GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 10684/1

File Number: DWERVT15620

Duration of Permit: From 11 January 2025 to 11 January 2027

PERMIT HOLDER

Rottnest Island Authority

LAND ON WHICH CLEARING IS TO BE DONE

Lot 10976 on Deposited Plan 216860 (Reserve 16713), Rottnest Island

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.0005 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

(a) avoid the clearing of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared; and

(c) reduce the impact of clearing on any environmental value.

2. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

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

(b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Directional clearing

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

4. Fauna management

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

(i) *Setonix brachyurus* (quokka)

(b) Clearing activities must cease in any area where fauna referred to in condition 4(a) are identified until either:

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

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

(c) Any fauna individual removed in accordance with condition 4(b)(ii) must be relocated by a *fauna specialist* to a *suitable habitat*.

(d) Where fauna is identified under condition 4(a), the permit holder must within 14 calendar days provide the following records to the *CEO*:

(iv) the number of individuals identified;

(v) the date each individual was identified;

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

(vii) the number of individuals removed and relocated;

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

(ix) the date each individual was removed;

(x) the method of removal;

(xi) the date each individual was relocated;

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

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

5. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; and (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 2; and (g) actions taken in accordance with condition 3; and (h) actions taken to manage and mitigate impacts to fauna in accordance with condition 4.

6. Reporting

The permit holder must provide to the *CEO* the records required under condition 5 of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the *CEO* as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.
fill	means material used to increase the ground level, or to fill a depression.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (WA)
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.
suitable habitat	means habitat known to support quokka within the known current distribution of the species. This often includes eucalypt forests and riparian habitats with sedge-dominated understorey; succulents; usually associated with vegetation that has high rainfall, complex vegetation structure and burn patchiness; habitat varies by population.
weeds	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.

END OF CONDITIONS

Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

19 December 2024

SCHEDULE 1

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

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

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 10684/1
Permit type:	Area permit
Applicant name:	Rottnest Island Authority
Application received:	16 July 2024
Application area:	0.0005 hectares of native vegetation
Purpose of clearing:	Installation of culvert drain headwall and limestone spall
Method of clearing:	Manual clearing
Property:	Lot 10976 on Deposited Plan 216860 (Reserve 16713)
Location (LGA area/s):	City of Cockburn
Localities (suburb/s):	Rottnest Island

1.2. Description of clearing activities

The vegetation proposed to be cleared is distributed across two small areas (see Figure 1, Section 1.5). There is an existing overflow/outfall pipe running underground between the intermittent stream that runs through the Rottnest Island Golf Course to Garden Lake. This pipe has become blocked, buried and overgrown, leading to periodic water inundation during winter. The proposed clearing is of a small area at the ends of the existing pipe to install headwalls and spalls as a permanent upgrade.

The method of clearing would entail the following:

- pruning any obstructive vegetation that is not ground cover.
- excavating to 150 millimetres depth below bottom of pipe, which will remove the ground covers.
- placing rocks by hand and then mortaring, so clearing would only be to edge of the excavation.

1.3. Decision on application

Decision:	Granted
Decision date:	19 December 2024
Decision area:	0.0005 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

The permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix C), relevant datasets (see Appendix G.1), the findings of the surveys (see Appendix F), the clearing principles set out in

Schedule 5 of the EP Act (see Appendix D), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the purpose of the clearing is to manage the flooding which will improve public safety.

The assessment identified that the proposed clearing will result in:

- impacts to habitat for threatened and priority fauna species;
- the loss of vegetation that is representative of a threatened ecological community (TEC);
- the potential introduction and spread of weeds into adjacent vegetation including a TEC, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to have long-term adverse impacts on environmental values. The applicant has suitably demonstrated avoidance and minimisation measures, such that it is unlikely to lead to an unacceptable risk to environmental values.

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

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback;
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity;
- inspect the application area prior to clearing for quokka and relocate any fauna individuals found.

1.5. 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.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

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

Other legislation of relevance for this assessment include:

- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Rottnest Island Authority Act 1987* (WA) (RIA Act)

The key guidance documents which inform this assessment are:

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

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant demonstrated adequate efforts to avoid and mitigate clearing to eliminate, reduce, or otherwise mitigate the need for and scale of the proposed clearing of native vegetation.

