COTERRA ENVIRONMENT

Native Vegetation Clearing Permit Application Supporting Information

Lark Hill Thoroughbred Track

Rev 1 December 2024

CALIBRE | COMMITMENT | COLLABORATION

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1 Introduction

1.1 Background

Racing and Wagering Western Australia (RWWA) currently operate Lark Hill Thoroughbred Training Complex, located at 70 Stakehill Road, Port Kennedy (the site; Figure 1). The site is located approximately 45 kilometres (km) south of the Perth Central Business District and is within the Swan Coastal Plain bioregion (as mapped under IBRA). Initial development of the site commended in the late 1980's, with the site beginning operations as a thoroughbred training complex since this time.

The Lark Hill Thoroughbred Training Complex is part of the larger Lark Hill Regional Sporting and Equine Complex, and plays a vital role in thoroughbred racing as both a trial and training complex for trainers who are stabled on the southern outskirts of the Perth metropolitan area. The complex's current racetracks consist of a main grass track, and two sand tracks at 9 metres (m) and 15 m width. The grass track is available for fast work two days a week, with the 9 m and 15 m sand tracks being available for slow and fast work respectively and exercise 6 days per week, on a year round basis. Official trials are conducted every second Monday, with the number of trials being between 10 to 25 events.

The site is zoned 'Parks and Recreation' under both the City of Rockingham Town Planning Scheme No. 2 (TPS2) and the Metropolitan Region Scheme (MRS) (CoR, 2024).

1.2 Purpose of Report

This report has been prepared to provide supporting information to the Department of Water and Environmental Regulation (DWER) on the Native Vegetation Clearing Permit (NVCP) application to clear native vegetation in order to progress the proposed works at 70 Stakehill Road, Port Kennedy.

This report includes the following:

- Size and location of the NVCP application area
- Description of site conditions
- Description of environmental values present within the NVCP application area
- Number and nature of any nearby environmentally sensitive receptors
- Assessment against the Clearing Principles listed in Schedule 5 of the *Environmental Protection Act 1986* (EP Act)
- Measures proposed to avoid and mitigate environmental impacts
- Description of planning and other relevant matters.

2 Proposed Clearing

2.1 Proposed Works

The 15 m sand track was historically constructed with a hard base layer underneath a soft sand profile. The base is currently preventing water from draining appropriately off the track surface, rendering the track unusable in wet periods. The proposed works will remove the base and replace the track with natural free draining sand available within the site (see Appendix 1 for site plan).

Currently, riders are reduced to using the 9 m track during wet periods, however this presents a significant safety issue as horses are forced to complete fast work on a track meant for slow work only. The proposed refurbishment of the 15 m sand track will ensure that the designated fast track can be used safely in winter conditions, and will therefore reduce the risk of injury to both horses and riders who are currently utilising a track that is not fit for purpose, ultimately providing better safety and training outcomes all year round.

The proposed tasks to facilitate the above works include the following:

- Sourcing new sand from the outer field (i.e., extraction area), with an approximate quantity of 14,000 m^3 required, with excavation depths up to 2 m, potentially across multiple stages
- Excavated sand will be stockpiled in the outer field area until required for backfilling of the 15 m track
- The 15 m track will be excavated to up to 0.5 m deep
- Excavated track material will be stockpiled in the outer field area and infield area until the borrow pit is ready for backfill
- Sand excavated from the extraction area will then be backfilled into the 15 m track
- The sand/limestone base removed from the 15 m track will be spread and compacted within the outer field extraction area
- Operations will occur in parallel with extraction and backfill operations overlapping in a staged approach across both the extraction area and 15 m track.

The proposed works will require the clearing of native vegetation, associated with the extraction of the outer field and stockpiling within the inner field. The proposed clearing will include:

- Removal of 126 individual *Acacia rostellifera* plants, totalling 126 m^2 within a 2.50 ha footprint inside the outer field (extraction area)
- Removal of 0.28 ha of vegetation within the inner field to facilitate stockpiling of excavated material (stockpile area)

The extraction area and stockpile area are herein referred to collectively as the proposed clearing area.

