora, fauna and fungi survey⁴, which was undertaken in October 2015.

None of the threatened and priority flora were recorded from the same soil types as mapped within the application area. Four priority flora were recorded from the same vegetation type as mapped within the application area, and a further two priority flora were recorded within 2 km of the application area. These are considered below.

- *Baeckea* sp. Limestone (N. Gibson & M.N. Lyons 1425) (Priority 1): The Florabase website (Western Australian Herbarium, 1998-) indicates that this species is known from 20 records (some may overlap) from the local government areas of Gingin, Joondalup, Stirling and Wanneroo. Records on the Florabase website indicate that this species is an upright shrub to 2.5 m high; white flowers in September to November; growing in sandy soils. The nearest record is approximately 2 km from the application area, from different mapped soil and vegetation types. The flora, fauna and fungi survey concluded that this species is unlikely to occur within the surveyed area. Noting the flowering time of this species, it is likely to have been identified during the survey if present.
- *Grevillea* sp. Ocean Reef (D. Pike Joon 4) (Priority 1): The Florabase website indicates that this species is known from four records (some may overlap) from the local government area of Joondalup. Records on the Florabase website indicate that this species is a shrub to 1.5(2) m high and 3 m wide; growing in sandy soils with coastal sand scrub. The nearest record is approximately 6.2 km from the application area, from the same mapped vegetation type and a different mapped soil type. The flora, fauna and fungi survey concluded that this species is unlikely to occur within the surveyed area. Noting the growth form of this species, it is likely to have been identified during the survey if present.
- *Leucopogon maritimus* (Priority 1): The Florabase website indicates that this species is known from 18 records (some may overlap) from the local government areas of Gingin, Joondalup and Wanneroo. Records on the Florabase website indicate that this species is a spreading shrub to 0.4 m high and 0.4 m wide; flowers white in May to August; growing in sandy soils associated with coastal dunes. The nearest record is approximately 3.5 km from the application area, from the same mapped vegetation type and a different mapped soil type. The flora, fauna and fungi survey concluded that this species is unlikely to occur within the surveyed area.
- *Conostylis bracteata* (Priority 3): The Florabase website indicates that this species is known from 17 records (some may overlap) from the local government areas of Gingin, Joondalup, Perth and Wanneroo. The

⁴ Ecological Australia (2016)

Florabase website describes this species as a rhizomatous, tufted or shortly proliferous perennial, grass-like or herb to 0.2-0.45 m high; flowers yellow in August to September; growing in sand and limestone associated with consolidated sand dunes. The nearest record is approximately 2.2 km from the application area, from the same mapped vegetation type and a different mapped soil type. The flora, fauna and fungi survey concluded that this species is unlikely to occur within the surveyed area.

- *Pimelea calcicola* (Priority 3): The Florabase website indicates that this species is known from 29 records (some may overlap) from the local government areas of Cockburn, Fremantle, Gingin, Harvey, Joondalup, Mandurah, Rockingham, Wanneroo and Waroona. The Florabase website describes this species as an erect to spreading shrub to 0.2-1 m high; flowers pink in September to November; growing in sand, associated with coastal limestone ridges. The nearest record is approximately 2 km from the application area, from different mapped soil and vegetation types. The flora, fauna and fungi survey concluded that this species is unlikely to occur within the surveyed area. Noting the flowering time of this species, it is likely to have been identified during the survey if present.
- *Jacksonia sericea* (Priority 4): The Florabase website indicates that this species is known from 58 records (some may overlap) from the local government areas of Cambridge, Claremont, Fremantle, Joondalup, Mandurah, Mandurah, Melville, Murray, Nedlands, Perth, Rockingham, Stirling, Subiaco, Swan and Wanneroo. The Florabase website describes this species as a low spreading shrub to 0.6 m high; flowers orange usually December or January to February; growing in calcareous and sandy soils. The nearest record is approximately 1.2 km from the application area, from the same mapped vegetation type and a different mapped soil type. The flora, fauna and fungi survey concluded that this species is unlikely to occur within the surveyed area.

Conservation-significant ecological communities

Two threatened and four priority ecological communities have been recorded in the local area. In forming a view on the likelihood of these ecological communities occurring within the application area, the composition and habitat types of these ecological communities and their recorded proximity to the application area were considered, along with the vegetation/soil types and landforms within the application area. Also considered in determining likelihood were the findings of the flora, fauna and fungi survey⁵.

Two priority ecological communities (PEC) occur within the same mapped vegetation type as occurs within the application area. One of these PECs comprises tuart (*Eucalyptus gomphocephala*) trees that do not occur within the application area. The other PEC is considered below.

- Acacia shrublands on taller dunes, southern Swan Coastal Plain (Priority 3): This PEC is dominated by *Acacia* shrublands or mixed heaths on the larger dunes. This community stretches from Seabird to south of Mandurah. Species such as summer-scented wattle (*Acacia rostellifera*), panjang (*Acacia lasiocarpa*), and coastal honeymyrtle (*Melaleuca systema*) occur (Department of Biodiversity, Conservation and Attractions, 2020). The nearest mapped occurrence of this PEC is approximately 6.7 km from the application area, from the same mapped vegetation type. The flora, fauna and fungi survey states that Vegetation Community 1 (ArAcTOC), which is mapped across 0.0023 ha / 12.8 per cent of the application area (eastern portions), is representative of this PEC. Noting the extent of the application area containing vegetation that may be representative of this PEC, the proposed clearing is unlikely to impact its conservation status.