The vegetation overgrowth had been flooding the application area and impacting the larger area of surrounding vegetation, which could ultimately lead to degradation due to submersion and erosion. Installation of a larger culvert drain was considered by the applicant, however, that required a greater area of clearance and trenching / excavation within the environmentally sensitive area (ESA). Therefore, the applicant considered clearing a small area at the ends of the existing pipe and installing headwalls and spalls to permanently upgrade would resolve the flooding issue with minimal impact.

The following measures will be undertaken to reduce the impacts on the surrounding vegetation:

- pruning of any obstructive vegetation that is not ground cover.
- excavation to 150 millimetres depth below bottom of pipe to remove the ground covers.
- placing rocks by hand and then mortaring so clearing would only be to the edge of the excavation.
- area will be demarcated to avoid over-clearing and will be the minimum required to achieve the necessary space for the culvert headwall and limestone spall.
- only hand tools such as shovels will be used.
- workers will position to avoid trampling of native vegetation
- tools and footwear will be brushed down and washed before mobilisation to site to avoid spreading of weed species.

The applicant has further committed to removing samphire carefully and replanting in an unvegetated space as close as possible.

The Delegated Officer was satisfied that the applicant has undertaken reasonable measures to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix C), the supporting information provided by the applicant (see Appendix F) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix D) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard management conditions applied in line with sections 51H and 51I of the EP Act.

3.2.1. Biological values (vegetation) - Clearing Principles (a) and (d)

Assessment

The TS and the GtBjTS vegetation units within the application area (see Appendix B.1) is representative of 'Subtropical and temperate coastal saltmarsh' TEC which is listed as 'vulnerable' under the *Environment Protection and Biodiversity Conservation Act 1999 (Emerge, 2024).*

Coastal salt marshes are recognised as ecosystems of immense ecological value that are increasingly threatened due to rising settlements along wetlands (DCCEEW, 2013). Some of the critical threats that affect the community are species invasion (weed), eutrophication, alteration of hydrology/ tidal restrictions, and Acid Sulfate Soil, as well as many more (DCCEEW, 2013).

As per the available datasets (Appendix G.1), the Subtropical and temperate coastal saltmarsh' TEC occurrences within Western Australia total an area of 3988.35 hectares. The application area makes up approximately 0.0000125 % of the total known occurrences of the TEC. The Emerge survey has identified the coastal salt marsh TEC within areas surrounding the application area.

Conclusion
Based on the above assessment, the proposed clearing of 0.0005 hectares of the TEC occurrence will not result in a significant fragmentation of the existing TEC on Rottnest Island.

Conditions
- Weed and dieback management condition.

3.2.2. Biological values (fauna) - Clearing Principles (a) and (b)

Assessment

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

- *Setonix brachyurus* (quokka) (Vulnerable)
- *Calidris ferruginea* (curlew sandpiper) (Critically Endangered)

Quokka: Rottnest Island supports the largest known population of this mammal. They typically inhabit eucalypt forests and riparian habitats with sedge-dominated understorey. On the Swan Coastal Plain, their habitat is associated with floristically diverse swamps, riparian areas and dense coastal heath where they forage on leaves and stems.

Despite the high level of disturbance on Rottnest Island, the species' population on the island is large compared to that on the mainland (estimated as between 8,000-12,000 individuals in 2012) and the island population is considered resilient to current levels of disturbance. Habitat critical to survival of quokkas includes areas of natural vegetation where the understorey is sufficiently thick and complex to provide a predation refuge (DEC, 2013). It is noted that the vegetation adjacent to the application area is intact and in good condition. Considering the small scale of clearing and the better condition of the vegetation in the surrounding areas, the proposed clearing is unlikely to impact significant habitat for the quokka or result in impacts to the conservation status of this species. Impacts to individuals that may be utilising the habitat at the time of clearing will be mitigated through fauna management conditions on the permit.

Curlew sandpiper: In Australia, curlew sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms (DBCA, 2018). They occur in both fresh and brackish waters. Noting that the application area and its surroundings has a similar habitat, curlew sandpipers may be present within the application area. Considering the wide distribution and range of habitats used by the curlew sandpiper, the proposed clearing is unlikely to result in a significant impact to this species.