2.2 Mitigation and Management

2.2.1 Alternatives Considered

To support the proposed works, RWWA have undertaken the following investigations into the site:

- Environmental Due Diligence Assessment (Coterra Environment, 2023)
  - Desktop level environmental review
- Flora and Vegetation Assessment Lark Hill Race Track (FVC, 2023)
  - Detailed spring survey and database review
- Geotechnical Study Proposed RAWA Lark Hill Training Complex (Galt Geotechnics, 2023)

- Site inspection, bore-hole sampling and desktop review

The above investigations have been used collaboratively to identify the most feasible area to extract sand from within the site and facilitate the proposed track refurbishment, whilst also having the lowest ecological impact. It was determined that the completely degraded condition of the extraction area (Figure 2) in the west (between the inner and outer tracks) was likely to be the most appropriate sand extraction area as native vegetation consists of only isolated *Acacia rostellifera* individuals.

Coterra Environment undertook a targeted site inspection to record locations of *Acacia rostellifera* within the investigation area on 12 November 2024. A total of 126 individuals were recorded within the investigation area. Combined with the geotechnical assessment of the site, the proposed sand extraction area was selected to ensure the lowest ecological impact and the least amount of native vegetation clearing. Subsequently, the proposed works will only result in the removal of up to 126 *Acacia rostellifera* individuals within a 2.5 ha footprint.

The refurbishment works also requires a stockpile of excavated materials. Due to restrictions on access during the excavation works (i.e., machinery not being able to cross the grass track, and accessibility into the inner tracks), the inner field was proposed for stockpiling. Areas of 'Completely Degraded' condition were investigated, with consideration of feasibility to move the stockpile materials across large areas also considered. The area selected considered the potential environmental impacts associated with the vegetation clearing required to allow the stockpiling, and the stockpile area was selected based on the following:

- Access requirements – the stockpile area is located directly across from the extraction area and will be accessible without machinery having to exit and re-enter the track (as opposed alternative locations being selected outside the current track and whereby additional vegetation clearing might be required to facilitate access)
- Vegetation condition – the stockpile area vegetation is in 'Completely Degraded' condition
- Vegetation composition – whilst the stockpile area is mapped as the 'ArMs' vegetation unit, a site inspection was undertaken and confirmed vegetation comprised *Acacia rostellifera* and *Acanthocarpus preissii* individuals over a high density of weeds
- Facility usage – RWWA staff who maintain the facility and trainers who utilise the facility expressed concern for large stockpiles to be located adjacent to where horses are being trained on the main track due to the horses being sensitive to the surrounding environment.

To support the selection of the extraction area and stockpile location, Coterra Environment undertook two site inspections on 12 November 2024 (proposed extraction area) and 16 December 2024 (proposed stockpile area). Details on the inspections undertaken within these areas are outlined in Section 3.4.4 and 3.4.5.

2.2.2 Actions to Avoid Impacts

RWWA are committed to achieving sustainable environmental outcomes. The proposed extraction area and stockpile area have been carefully selected to avoid any long-term environmental damage, as opposed to alternative locations within the site which contain more native vegetation coverage.

2.3 Schedule

The proposed extraction works are scheduled for April 2025, with works being weather dependent. The timeline for the proposed works is not variable due to the following:

- Optimal weather conditions: April/May offers dry, stable ground conditions, ideal for excavation and surface works, reducing the risk of delays due to adverse weather if the works were to occur at a later time.