In addition to the above, the flora, fauna and fungi survey states that Vegetation Community 3 (OaApRbLOS), which is mapped across approximately 0.157 ha / 87.2 per cent of the application area (western portions), is representative of another PEC:

- Coastal shrublands on shallow sands, southern Swan Coastal Plain (Priority 3). This PEC comprises mostly heaths on shallow sands over limestone close to the coast; no single dominant but important species include basket bush (*Spyridium globulosum*), berry saltbush (*Rhagodia baccata*), and coastal daisybush (*Olearia axillaris*) (Department of Biodiversity, Conservation and Attractions, 2020). This PEC has not been mapped in the local area; the nearest occurrence is approximately 70 km south of the application area near Singleton, from different mapped soil and vegetation types. This PEC is unlikely to be present.

Conclusion

From the above, and with regard for the extent and composition of the vegetation proposed to be cleared, it is considered that conservation-significant flora and ecological communities are unlikely to be impacted by the proposed clearing. No clearing permit conditions are necessary in relation to this matter.

⁵ Ecological Australia (2016)

3.2.3 Significance as a remnant

Assessment

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The Environmental Protection Authority (EPA) recommends a minimum 10 per cent representation threshold for ecological communities in constrained areas (Environmental Protection Authority, 2008).

The application area is located within the Perth Metropolitan Region Scheme boundary, which the EPA recognises to be a constrained area within which a minimum 10 per cent representation threshold for ecological communities is recommended (Environmental Protection Authority, 2008).

The mapped Vegetation Complex has more than 30 per cent of its pre-European extent remaining (at 60.49 per cent), and is considered to be well represented. The local area retains approximately 10.11 per cent of its pre-European native vegetation cover, and is considered to be extensively cleared.

The application area is unlikely to be required to maintain ecosystem services (such as hydrological processes) or compensate for a high degree of fragmentation, and with regard for the composition of the vegetation proposed to be cleared and that of the surrounding vegetation, is unlikely to be biologically diverse.

Conclusion

Noting the extent and purpose of the proposed clearing and its location within a broader remnant, and the applicant's proposed revegetation of unused portions of the pathways (resulting in no net impact to vegetation once established), it is considered that the impact of the proposed clearing is unlikely to sever connectivity within the coastal corridor and does not constitute a significant residual impact. No clearing permit conditions are necessary in relation to this matter.

3.2.4 Conservation areas

Assessment

The application area is wholly located within Bush Forever area 325 'Coastal strip from Burns Beach to Hillarys (Urn Park)'.

State Planning Policy 2.8 *Bushland Policy for the Perth Metropolitan Region* sets out that proposals and decision-making in respect of Bush Forever areas should support a general presumption against the clearing of regionally significant bushland or other degrading activities, except where a proposal or decision is consistent with the overall purpose and intent of the existing Crown reserve or can be reasonably justified with regard to wider environmental, social, economic or recreational needs (clause 5.1.2.1(i)(e)). The Policy also sets out that unavoidable adverse impacts on regionally significant bushland within a Bush Forever area should be offset at a ratio of at least 1:1 in habitat hectares.

With regard for the extent of the proposed clearing, and the composition and condition of the vegetation proposed to be cleared, and the applicant's proposed revegetation of unused portions of the pathways (resulting in no net impact to the Bush Forever area once established), it is considered that the proposed clearing is unlikely to have a significant environmental impact on Bush Forever area 325 and is unlikely to sever connectivity within the coastal corridor. On this basis it is considered that the proposed clearing does not constitute a significant residual impact, and that an offset is not required. It is considered that revegetation of the portions of the pathways that would be no longer used following re-alignment will mitigate impacts to the Bush Forever area consistent with State Planning Policy 2.8.

There is potential that the proposed clearing activities could result in the introduction or spread of weeds and dieback into adjacent vegetation, which could impact on its habitat quality and connectivity.

Conclusion

As set out under section 3.2.1, it is considered that potential impacts to adjacent vegetation can be managed by undertaking steps to minimise the risk of the introduction and spread of weeds and dieback. It is also considered that impacts to Bush Forever area 325 can be addressed through revegetation of the portions of the pathways that would be no longer used following the re-alignment.

Revegetation will be aligned with the City of Joondalup Foreshore Management Plan (Hillarys to Kallaroo) (City of Joondalup 2016), with the use of locally-provenanced species. Existing fences and concrete paths will be removed, and any compacted areas ripped. The new pathways will be fenced appropriately to protect adjacent native vegetation, and the revegetated area fenced to protect the regenerating area (City of Joondalup 2020c; City of Joondalup 2020d).

3.3 Relevant planning instruments and other matters

Lot 500 (Crown Reserve 40802) and Lot 15445 (Crown Reserve 47831) are vested by management order to the City of Joondalup. The application area is zoned 'Regional Parks and Recreation Reserves' under the City of Joondalup Local Planning Strategy (2017) and 'Parks and Recreation' under the City of Joondalup Local Planning Scheme No. 3 (2018; amended 2019). Crown Reserve 47831 has the purpose of 'Parks and Recreation'.