Conclusion
The proposed clearing is unlikely to result in impacts to the conservation status of these species or on significant habitat for these species. Impacts to individuals can be mitigated through conditions placed on the permit.

Conditions

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

- slow, directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity will minimise impact to individuals.
- inspect application area prior to clearing for quokka and relocate any fauna individuals found.

3.3. Relevant planning instruments and other matters

Considering the small scale of clearing, the ability of the vegetation to grow back, and noting that there will not be changes to the hydrology of the site, the Department of Biodiversity, Conservation & Attractions (DBCA) - Species and Communities branch has advised that there will be no modification of the TEC, hence no authorisation is required under section of the *Biodiversity Conservation Act 2016*.

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

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
Flora and vegetation survey (Emerge, 2024)	see section 3.2
No requirement for a section 45 permit	see section 3.3
Targeted flora survey (Emerge, 2024a)	see Appendix G

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is a 0.0005-hectare isolated patch of native vegetation in the intensive land use zone of Western Australia. It is adjacent to a Garden Lake, that being a perennial waterbody. Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 76 per cent of the original native vegetation cover.
Ecological linkage	No formal ecological linkages have been identified within the application area.
Conservation areas	The application area is on Rottnest Island, a Class A reserve for the purpose of 'public recreation' as registered in 2003 under the *Land Administration Act 1997.* It is managed by the Rottnest Island Authority under the provisions of the *Rottnest Island Authority Act 1987.*
Vegetation description	Photographs supplied by the applicant and the vegetation survey (Emerge, 2024) indicate the vegetation within the proposed clearing area consists of *Tecticornia indica* subs *bidens*, with the *Sarcocornia* sp. interspersed (Samphire). Representative photos and the survey descriptions and maps are available in Appendix F.
Vegetation condition	Photographs supplied by the applicant and the Vegetation survey (Emerge, 2024) indicate the vegetation within the proposed clearing area is in 'Good' to Very good' (Keighery, 1994) condition. • 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. The full Keighery (1994) condition rating scale is provided in Appendix E. Representative photos are available in Appendix F.
Climate	The long-term mean minimum temperature for Rottnest Island from 12.4˚C (July and August) to 17.8˚C (July) and the long-term mean maximum temperature ranges from 19.5˚C (February) to 27.2˚C (February).
Soil description	The soil is mapped as Quindalup South System (211Qu) which is described as 'coastal dunes, of the Swan Coastal Plain, with calcareous deep sands and yellow sands. Coastal scrub.'

<table>
<tr><th>Characteristic</th><th>Details</th></tr>
<tr><td>Land degradation risk</td><td>The degradation risk factors mapped over the application area are detailed below:

<table>
<tr><td>Risks</td><td>Quindalup South System</td></tr>
<tr><td>Wind erosion</td><td>M2: 30-50% of map unit has a high to extreme wind erosion risk</td></tr>
<tr><td>Water erosion</td><td>M1: 10-30% of map unit has a high to extreme water erosion risk</td></tr>
<tr><td>Salinity risk</td><td>L1: 30-50% of map unit has a moderate to high salinity risk or is presently saline</td></tr>
<tr><td>Phosphorous export</td><td>M1: 10-30% of map unit has a high to extreme phosphorus export risk</td></tr>
<tr><td>Water logging</td><td>L1: <3% of map unit has a moderate to very high waterlogging risk</td></tr>
<tr><td>Flooding</td><td>L1: <3% of the map unit has a moderate to high flood risk</td></tr>
</table></td></tr>
<tr><td>Waterbodies</td><td>The desktop assessment and aerial imagery indicated that no watercourses transect the area proposed to be cleared. However, the application area is located adjacent to Garden Lake</td></tr>
<tr><td>Hydrogeography</td><td>The application area falls within the Rottnest Island Groundwater Area, as proclaimed under the Rights in Water and Irrigation Act 1914 (RIWI Act).

Groundwater salinity: 500-1000 mg/L TDS</td></tr>
<tr><td>Flora</td><td>There are records of four Priority flora species within the local area. The closest to the application area is the Priority 1 species Lachnagrostis nesomytica subsp. pseudofiliformis, located approximately 0.3 kilometres south of the application area. All four priority flora species are found in soil and vegetation types similar to that of the application area.