- Off-peak training period: This timeframe typically coincides with a quieter period for horse training, minimizing disruptions and ensuring that maintenance work is completed without interfering with regular training schedules.
- Availability of materials: The adjacent field has accessible sand that can be extracted more easily during the drier months, ensuring timely material availability for track surface renewal.
- Pre-season preparation: Completing the work in April/May ensures the track is ready for the upcoming racing or training season, avoiding the need for last-minute repairs during peak use periods.
- Funding constraints: The project has been budgeted for the current period, and delaying the work until winter could risk missing the allocated funding window, potentially leading to budget reallocation and delays in securing the necessary financial resources for completion.

The excavation works will take approximately 4 weeks to complete, with the excavation sites being filled within 3 to 4 weeks of excavation.

2.4 Planning Context

The proposed works are consistent with the current zoning of the site under both the LPS2 and MRS.

RWWA has received written confirmation from the City of Rockingham that a Development Approval is not required for the proposed works, as the site is identified as an 'MRS Reserve' (See Appendix 2).

3 Existing Environment

3.1 Topography

The site is relatively flat, consistent with its current land use. Topographic elevations within the proposed extraction area range from 4 metres Australian Height Datum (mAHD) to 6 mAHD (MNG Access, 2024; Figure 3).

3.2 Geology and Soils

Soils within the site are mapped as Calcareous Sand (unit S13), described as 'white, fine to medium-grained, sub-rounded quartz and shell debris, of eolian origin'. These soils are noted to generally drain well (Gozzard, 1986; Figure 3).

The proposed clearing area is not mapped as being at risk of Acid Sulphate Soils (ASS) (MNG Access, 2024).

The Department of Primary Industries and Regional Development (DPIRD) maps soils within the proposed extraction area and stockpile area as part of the Quindalup South System (unit 211Qu), described as (DPIRD, 2024; Figure 3):

- Coastal dunes, of the Swan Coastal Plain, with calcareous deep sands and yellow sands. Coastal scrub.

The proposed clearing area contains three soil sub-systems, being (DPIRD, 2024):

- Quindalup South Qf2 Phase (unit 211Qu_Qf2): Relict foredunes and gently undulating beach ridge plain with deep uniform calcareous sands (extraction and stockpile area)
- Quindalup South Qf2a Phase (unit 211Qu_Qf2a): More prominent relict foredune ridges which occur within unit Qf2, with deep uniform calcareous sands (extraction and stockpile area)
- Quindalup South Wet, swamp phase (unit 211QuW_SWAMP): swamp (extraction area only)

The DPIRD soil system mapping at the site outlines the below land degradation risk levels for the mapped soils within the investigation area (DPIRD, 2024; Table 3-1).

Table 3-1: Land Degradation Risk Categories within investigation area

Rick Category	211Qu_Qf2	unit 211Qu_Qf2a	211QuW_SWAMP
Water erosion	0% of map unit has a very high to extreme hazard	5% of map unit has a very high to extreme hazard	0% of map unit has a very high to extreme hazard
Wind erosion	33% of map unit has a high to extreme hazard	35% of map unit has a high to extreme hazard	0% of map unit has a high to extreme hazard
Flood hazard	0% of the map unit has a moderate to high hazard	0% of the map unit has a moderate to high hazard	0% of the map unit has a moderate to high hazard
Salinity hazard	0% of map unit has a moderate hazard	0% of map unit has a moderate hazard	0% of map unit has a moderate hazard
Waterlogging and inundation	0% of map unit has a moderate to very high risk	0% of map unit has a moderate to very high risk	100% of map unit has a moderate to very high risk

Source: DPIRD, 2024

3.3 Hydrology

3.3.1 Groundwater

The site is not within a Public Drinking Water Source Area and is identified as unsuitable for development of a garden bore within the watertable (superficial) aquifer (DWER, 2024a).

The DWER Water Register notes that RWWA holds a groundwater licence (No. 171442) allowing abstraction of up to 220,000kL/annum of groundwater from the Perth Superficial Swan and Rockingham Sand aquifer at this site (DWER, 2024b). The expiry date of this licence is 5/12/2033.