The beach access connects to a health and wellbeing hub, which was referred to the Environmental Protection Authority in March 2018. The EPA declined to accept the referral, and in a letter dated 9 January 2019, the EPA Chairman advised that he was of the view that the applicant is aware of the environmental significance of the area, and that on the basis of the available information he did not believe the project was a significant proposal.⁶

No registered Aboriginal sites of significance have been mapped within the application area. The nearest Aboriginal Heritage Place is a site known as 'Padbury Burial', located approximately 2.4 km from the application area. Given the separation distance, the proposed clearing is unlikely to impact on this site. In any event, it is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal sites of significance are damaged through the clearing process.

⁶ Appeals Convenor's Report for Appeal 054/19 against the grant of Clearing Permit CPS 8601/1. Available at: <https://www.appealsconvenor.wa.gov.au/cps-86011-lot-11176-deposited-plan-217295-crown-reserve-40802-hillarys>

Appendix A – Details of public submissions

Public Submission (1)

Summary of comments	Consideration of comment
Conditional support for the City of Joondalup application	Acknowledged
Rehabilitation conditions should be set, and rehabilitation of each abandoned path should include:	A commitment to revegetation has been provided by the applicant (City of Joondalup 2020c) and relevant permit conditions set (Section 3.2.4).
Removal of existing fencing	Existing fences will be removed as part of the revegetation program (Section 3.2.4).
Removal of any concrete path	Concrete paths will be removed as part of the revegetation program (Section 3.2.4) (City of Joondalup 2020d).
Ripping any limestone paths or foundations to a depth of no less than 300mm	Any compacted areas will be ripped to a depth of at least 300 millimetres (Section 3.2.4) (City of Joondalup 2020d).
Revegetation of the abandoned paths by native plants of local provenance	A commitment to revegetation has been provided by the applicant (City of Joondalup 2020c) and relevant permit conditions set (Section 3.2.4) that include the use of locally-provenanced species.

Public Submission (2)

Summary of comments	Consideration of comment
Does not support the clearing application due to the application being incomplete	Acknowledged
Property locations are identified as Crown Reserve but also form part of Bush Forever site 325	The assessment and decision report considers the application area's location within Bush Forever site 325 (Section 3.2.4).
Application does not provide information on the vegetation to be removed	Photographs and information relevant to the application area have been provided by the applicant during the assessment (Appendix E). A broader vegetation survey of Ecological Australia (2016) considered the application area. This information is available on the Department's FTP site under an adjacent clearing permit application CPS 8601/1.
Application contains no information on the rehabilitation of the existing pathways	A commitment to revegetation has been provided by the applicant (City of Joondalup 2020c) and relevant permit conditions set (Section 3.2.4).
Rehabilitation should be to the appropriate level in accordance with the City's Foreshore Management Plan (Hillarys to Kallaroo)	Revegetation will align with the City of Joondalup Foreshore Management Plan Hillarys to Kallaroo (City of Joondalup 2016) (Section 3.2.4). This information is available on the Department's FTP site under an adjacent clearing permit application CPS 8601/1.
The proposal contains no Pathogen Management plan	Dieback and weed control permit conditions have been set (Section 3.2.1).
Application does not provide any evidence that the new access pathways will be fenced to the level of bushland 'post and rail' in order to protect the coastal dune system	New pathways will be fenced appropriately to protect adjacent native vegetation. The revegetated area (i.e. the old paths) will also be fenced-off to protect the regenerating area and relevant permit conditions set (Section 3.2.4).

Appendix B – Site characteristics

The information below are the findings of a desktop assessment based on the best information available to the Department of Water and Environment Regulation (DWER) at the time of this assessment, and described the key characteristics of the application area. This information was used to inform the assessment of the clearing against the clearing principles (see Appendix C).

Site characteristics

Site characteristic	Details
Local context	<p>The application area is within a broader coastal remnant of vegetation that has a part in maintaining connectivity between remnants in the local area.</p> <p>The local area considered in the assessment of this application is defined as a 10 kilometre (km) radius from the perimeter of the application area, and retains approximately 10.11 per cent of native vegetation cover.</p>
Vegetation description	<p>The application area is mapped as:</p> <ul style="list-style-type: none"> Quindalup Complex, 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 Rottnest teatree (<i>Melaleuca lanceolata</i>) - Rottnest Island pine (<i>Callitris preissii</i>), the closed scrub of summer-scented wattle (<i>Acacia rostellifera</i>) and the low closed peppermint (<i>Agonis flexuosa</i>) forest of Geopraphe Bay. <p>Vegetation composition was determined from the findings of a flora, fauna and fungi survey⁷ undertaken within a broader survey area which included the application area, and photographs provided by the applicant. The vegetation communities proposed to be cleared are:</p> <ul style="list-style-type: none"> Vegetation Community 3 (OaApRbLOS), mapped across approximately 0.157 ha / 87.2 per cent of the application area (western portions), described as: coastal daisybush (<i>Olearia axillaris</i>), <i>Acanthocarpus preissii</i> and berry saltbush (<i>Rhagodia baccata</i> subsp. <i>baccata</i>) low shrubland over hairy spinifex (<i>Spinifex hirsutus</i>) very open grassland; other associated species include thick-leaved fan-flower (<i>Scaevola crassifolia</i>), coast sword-sedge (<i>Lepidosperma gladiatum</i>) and coastal pigface (<i>Carpobrotus virescens</i>). Vegetation Community 1 (ArAcTOC), mapped across 0.0023 ha / 12.8 per cent of the application area (eastern portions), described as: summer-scented wattle and coastal wattle (<i>Acacia cyclops</i>) tall open shrubland over basket bush (<i>Spyridium globulosum</i>) and coastal daisybush shrubland to open shrubland over coastal honeymyrtle (<i>Melaleuca systema</i>), berry saltbush and <i>Acanthocarpus preissii</i> low shrubland over coast sword-sedge open sedgeland; it is common for summer-scented wattle to form dense thickets in this vegetation community. Other associated species include <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>, common clematis (<i>Clematis pubescens</i>), native wisteria (<i>Hardenbergia comptoniana</i>), coast beard-heath (<i>Leucopogon parviflorus</i>), coastal poa (<i>Poa poiformis</i>), thick-leaved fan-flower and cockies tongues (<i>Templetonia retusa</i>); hairy spinifex is commonly found on the dunes adjacent to the beach.
Vegetation condition	<p>Vegetation condition was determined from the findings of a flora, fauna and fungi survey⁸ undertaken within a broader survey area which included the application area, and photographs provided by the applicant. The vegetation within the application area is predominantly in very good to good condition on the scale described by Keighery (1994) (see Appendix D).</p>
Soil description	<p>The application area is mapped as:</p> <ul style="list-style-type: none"> Un-mapped soil type associated with the dune, occurs across approximately 0.157 ha / 87.2 per cent of the application area (western portions) Quindalup South youngest dune Phase (211Qu_Q4), mapped across 0.0023 ha / 12.8 per cent of the application area (eastern portions), described as: the youngest phase; irregular dunes with slopes up to 20 per cent; loose pale brown calcareous sand with no soil profile development.