No threatened or priority flora were identified during the surveys conducted within the application area and its surroundings (Emerge, 2024; Emerge,2024a).</td></tr>
<tr><td>Ecological communities</td><td>The ‘Microbialites and microbial mats of coastal hypersaline lakes (Rottnest Island) Community 5 - Garden Lake’ priority ecological community (Priority 1) is located approximately 50 metres east of the application area.

The survey (Emerge, 2024) identified that the vegetation within the application area met the criteria to represent the Commonwealth listed ‘Subtropical and temperate coastal saltmarsh’ threatened ecological community (TEC).</td></tr>
<tr><td>Fauna</td><td>There are records of 40 fauna species of conservation significance within the local area, the closest of which to the application area are some Migratory bird species.</td></tr>
</table>

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

B.2. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
Subtropical and temperate coastal saltmarsh	TEC	Y	Y	Y	0	Y

B.3 Flora analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys* adequate to identify? [Y, N, N/A]
Lachnagrostis nesomytica subsp. *Nesomytica*	P1	Y	Y	Y	2.16	1	Y
Lachnagrostis *nesomytica* subsp. *pseudofiliformis*	P1	Y	Y	Y	0.315	3	Y

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

Emerge (2024a)*

Appendix D. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: The area proposed to be cleared potentially contains habitat for conservation significant fauna and has habitat that is suitable for priority flora species. The vegetation within the application area is mapped as the 'subtropical and temperate coastal saltmarsh' TEC.	May be at variance	Yes *Refer to Section 3.2.1, and 3.2.2 above.*
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: The area proposed to be cleared provides habitat for the quokka, as well as potential habitat for various other conservation significant fauna species. However, in the context of the local area, impacts to habitat values for these species are unlikely to be significant considering the surrounding intact	At variance	Yes *Refer to Section 3.2.2 above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
vegetation which was identified as being in good to very good (Keighery, 1994) condition (Emerge, 2024).		
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: No threatened flora are likely to be present within the area proposed to be cleared. The flora and vegetation survey (Emerge, 2024) did not identify any threatened flora species within the survey area.	Not likely to be at variance	No
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: The area proposed to be cleared contains vegetation representative of a threatened ecological community.	At variance	Yes *Refer to Section 3.2.1, above.*
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the mapped vegetation type and native vegetation in the local area are both consistent with the national objectives and targets for biodiversity conservation in Australia.	Not likely to be at variance	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Although the proposed clearing is located within the Rottnest Island Class A reserve, it is located within the 'mixed use' zone within the Settlement area which is not actively managed for conservation as per the Rottnest Island Management Plan (RIMP) 2023–28. The purpose of the clearing is compatible with the zoning in this area of the island (RIA, 2023). A weed and dieback management condition has been imposed on the permit to ensure environmental values within other sections of the island which are zoned as 'reserve' and managed for conservation purposes are not impacted.	At variance	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: The vegetation within the application area is growing in association with a wetland and a minor watercourse. The application area is located between an intermittent stream that runs through the Rottnest Island Golf Course to Garden Lake. The application area is also located next to the mapped wetland 'Rottnest Island Lakes'. However, the scale and method of clearing is unlikely to impact the function of the intermittent stream running through the application area. The applicant	At variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
has committed to not alter the existing pipe, therefore, it is unlikely that the clearing will impact on- or off-site hydrology and water quality.		
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: Noting the extent of the application area and the condition of the vegetation, the proposed clearing is not likely to have an appreciable impact on land degradation.	Not likely to be at variance	No
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: Given the purpose and scale of clearing, the proposed clearing is unlikely to impact surface or ground water quality.	Not likely to be at variance	No
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: The mapped soils and topographic contours in the surrounding area indicate the proposed clearing is unlikely to contribute to increased incidence or intensity of flooding. The purpose of the clearing is to manage the flooding caused by the vegetation regrowth near the pipeline.	Not likely to be at variance	No

Appendix E. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from

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

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.