The Water Register indicates that the superficial aquifer (Perth – Superficial Swan and Rockingham Sand) in this location has additional water available for abstraction, whereas the underlying aquifer (Perth – Leederville) is fully allocated (DWER, 2024b).

3.3.2 Surface Water and Wetlands

The site contains an unlined dam and associated irrigation infrastructure, used for the facility's landscaping works. The dam is not located within the proposed clearing area.

No streams, tributaries or geomorphic wetlands are mapped within the proposed clearing area or broader site area (Landgate, 2024). However, several Conservation Category Wetlands (CCWs) fringe the western site boundary. The CCWs and their associated 50 m buffer do not occur within the proposed clearing area (Figure 4).

3.4 Flora and Vegetation

3.4.1 Pre-European Vegetation

Broadscale mapping of pre-European vegetation within the Perth region was undertaken by Beard (1976) which recorded major categories of plants. Shepherd et al. (2002) reassessed Beard's mapping and divided some of the larger vegetation units into smaller units, which then resulted in a total of 819 vegetation units being mapped across the state.

The site is mapped as containing the following broad vegetation type (Landgate, 2024):

- Rockingham_3048: Shrublands; Scrub-heath on the Swan Coastal Plain

This vegetation system occurs at 29.21% of the pre-European extent at a regional level (Table 3-2).

Table 3-2: Rockingham 3048 Vegetation Statistics

Area	Pre-European Extent	Current Extent	Current Extent managed in DBCA lands (proportion of Pre-European Extent)
Western Australia (1b)	12, 100.76 ha	3, 055.38 ha (25.25%)	863.23 ha (10.13%)
Swan Coastal Plain (2b)	10, 418.06 ha	3, 043.13 ha (29.21%)	855.93 ha (28.13%)
City of Rockingham (4b)	9,147.49 ha	2, 735.19 ha (29.90%)	785.01 ha (12.17%)

Source: GoWA, 2019a

3.4.2 Vegetation Complex

The site is mapped as containing vegetation which forms part of the Quindalup Complex which is described as (Heddle et. al, 1980):

- Coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of *Melaleuca lanceolata* (Rottnest Teatree) - *Callitris preissii* (Rottnest Island Pine), the closed scrub of *Acacia rostellifera* (Summer-scented Wattle) and the low closed *Agonis flexuosa* (Peppermint) forest of Geographe Bay

Vegetation complexes are used by the EPA to determine regional representation of biodiversity (EPA, 2008). The EPA has an objective to retain 30% of the pre-clearing extent of each ecological community or at least 10% of the pre-clearing extent of each ecological community within defined constrained areas including the Perth Metropolitan Region (EPA ,2008).

The current extent of the Quindalup vegetation complex remains well above the 30% threshold at a regional and local level (Table 3-3).

Table 3-3: Quindalup Complex Vegetation Statistics

Area	Pre-European Extent	Current Extent	Current Extent secure (EPA definition) for conservation
Swan Coastal Plain	54, 573.87 ha	33, 011.64 ha (60.49%)	5, 369.38 ha (9.84%)
Perth Metro Region	24, 368.87 ha	10, 412.71 ha (42.56)	1, 124.51 ha (4.50%)
City of Rockingham	11, 061.73 ha	4, 129.76 ha (37.33%)	-

Source: GoWA, 2019b

3.4.3 Flora and Vegetation Survey

Focused Vision Consulting (FVC) undertook a detailed level flora and vegetation assessment of the site in spring 2023 (Appendix 3). The assessment consisted of a desktop review supported by a site inspection on 12 October 2023. Timing of the survey was considered optimal as spring is the peak flowering period for the region and when most species are identifiable.

This survey has been submitted via the IBSA portal with a submission number of IBSA-2024-0543.