⁷ Ecological Australia (2016)

⁸ Ecological Australia (2016)

Site characteristic	Details		
Land degradation risk	Mapped land degradation risk factors (as percentage of map unit)		
	Risk categories	Primary dune	211Qu_Q4
	Wind erosion	N/a	>70% has a high to extreme risk
	Water erosion	N/a	30-50% has a high to extreme risk
	Salinity	N/a	30-50% has a moderate to high risk
	Subsurface acidification	N/a	<3% has a high risk
	Flood risk	N/a	<3% has a moderate to high risk
	Waterlogging	N/a	3-10% has a moderate to very high risk
Phosphorus export	N/a	50-70% has a high to extreme risk	
Waterbodies	The application area is located within the broader Peelhurst consanguineous wetland suite. Nineteen mapped lakes, wetlands and rivers and the coastline occur within the local area. The coastal waterline is located 63m from the application area.		
Conservation areas	The application area is located within Bush Forever area 325. A further 31 conservation areas are mapped within the local area, comprising of lands managed by the Department of Biodiversity, Conservation and Attractions (DBCA), privately-managed conservation areas, and Bush Forever sites/nominated sites (some of these overlap). Those within two km of the application area are outlined below.		
	Theme	Description	Proximity (m)
	Bushforever	325	0
	DBCA Managed Lands	Marmion Marine Park, Marine Parks And Reserves Authority	34
Climate and landform	Rainfall: 800 Evapotranspiration: 700 Geology: N/a Acid Sulfate Soil Risk: No Groundwater Salinity (Total Dissolved Solids): 500-1,000 mg/L The application area is on the coastal strip. Topography is approximately 0-10 m above sea level (Department of Primary Industries and Regional Development, 2017).		
Hydrology and hydrogeology	The application area is within the 'Coastal Plain' hydrological zone, and the 'Coastal' hydrographic catchment. The application area is also within the mapped 'Perth' Groundwater Area under the <i>Rights in Water and Irrigation Act 1914</i> .		

Flora, fauna and ecosystem analysis

Ecological Linkages: A number of 'Gnangara Mound' ecological linkages are mapped within the local area. The application area occurs within the western-most of these, which generally follows the coastline.

The following conservation-significant species and ecological communities have been recorded from the local area. With consideration for the site characteristics set out above, relevant datasets, the findings of a flora, fauna and fungi survey⁹ undertaken within a broader survey area which included the application area, and photographs provided by the applicant, the likelihood of their occurrences within the application area has been assessed.

⁹ Ecological Australia (2016)