Condition	Description
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix F. Photographs of the vegetation and the culvert plan

Figure 2: Photographs of vegetation within the application area

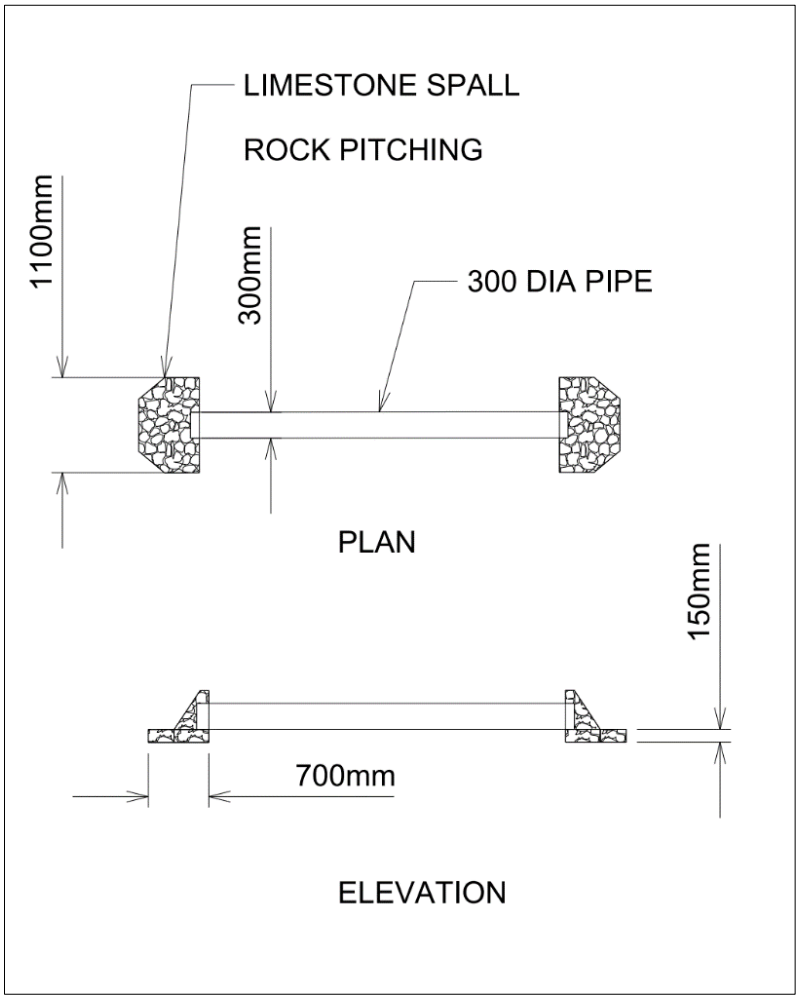

Figure 3: Plan for the proposed clearing area (culvert and limestone spalling)

Appendix G. Additional survey report excerpts

Emerge survey (2024) - Reconnaissance Flora and Vegetation Assessment - Garden Lake North-West, Rottnest Island

Emerge Associates (Emerge, 2024) conducted a survey to characterise the flora and vegetation values within a portion of Rottnest Island, comprising land to the north-west of Garden Lake (15.44 ha).

Application area is located northwest of sample Q12, within the vegetation unit GtBjTS and TS (see figure F.4) and vegetation condition ranges from 'Good' to 'Very good'. (see figure F.5, figure F.6 and Appendix E).

Vegetation units present within the application area are described as:

GtBjTS: Open shrubland of *Atriplex cinerea, A. isatidea* and *Rhagodia baccata* subsp. *dioica* over sedgeland of *Baumea juncea* and *Gahnia trifida* over forbland of *Tecticornia indica* subsp. *bidens, Salicornia quinqueflora* and *Samolus repens var. paucifolius* over grassland of *Sporobolus virginicus* and **Cynodon dactylon* along drainage lines (see Figure 4).

TS: Closed forbland of *Tecticornia indica* subsp. *bidens, Tecticornia halocnemoides, Salicornia quinqueflora* and *Suaeda australis* along periphery of salt lakes (see Figure 4).