3.4.3.1 Vegetation Units

The FVC survey recorded two vegetation units within the site (Figure 5):

- Acacia Shrubland (unit ArMs): *Acacia rostellifera* and *Melaleuca systena* low shrubland over **Eragrostis curvula*, and **Bromus diandrus* grassland and **Euphorbia terracina* herbland
- Typha Rushland (unit TdFc): *Typha domingensis* tall open Rushland over *Ficinia nodosa* and **Cyperus congestus* sparse sedgeland

Other areas within the site consisted of:

- Open Water: Presence of a pond
- Cleared: Cleared areas devoid of vegetation

3.4.3.2 Vegetation Condition

The FVC survey found the site ranged from 'Good' to 'Completely degraded' condition, with majority (97.52%) in 'Degraded' or poorer condition. Condition extent is summarised below (Table 3-4; Figure 6).

Table 3-4: Vegetation Condition

Vegetation Condition	Area within site (ha)	Area within proposed extraction area (ha)	Area within stockpile area (ha)
Good	0.12	0	0
Degraded	8.61	0	0
Completely Degraded	12.36	2.39 ha	0.25 ha
Cleared	6.82	0.11 ha	0.03 ha
Open Water	0.58	0	0
Total	28.49	2.50 ha	0.28 ha

Source: FVC, 2023

3.4.3.3 Conservation Significant Vegetation

The desktop assessment revealed 31 potentially occurring conservation significant species within the site, with three species considered 'likely' to occur, 12 which 'may occur' and 17 considered 'unlikely' to occur within the site.

No species listed as Threatened or Priority flora under the *Biodiversity Conservation Act 2016* (BC Act) and/or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were recorded (FVC, 2023).

The buffers to two known Threatened Ecological Communities (TECs) were identified as intersecting the site (being SCP 19a and SCP 19b); however, no flora that is characteristic of these TECs, which are known to dominate SCP 19a or SCP 19b, occur within the site with the exception of *Acacia rostellifera*. The site is too degraded to undertake any Floristic Community Type (FCT) analysis and therefore it is not considered representative of the TEC. No Priority Ecological Communities (PECs) were recorded within the site at either a desktop or on-ground level (FVC, 2023).

3.4.4 Targeted *Acacia rostellifera* Site Inspection

On 12 November 2024, two Coterra Environment scientists undertook a site inspection to target the presence of *Acacia rostellifera* within the extraction area. The site was traversed over one hour, with track logs and GPS locations recorded by individual scientists and collated post-inspection. Track logs and indicative *Acacia rostellifera* locations are shown on Figure 7.

In summary, the inspection concluded:

- Vegetation within the proposed extraction area consists mostly of **Pelargonium capitatum* (Rose Pelargonium), **Hemiandra pungens* (Snakebush), immature **Olea europea* (European Olive), **Oenothera drummondii* (Beach Evening Primrose), **Eragrostis curvula* (African Lovegrass), **Bromus diandrus* (Great Brome), **Euphorbia terracina* (Geraldton Carnation Weed) and *Acacia rostellifera* (Summer-Scented Wattle) low shrubs.
- A total of 126 *Acacia rostellifera* individuals were present within the extraction area. No other native species were observed (Figure 7)
- The growth form of the *Acacia rostellifera* is atypical and stunted, with most individuals being <30 cm in height. This is likely due to the existing land use of the site as a horse training facility and ongoing maintenance of the track to ensure functionality, hence a high level of disturbance
- Of the areas inspected (being the proposed extraction area, and vegetated area within the inner track), the extraction area was considered most suited for the proposed works due to the lack of vegetation diversity and total area required for the works. It is worthwhile to note that no occurrences of *Melaleuca systena* were recorded within the extraction area.

Examples of the vegetation present within the extraction area are shown below (to Plate 3-1 to Plate 3-3).

Plate 3-1: Example large *Acacia rostellifera* individual

Plate 3-2: Example *Acacia rostellifera* typical growth form within the site

Plate 3-3: View across investigation area

Source: Coterra Environment, 12 November 2024

3.4.5 Stockpile Location Site Inspection

On 17 December 2024, Coterra Environment undertook a site inspection to determine the most appropriate location for a stockpile of excavated materials to be stored. The following factors were considered:

- Vegetation composition and condition
- Feasibility for contractors to access the stockpile
- Footprint of vegetation clearing required to allow access to the stockpile
- Consideration of the site's function (i.e., horse training) and potential impacts on horses due to stockpile location/ changes in their environment.