Species / Ecological Community	Distance to nearest record (km)	Suitable soil type?	Suitable vegetation type?	Suitable habitat features?	Surveys adequate to identify?
Fauna					
Note: The application area is approximately 0.034 km from the ocean. A total of 20 threatened, eight priority, one 'conservation dependent' and one 'other specially protected' fauna, and 15 fauna protected under an international agreement, have been recorded in the local area. Of these, seven threatened, one priority and one 'conservation dependent' fauna (fur-seal, whales, shark, turtles, whales, water-rat and sea-lion) are associated with marine, estuarine or freshwater habitats that do not occur within the application area, and have been excluded from the list below.					
Crested tern (<i>Thalasseus bergii</i> ; International Agreement)	Approximately 0.007 km			Possible	Y
Osprey (<i>Pandion cristatus</i> ; International Agreement)	Approximately 0.13 km			Possible	Y
Swan Coastal Plain shield-backed trapdoor spider (<i>Idiosoma sigillatum</i> ; Priority 3)	Approximately 0.19 km			Unlikely	Y
South-western brown bandicoot/quenda (<i>Isoodon fusciventer</i> ; Priority 4)	Approximately 0.33 km			Y	Y
Carnaby's black cockatoo (<i>Calyptorhynchus latirostris</i> ; Endangered)	Approximately 1.1 km			Y	Y
Black-striped burrowing snake (<i>Neelaps calonotus</i> ; Priority 3)	Approximately 1.2 km			Unlikely	Y
Graceful sun-moth (<i>Synemon gratiosa</i> ; Priority 4)	Approximately 1.7 km			Y	Y
Shy albatross (<i>Thalassarche cauta</i> subsp. <i>cauta</i> ; Vulnerable)	Approximately 1.9 km			Unlikely	Y
Chuditch/western quoll (<i>Dasyurus geoffroyi</i> ; Vulnerable)	Approximately 2 km			N	Y
Forest red-tailed black cockatoo (<i>Calyptorhynchus banksii</i> subsp. <i>naso</i> ; Vulnerable)	Approximately 3.2 km			Unlikely	Y
White-chinned petrel (<i>Procellaria aequinoctialis</i> ; Vulnerable)	Approximately 3.4 km			Unlikely	Y
Southern giant petrel (<i>Macronectes giganteus</i> ; International Agreement)	Approximately 3.6 km			Unlikely	Y
Grey-headed albatross (<i>Thalassarche chrysostoma</i> ; Vulnerable)	Approximately 4.4 km			Unlikely	Y
Peregrine Falcon (<i>Falco peregrinus</i> ; Other Specially Protected)	Approximately 4.5 km			Possible	Y
Blue-billed duck (<i>Oxyura australis</i> ; Priority 4)	Approximately 4.6 km			N	Y
Western brush wallaby (<i>Notamacropus irma</i> ; Priority 4)	Approximately 4.8 km			N	Y
Curlew sandpiper (<i>Calidris ferruginea</i> ; Critically Endangered)	Approximately 5.9 km			Unlikely	Y
Australasian bittern (<i>Botaurus poiciloptilus</i> ; Endangered)	Approximately 5.9 km			Unlikely	Y

Species / Ecological Community	Distance to nearest record (km)	Suitable soil type?	Suitable vegetation type?	Suitable habitat features?	Surveys adequate to identify?
Sharp-tailed sandpiper (<i>Calidris acuminata</i> ; International Agreement)	Approximately 5.9 km			Unlikely	Y
Long-toed stint (<i>Calidris subminuta</i> ; International Agreement)	Approximately 5.9 km			Unlikely	Y
White-winged black tern (<i>Chlidonias leucopterus</i> ; International Agreement)	Approximately 5.9 km			Unlikely	Y
Black-tailed godwit (<i>Limosa limosa</i> ; International Agreement)	Approximately 5.9 km			Unlikely	Y
Glossy ibis (<i>Plegadis falcinellus</i> ; International Agreement)	Approximately 5.9 km			Unlikely	Y
Wood sandpiper (<i>Tringa glareola</i> ; International Agreement)	Approximately 5.9 km			Unlikely	Y
Common greenshank (<i>Tringa nebularia</i> ; International Agreement)	Approximately 5.9 km			Unlikely	Y
Marsh sandpiper/little greenshank (<i>Tringa stagnatilis</i> ; International Agreement)	Approximately 5.9 km			Unlikely	Y
Water-rat/rakali (<i>Hydromys chrysogaster</i> ; Priority 4)	Approximately 7.2 km			N	Y
Red-necked stint (<i>Calidris ruficollis</i> ; International Agreement)	Approximately 7.4 km			Unlikely	Y
Bar-tailed godwit (<i>Limosa lapponica</i> ; International Agreement)	Approximately 8.1 km			Unlikely	Y
Indian yellow-nosed albatross (<i>Thalassarche carteri</i> ; Endangered)	Approximately 8.3 km			Unlikely	Y
Black bittern (<i>Ixobrychus flavicollis</i> subsp. <i>australis</i> (southwest subpopulation); Priority 2)	Approximately 8.3 km			Unlikely	Y
Fork-tailed swift/Pacific swift (<i>Apus pacificus</i> ; International Agreement)	Approximately 8.6 km			Unlikely	Y
Greater sand plover/large sand plover (<i>Charadrius leschenaultii</i> ; Vulnerable)	Approximately 8.9 km			Possible	Y
Numbat (<i>Myrmecobius fasciatus</i> ; Endangered)	Approximately 9.3 km			N	Y
Baudin's black cockatoo (<i>Calyptorhynchus baudinii</i> ; Endangered)	Approximately 9.4 km			Unlikely	Y
Fairy tern (<i>Sternula nereis</i> subsp. <i>nereis</i> ; Vulnerable)	Approximately 9.5 km			Possible	Y
Common sandpiper (<i>Actitis hypoleucos</i> ; International Agreement)	Approximately 9.9 km			Unlikely	Y
Flora					
<i>Jacksonia sericea</i> (Priority 4)	Approximately 1.2 km	N	Y		Y
<i>Baeckea</i> sp. Limestone (N. Gibson & M.N. Lyons 1425) (Priority 1)	Approximately 2 km	N	N		Y