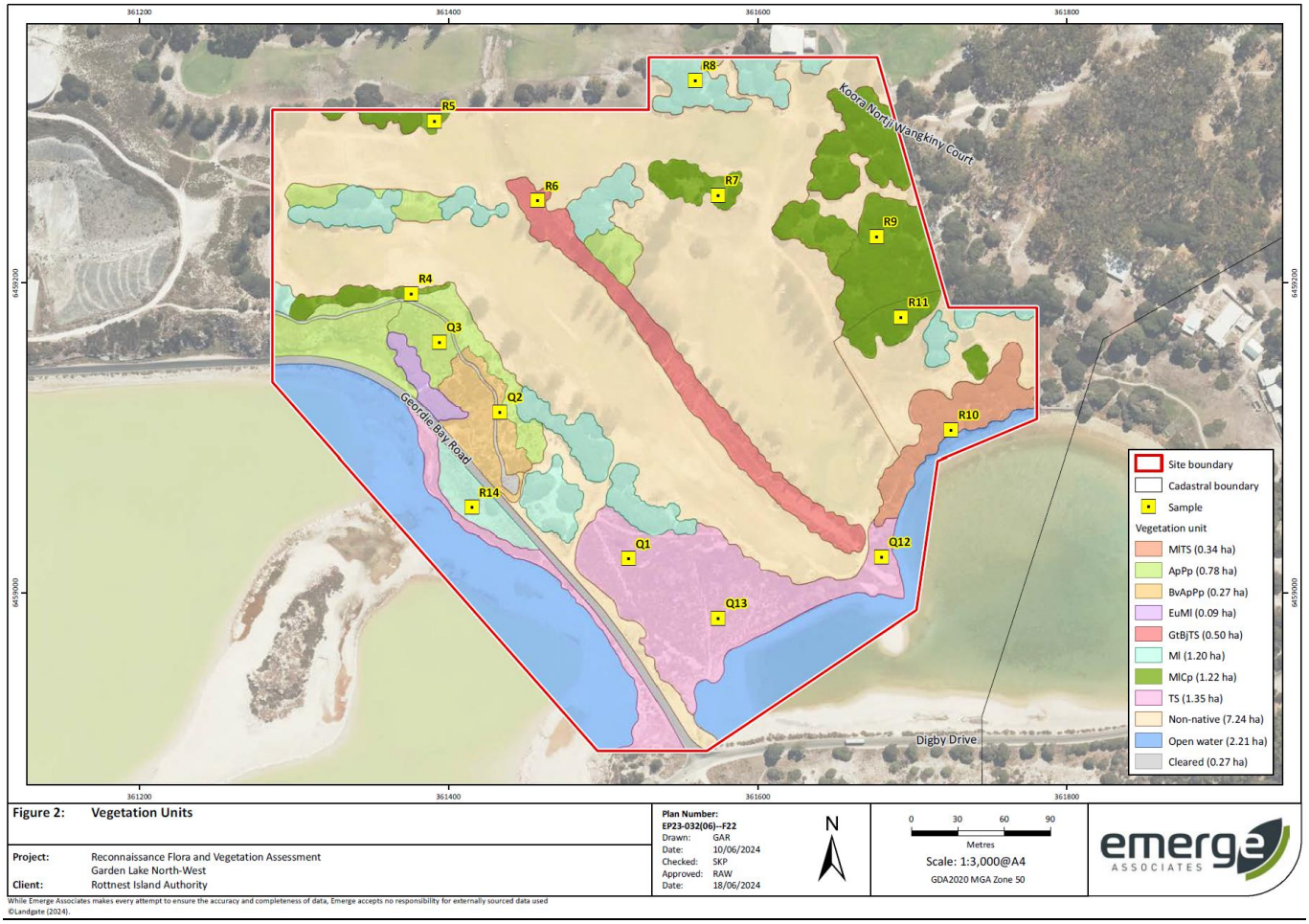

Figure 4: The map depicts the vegetation units within the survey area. Application area lies within the unit GtBjTS and TS.

Figure 5: Vegetation unit GtBjTS in ‘good’ condition (L) and vegetation unit TS in ‘very good’ condition (R).