As such, Coterra Environment inspected the 'Completely Degraded' areas located immediately east of the proposed extraction area for environmental values. Track logs of the site inspection undertaken on this date are provided in Figure 7, noting that some areas were not traversed on foot given the low profile of the vegetation and visibility from outer boundaries of the area. The native vegetation in this area consisted of *Acacia rostellifera* and *Acanthocarpus preissii*, within a very high density of weeds (as described in Section 3.4.4). The area north of the proposed stockpile area was also investigated during this site inspection;

however, this area was observed to contain *Melaleuca systena* individuals so was considered less appropriate for clearing when considering environmental impacts. Typical vegetation within the stockpile area is shown below (Plate 3-4 to Plate 3-7).

Plate 3-4: *Acacia rostellifera* within stockpile area

Plate 3-5: *Acanthocarpus preissii* within stockpile area

Plate 3-6: Vegetation form within infield area

Plate 3-7: *Melaleuca systena* north (and outside) of proposed stockpile area

Source: Coterra Environment, 17 December 2024

3.4.6 Weeds and Disease

A total of 22 introduced (weed) species were found across the site during the FVC assessment. Of these, one taxon is listed as a declared Pest plant [s22(2)] under the *Biosecurity and Agriculture Management Act 2007* (BAM Act), being **Echium plantagineum* (commonly known as Paterson's Curse). The total number of weed species recorded accounted for 56% of the total species on site (FVC, 2023). Coterra Environment's site inspection confirmed the proposed clearing area is dominated by weeds (Plate 3-3).

Although no specific assessment was undertaken, the site is unlikely to be affected by dieback as it lacks typical species known to susceptible to dieback (namely banksia, hakeas, Snottygobble, eucalypts and grass-trees) (DBCA, 2024).

3.5 Fauna and Habitat

Given the completely degraded condition of the proposed clearing area, lack of native flora species, and vegetation density, it is not expected that any native fauna rely on or utilise the site in any capacity other than a in a transitory nature to move between habitat types or for occasional, opportunistic foraging.

The proposed clearing area lacks any habitat (foraging, roosting or breeding) for black cockatoos.

3.6 Conservation Areas

The site is mapped as being part of Bush Forever Site No. 356 (Lake Cooloongup, Lake Walyungup and Adjacent Bushland, Hillman to Port Kennedy) (Landgate, 2024). Bush Forever Site No. 356 covers an area of 1,617.5 ha and contains vegetation representative of the Karrakatta Complex – Central and South, Cottesloe Complex – Central and South, and the Quindalup Complex (DEP, 2000). Six floristic community types (FCT) occur within Bush Forever Site No. 356.

The proposed clearing area is not mapped as part of a Bush Forever Reserve and proposed activities will not impact on the Bush Forever Reserve areas adjacent to the proposed extraction area (Figure 8).

The site is mapped as being within a regional ecological linkage (Link ID 76), however this does not intersect the proposed clearing area (Molloy, et. al., 2009).

3.7 Heritage Areas

3.7.1 Aboriginal Heritage

The site does not contain any mapped Aboriginal heritage sites. The closest known Aboriginal heritage site is located over 4 km east of the proposed extraction area (Landgate, 2024).

Although there are no mapped occurrences of Aboriginal heritage items at the site, all contractors will be made aware of obligations under the *Aboriginal Heritage Act 1972* should an unexpected find be encountered.

3.7.2 European Heritage

A search of the following databases revealed no known European Heritage items within the site:

- City of Rockingham, Municipal Heritage Inventory Review (CoR, 2018)
- InHerit Database (GoWA, 2024)

The site is approximately 0.6 km to the east to the nearest known European heritage site (Port Kennedy Scientific Park).