Species / Ecological Community	Distance to nearest record (km)	Suitable soil type?	Suitable vegetation type?	Suitable habitat features?	Surveys adequate to identify?
<i>Pimelea calcicola</i> (Priority 3)	Approximately 2 km	N	N		Y
<i>Conostylis bracteata</i> (Priority 3)	Approximately 2.2 km	N	Y		Y
<i>Leucopogon maritimus</i> (Priority 1)	Approximately 3.5 km	N	Y		Y
<i>Acacia benthamii</i> (Priority 2)	Approximately 3.6 km	N	N		Y
<i>Amanita preissii</i> (Priority 3) (fungi)	Approximately 6.2 km	N	N		Y
<i>Grevillea</i> sp. Ocean Reef (D. Pike Joon 4) (Priority 1)	Approximately 6.2 km	N	Y		Y
<i>Austrostipa mundula</i> (Priority 3)	Approximately 7.7 km	N	N		Y
<i>Marianthus paralius</i> (Threatened)	Approximately 7.8 km	N	N		Y
<i>Stylidium paludicola</i> (Priority 3)	Approximately 7.8 km	N	N		Y
<i>Hibbertia leptotheca</i> (Priority 3)	Approximately 8.8 km	N	N		Y
<i>Sarcozona bicarinata</i> (Priority 3)	Approximately 8.8 km	N	N		Y
<i>Thelymitra variegata</i> (Priority 2)	Approximately 9.6 km	N	N		Y
<i>Lecania turicensis</i> var. <i>turicensis</i> (Priority 2) (fungi)	Approximately 9.8 km	N	N		Y
Ecological communities					
Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain (Priority 3)	Approximately 1.5 km	N	Y (Quindalup)		Y
Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region (Priority 3)	Approximately 3.7 km	N	N		Y
<i>Callitris preissii</i> (or <i>Melaleuca lanceolata</i>) forests and woodlands, Swan Coastal Plain (floristic community type ¹⁰ (FCT) 30a) (Vulnerable)	Approximately 4.3 km	N	N		Y
Northern Spearwood shrublands and woodlands (FCT 24) (Priority 3)	Approximately 5.9 km	N	N		Y
Acacia shrublands on taller dunes, southern Swan Coastal Plain (FCT 29b) (Priority 3)	Approximately 6.7 km	N	Y (Quindalup)		Y

¹⁰ Floristic community types as described in: Gibson, N., Keighery, B.J., Keighery, G.J., Burbidge, A.H. and Lyons, M.N. (1994) *A Floristic Survey of the Southern Swan Coastal Plain*. Department of Conservation and Land Management and Conservation Council of Western Australia, Perth, Western Australia.

Species / Ecological Community	Distance to nearest record (km)	Suitable soil type?	Suitable vegetation type?	Suitable habitat features?	Surveys adequate to identify?
<i>Banksia attenuata</i> woodlands over species rich dense shrublands (FCT 20a) (Endangered)	Approximately 9.3 km	N	N		Y
Vegetation extent					
	Pre-European (ha)	Current extent (ha)	Current extent (%)	Current extent (ha) in DBCA¹¹-managed lands	Current extent (%) in DBCA-managed lands
IBRA¹² bioregion (as at March 2019)¹³					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	269,964.76	17.98
Vegetation Complex (as at March 2019)¹⁴					
Quindalup Complex	54,573.87	33,011.64	60.49	6,632.92	12.15
Local area					
10-kilometre radius	32,306.70	-	-	-	-
excluding open water:	15,558.09	1,572.95	10.11	N/a	N/a

¹¹ Current extent as proportion of pre-European extent within DBCA-managed lands.

¹² Interim Biogeographic Regionalisation for Australia.

¹³ Government of Western Australia (2019b)

¹⁴ Government of Western Australia (2019a)

Appendix C – Assessment against the Clearing Principles

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<p>Principle (a): <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i>¹⁵</p> <p>Assessment: The application area is within a broader remnant and is mapped as a vegetation type that retains more than 60 per cent of its pre-European extent. Approximately 12.8 per cent of the application area contains vegetation that may be representative of a PEC. The application area is unlikely to include threatened or priority flora, or a TEC, and is unlikely to comprise significant habitat for fauna.</p>	Not likely to be at variance	Yes Sections 3.2.1 and 3.2.2
<p>Principle (b): <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p>Assessment: The vegetation proposed to be cleared comprises suitable habitat for threatened fauna. Noting the extent of the proposed clearing and its location within a broader remnant, the application area is unlikely to be significant for the survival of indigenous fauna (including conservation-significant species) or be necessary for the maintenance of significant habitat.</p>	Not likely to be at variance	Yes Section 3.2.1
<p>Principle (c): <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p>Assessment: One threatened flora has been recorded in the local area. Records of this species are from different mapped soil and vegetation types to those found within the application area. The application area is unlikely to include or be necessary for the continued existence of threatened flora.</p>	Not likely to be at variance	Yes Section 3.2.2
<p>Principle (d): <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.”</i>¹⁶</p> <p>Assessment: Two TECs have been recorded in the local area. Noting the composition and condition of the vegetation within the application area, the application area is unlikely to be representative of, or be necessary for the maintenance of, these TECs.</p>	Not likely to be at variance	Yes Section 3.2.2
<p>Principle (e): <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p>Assessment: The application area is unlikely to be required to maintain ecosystem services (such as hydrological processes) or compensate for a high degree of fragmentation, and with regard for the composition of the vegetation proposed to be cleared and that of the surrounding vegetation, is unlikely to be biologically diverse. The application area is part of a mapped ecological linkage and contains suitable habitat for fauna within an extensively cleared local area.</p>	Is at variance	Yes Section 3.2.3
<p>Principle (f): <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p>Assessment: The application area is approximately 34 metres from the coastline. No watercourses or wetlands occur within the application area. The vegetation proposed to be cleared is coastal heath growing in association with the dune system.</p>	Not likely to be at variance	No

¹⁵ The *Biodiversity Conservation Act 2016* defines ‘biodiversity’ as ‘the variability among living organisms and the ecosystems of which those organisms are a part and includes the following – (a) diversity within native species and between native species; (b) diversity of ecosystems; (c) diversity of other biodiversity components’.