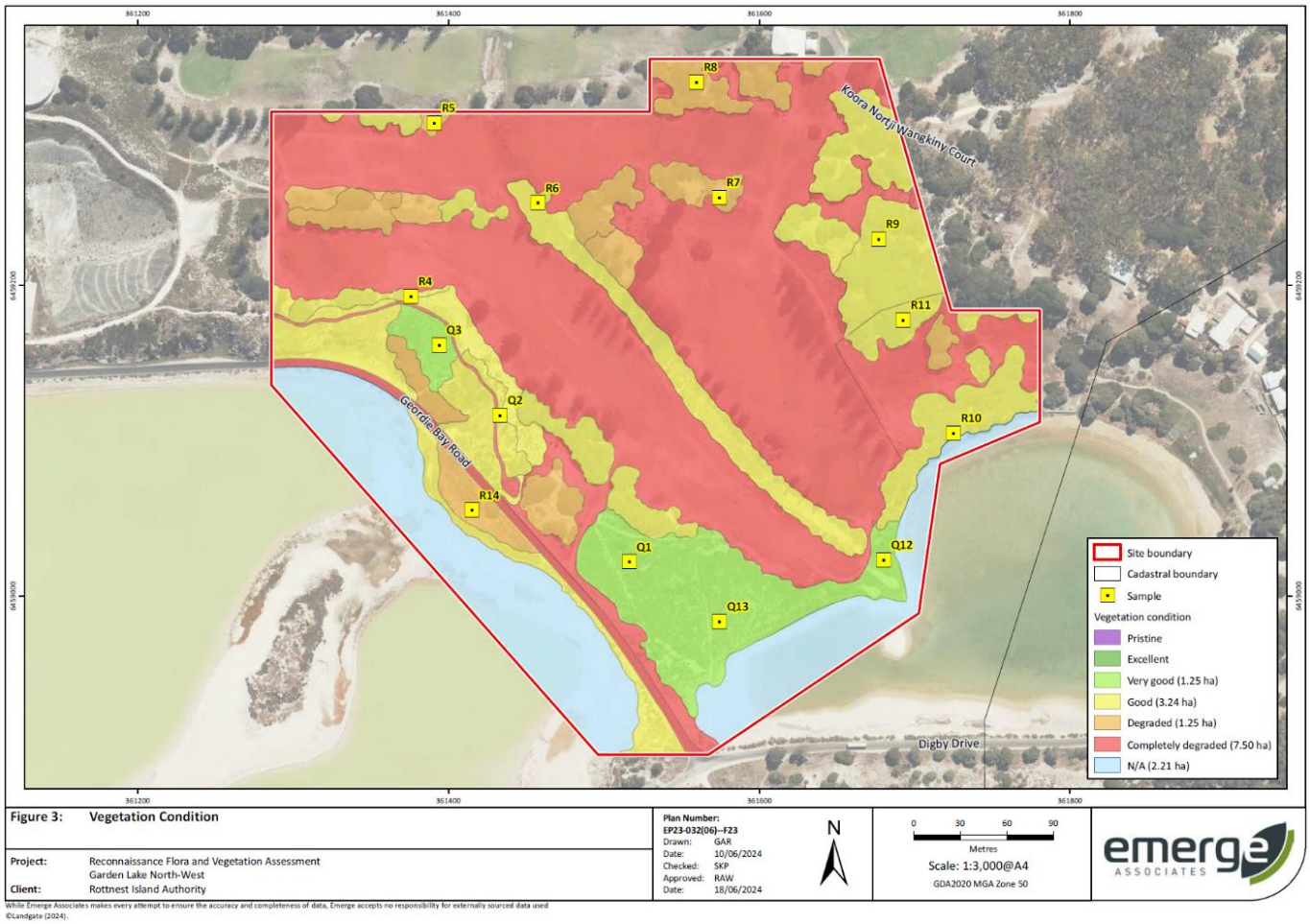

Figure 6: Map depicts the condition of the vegetation within the survey area. Vegetation condition within the application area ranges from ‘Good’ to ‘Very good’ (Emerge, 2024).