4 Assessment Against Clearing Principles

An assessment of the proposed vegetation clearing against the ten native vegetation Clearing Principles contained in Schedule 5 of the EP Act is provided in Sections 4.1 to 4.10. Based on the assessment of the environmental values of the clearing area, it is deemed that the development is not at variance with any of the clearing principles.

4.1 Comprises high level of biological diversity

Principle (a): Native vegetation should not be cleared if it comprises a high level of biological diversity.

The native vegetation proposed to be cleared comprises two non-conservation significant flora species, being *Acacia rostellifera* and *Acanthocarpus preissii*. There were no other native flora species within the proposed clearing area, and therefore biological diversity is negligible.

Vegetation condition within the proposed clearing area is 'Completely Degraded' and no Threatened or Priority flora and communities were recorded within the site (FVC, 2023).

The clearing is therefore not considered to be at variance with this principle.

4.2 Potential impact to any significant habitat

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 indigenous to Western Australia.

As the composition of the proposed clearing area is weed species with occasional low *Acacia rostellifera* and *Acanthocarpus preissii* individuals in 'Completely Degraded' condition, it does not provide any significant or unique habitat for conservation significant native fauna.

The clearing is therefore not considered to be at variance with this principle.

4.3 Potential impacts to any rare flora

Principle (c): Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, Rare flora.

The proposed clearing area is in 'Completely Degraded' condition and contains only two native flora species, with no rare flora being recorded within the entirety of the site. The condition and disturbed nature of the proposed clearing area precludes it from likely supporting any Rare flora.

The clearing is therefore not considered to be at variance with this principle.

4.4 Presence of any threatened ecological communities

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.

The proposed clearing area contains only two native flora species, and is in too degraded condition to undergo FCT analysis and therefore be assigned to a TEC.

The clearing is therefore not considered to be at variance with this principle.

4.5 Significance of remnant native vegetation

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

The DBCA 2018 statewide vegetation statistics indicate that approximately 29.21% of the pre-European extent of the Rockingham 3048 vegetation association remains within the Swan Coastal Plain and 29.9% remains within the City of Rockingham (GoWA, 2019a).

The DBCA 2018 vegetation complex statistics the identifies the Quindalup complex remains at approximately 42.56% within the Swan Coastal Plain, and 37.33% within the City of Rockingham (GoWA, 2019b).

Given the clearing will only require removal of isolated and scattered *Acacia rostellifera* and *Acanthocarpus preissii*, and does not propose to remove any intact native vegetation, the clearing is therefore not considered to be at variance with this principle.

4.6 Potential impact on watercourses and or/wetlands

Principle (f): Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or a wetland.

Acacia rostellifera occurs predominantly on consolidated sand dunes. *Acanthocarpus preissii* occurs on white, grey, red or brown sands, sandstone, limestone and on coastal dunes. Neither species is known to grow in association with watercourses or wetlands.

There are no watercourses or wetlands within the proposed clearing area.

The clearing is therefore not considered to be at variance with this principle.

4.7 Potential to cause appreciable land degradation

Principle (g): Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

As identified in Table 3-1, the highest risk for land degradation is associated with waterlogging and inundation in the 211QuW_Swamp unit, however the extent of clearing within this area is minimal.

The second highest risk category is wind erosion, however the site will be stabilised post-construction with infill of excavated materials as a part of the works outlined in Section 2.1.

The clearing is therefore not considered to be at variance with this principle.

4.8 Potential impact on adjacent or nearby conservation areas

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 areas.

Removal of 126 individuals of *Acacia rostellifera* and up to 0.28 ha of native vegetation within the infield in this location will not have any effect on nearby conservation areas. The proposed extraction area and stockpile area are isolated and bound by the two adjacent race tracks, and effects of removal of this vegetation is not likely to translate to the adjacent conservation areas.