¹⁶ The *Biodiversity Conservation Act 2016* defines ‘threatened ecological community’ as ‘an ecological community that – (a) is listed as a threatened ecological community under section 27(1); or (b) is to be regarded as a threatened ecological community under section 33’. Section 27(1) refers to TECs listed by the WA Minister for Environment; section 33 refers to the listing and de-listing of collapsed TECs.

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u> The primary land degradation risk associated with the soil type mapped within the application area is a high to extreme risk of wind erosion, and to a lesser extent high risks of phosphorus export, water erosion, and salinity. Noting the extent and purpose of the proposed clearing and its location within a broader remnant, and that the applicant proposes to revegetate unused portions of the pathways, the proposed clearing is unlikely to cause appreciable land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (h):</u> “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.”</p> <p><u>Assessment:</u> The application area is wholly located within Bush Forever area 325 ‘Coastal strip from Burns Beach to Hillarys (Urn Park)’. Noting the extent of the proposed clearing and the composition and condition of the vegetation within the application area, and that the applicant proposes to revegetate unused portions of the pathways, impacts from the proposed clearing are unlikely to be environmentally significant. There is potential that the proposed clearing activities could result in the introduction or spread of weeds and dieback into adjacent vegetation, which could impact on its habitat quality and connectivity.</p>	May be at variance	Yes Section 3.2.4
<p><u>Principle (i):</u> “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.”</p> <p><u>Assessment:</u> Noting the extent and purpose of the proposed clearing and its location within a broader remnant, and that the applicant proposes to revegetate unused portions of the pathways, the proposed clearing is unlikely to cause deterioration in the quality of surface or underground water.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u> The soil type mapped within the application area has a low flood risk. The un-mapped sandy soil associated with the dune is also likely to have a low flood risk.</p>	Not likely to be at variance	No

Appendix D – 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 E – Photographs of the vegetation

Flora, fauna and fungi survey

Indicative photographs of vegetation communities present within the application area, as contained within a flora, fauna and fungi survey¹⁷ undertaken within a broader survey area which included the application area. This survey was provided in relation to a nearby clearing application and is published on the Department of Water and Environmental Regulation's (DWER) website at: <ftp://ftp.dwer.wa.gov.au/permit/8601/>.



Vegetation Community 3 (OaApRbLOS), mapped across approximately 0.157 ha / 87.2 per cent of the application area (western portions)

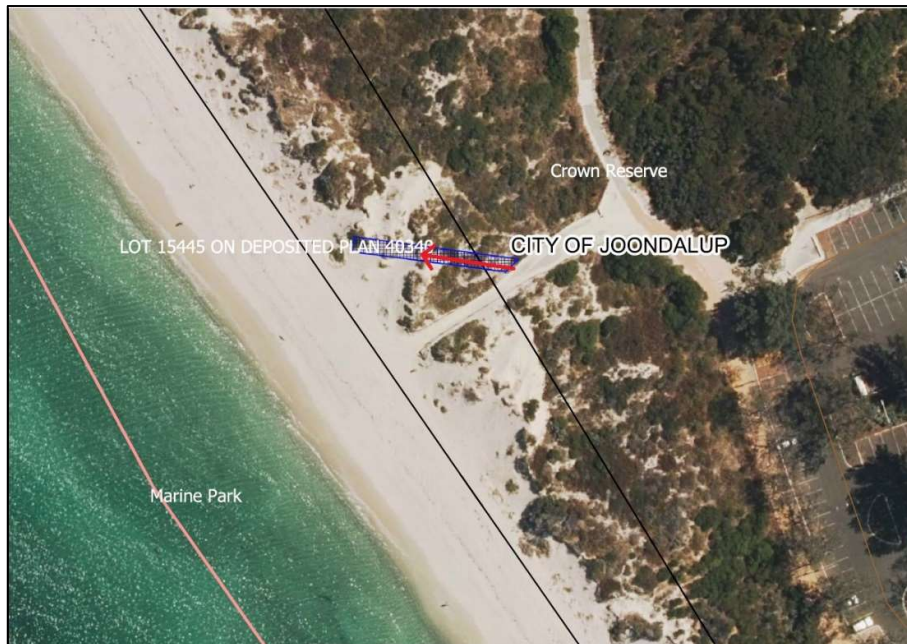


Vegetation Community 1 (ArAcTOC), mapped across 0.0023 ha / 12.8 per cent of the application area (eastern portions)

¹⁷ Ecological Australia (2016)

Maps and photographs provided by the applicant

Maps and photographs of the vegetation within the application area provided by the applicant. This information is published on DWER's website at: <ftp://ftp.dwer.wa.gov.au/permit/8975/>.