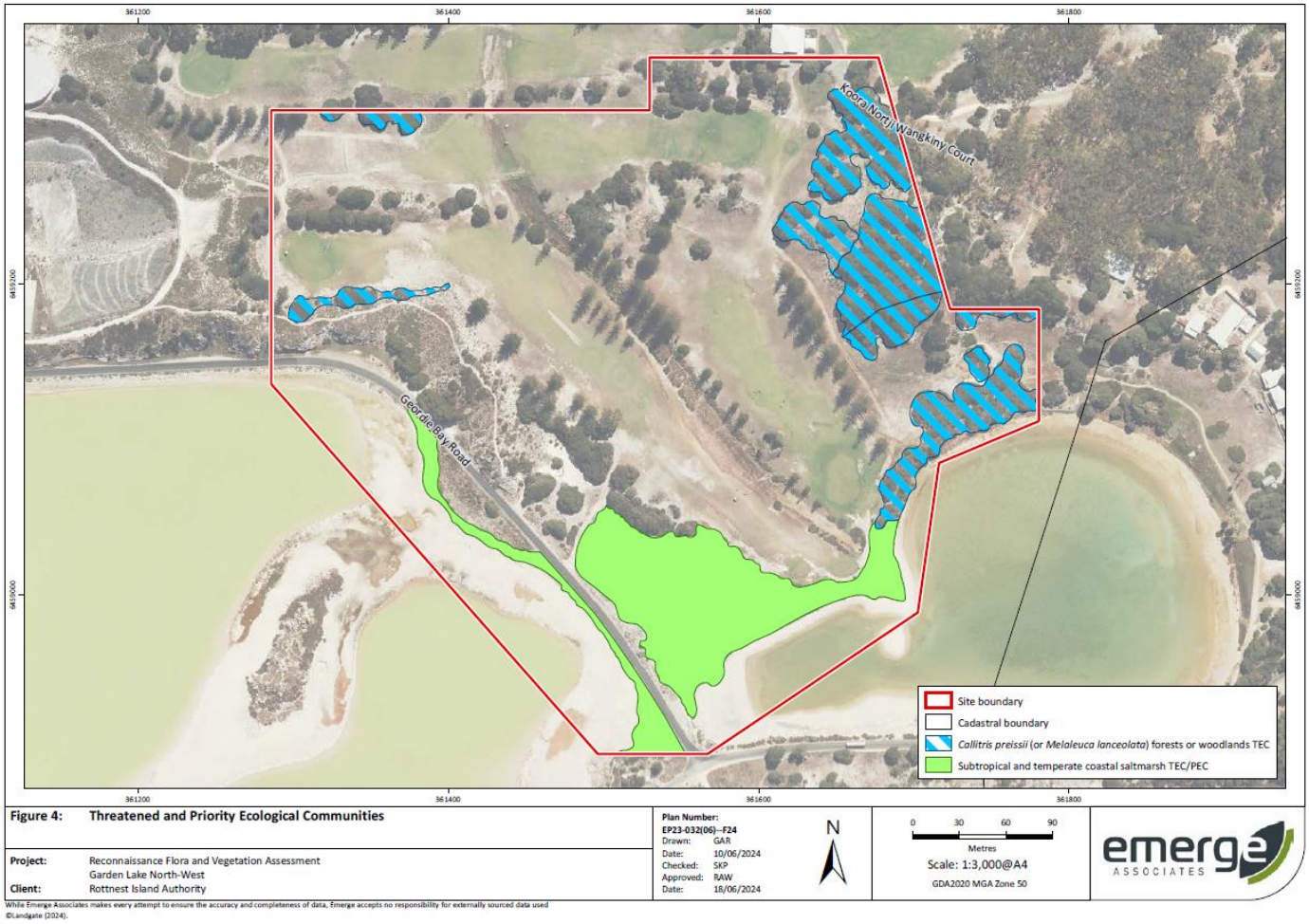

Figure 7: Application area vegetation analogous to the 'Subtropical and temperate coastal saltmarsh TEC'.

Emerge survey (2024a) - targeted flora survey – portion of the Rottnest Island Golf course

Emerge were engaged by RIA to undertake targeted searches within the application area to search for *Lachnagrostis nesomytica* subsp. *nesomytica* (P1) and *Lachnagrostis nesomytica* subsp. *pseudofiliformis* (P1). No individuals of either subspecies were recorded in the site, or in the adjacent area next to Garden Lake.

Figure 8: Targeted Priority flora survey (Emerge, 2024a)

Appendix H. Sources of information

H.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)

- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

Restricted GIS Databases used:

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

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