Hillarys northern path, red arrow indicates facing direction of photographs 1-4 below



North path 1



North path 2



North path 3



North path 4



Hillarys southern path, red arrow indicates facing direction of photographs 1-4 below



South path 1



South path 2



South path 3



South path 4

Appendix F – References and databases

References

- Australian Museum (2020a) *Peregrine Falcon*. Government of New South Wales. Available at: <https://australianmuseum.net.au/learn/animals/birds/peregrine-falcon/>.
- Australian Museum (2020b) Rainbow bee-eater. Government of New South Wales. Available at: <https://australian.museum/learn/animals/birds/rainbow-bee-eater-merops-ornatus/>.
- Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*. Commonwealth of Australia, Canberra.
- City of Joondalup (2016) Hillarys – Kallaroo Coastal Foreshore Reserve Management Plan. 07 September 2016.
- City of Joondalup (2020a) Supporting Information for clearing permit application CPS 8975/1. City of Joondalup. Received by DWER on 23 July 2020 (DWER Ref: A1916439).
- City of Joondalup (2020b) Correspondence from the City of Joondalup to DWER providing detailed photographs. 01 September 2020 (DWER Ref: A1929832).
- City of Joondalup (2020c) Correspondence from the City of Joondalup to DWER stating that old paths will be revegetated. 3 September 2020 (DWER Ref: A1929832).
- City of Joondalup (2020d) Confirmation from the City of Joondalup to DWER that new paths will be fenced, the revegetated area will be fenced, and concrete will be removed prior to revegetation with any compacted areas. 24 September 2020 (DWER Ref: A1937237; DWER Ref: A1937391).
- Department of Biodiversity, Conservation and Attractions (2007-) *NatureMap: Mapping Western Australia's Biodiversity*. Department of Parks and Wildlife. Available at: <http://naturemap.dpaw.wa.gov.au/> (accessed June 2020).
- Department of Biodiversity, Conservation and Attractions (2017) *Fauna Notes - Living with Quenda*. Government of Western Australia.
- Department of Biodiversity, Conservation and Attractions (2020) *Priority Ecological Communities for Western Australia Version 30*. Dated 28 July 2020. Species and Communities Branch, Department of Biodiversity, Conservation and Attractions, Perth, Western Australia.
- Department of Environment and Conservation (2012) *Fauna profiles - Quenda - Isodon obesulus*. Department of Environment and Conservation, Western Australia.
- Department of Parks and Wildlife (2013) *Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan*. Department of Parks and Wildlife, Western Australia.
- Department of Primary Industries and Regional Development (2017) *NRInfo Digital Mapping*. Available at: <https://maps.agric.wa.gov.au/nrm-info/> (accessed June 2020).
- Department of Sustainability, Environment, Water, Population and Communities (2012) *Environment Protection and Biodiversity Conservation Act 1999 referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered) Calyptorhynchus latirostris, Baudin's cockatoo (vulnerable) Calyptorhynchus baudinii, Forest red-tailed black cockatoo (vulnerable) Calyptorhynchus banksii naso*. Commonwealth of Australia, Canberra.
- Department of Sustainability, Environment, Water, Population and Communities (2013) *Approved Conservation Advice for Idiosoma nigrum (shield-back spider)*. Canberra: Department of Sustainability, Environment, Water, Population and Communities.
- Ecological Australia (2016) *Whitfords Nodes Foreshore Flora, Fauna and Fungi Survey*. Unpublished report prepared for the City of Joondalup, dated February 2016. Available at: <ftp://ftp.dwer.wa.gov.au/permit/8601/>.
- Environmental Protection Authority (2019) *EPA Technical Report: Carnaby's Cockatoo in Environmental Impact Assessment in the Perth and Peel Region*. Advice of the Environmental Protection Authority under Section 16(j) of the *Environmental Protection Act 1986*. May 2019. Government of Western Australia.
- Gibson, N., Keighery, B.J., Keighery, G.J., Burbidge, A.H. and Lyons, M.N. (1994) *A Floristic Survey of the Southern Swan Coastal Plain*. Department of Conservation and Land Management and Conservation Council of Western Australia, Perth, Western Australia.
- Government of Western Australia. (2019a) *2018 South West Vegetation Complex Statistics*. Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth.

- Government of Western Australia (2019b) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report)*. Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth.
- Johnstone, R.E., Johnstone, C. and Kirkby, T. (2011) *Black Cockatoos on the Swan Coastal Plain*. Report for the Department of Planning, 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.
- Rix, M.G., Huey, J.A., Cooper, S.J.B., Austin, A.D. and Harvey, M.S. (2018) *Conservation systematics of the shield-backed trapdoor spiders of the nigrum-group (Mygalomorphae, Idiopidae, Idiosoma): integrative taxonomy reveals a diverse and threatened fauna from south-western Australia*. ZooKeys 756: 1-121. Available at: <https://zookeys.pensoft.net/article/24397/>.
- Shah, B. (2006) *Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia*. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.
- Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnarara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.
- Western Australian Herbarium (1998–) *FloraBase—the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions. Available at: <https://florabase.dpaw.wa.gov.au/> (accessed June 2020).
- Western Australian Museum (2017) *Meet the black-striped snake*. Available at: <http://museum.wa.gov.au/explore/articles/meet-black-striped-snake>
- Western Australian Planning Commission (2010) *State Planning Policy 2.8 – Bushland Policy for the Metropolitan Region*. Government of Western Australia.

GIS datasets

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Consanguineous Wetlands Suites (DBCA-020)
- 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)
- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Remnant Vegetation, All Areas
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)

- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- RIWI Act, Groundwater Areas (DWER-034)

Restricted GIS Databases used:

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