No clearing works are proposed within the 50 m buffer to adjacent CCWs.

The clearing is therefore not considered to be at variance with this principle.

4.9 Potential deterioration in the quality of surface or underground water

Principle (i): Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of the surface or underground water.

The mapped soils within the proposed clearing area are not at risk of salinity hazard, flood risk, waterlogging or inundation. There are no surface water features in the vicinity of the proposed clearing area that will be affected by the proposed works, and the extraction works will not intercept the water table below the site.

The extraction area will be stabilised post-extraction with infill material sourced from within the adjacent track.

The clearing is therefore not considered to be at variance with this principle.

4.10 Potential for clearing to cause or exacerbate the incidence of flooding

Principle (j): Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Acacia rostellifera reproduces via root suckers, and it is therefore considered that the plant maintains a shallow root system. *Acanthocarpus preissii* is a rhizomatous species which thrives on coastal dunes and is adapted to an arid environment. As such, removal of these individuals will not cause water table rise or flooding.

The soils within the proposed extraction area are not mapped as at risk of flood hazard.

The clearing is therefore not considered to be at variance with this principle.

5 References

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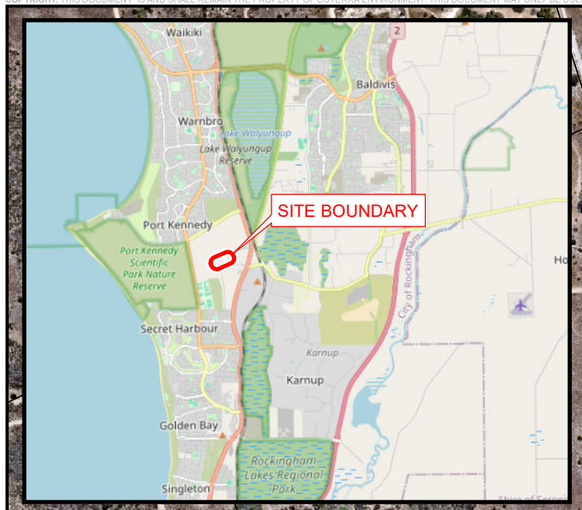
Figures



LEGEND

- Site Boundary
- Extraction Area
- Stockpile Area
- Cadastre
- Railway

N

0 25 50 100 150 200 m

Scale: 1:5,000 @ A3
GDA2020 MGA Zone 50

LARKHILL THOROUGHBRED TRAINING CENTRE

ENNIS AVENUE

MANDURAH ROAD

STAKEHILL ROAD WEST

Source: Cadastre - Landgate
Orthophoto - Nearmaps, 28.10.24

ENVIRONMAPS | t: 0406 590 006
Environmental Mapping Solutions | www.environmaps.com.au

C:\GIS\Jobs\CoTerra\RWWLAR02 - Lark Hill Thoroughbred Training Complex, NVCP App\Figures\RWWLAR02_F01 Site Location_241218.mxd

COTERRA ENVIRONMENT

Job: RWWLAR02
Doc: 001
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Fax: (08) 9381 5514
E: info@coterra.com.au

Racing and Wagering WA
NVCP APPLICATION
LARK HILL THOROUGHBRED TRAINING COMPLEX

SITE LOCATION

Figure 1

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NVCP APPLICATION
LARK HILL THOROUGHBRED TRAINING COMPLEX

PROPOSED CLEARING AREA

Figure 2

ENVIRONMAPS Environmental Mapping Solutions | t: 0406 590 006 | www.environmaps.com.au

C:\GIS\Jobs\CoTerra\RWWLAR02 - Lark Hill Thoroughbred Training Complex, NVCP App\Figures\RWWLAR02_F02 Proposed Clearing Area_241218.mxd

Port Kennedy Dr

S13

Cps

Cps

Cps

S2

Stakehill Rd West

Forty Rd

Wambro Sound Av

Wambro Sound Av

LEGEND

- Site Boundary
- Extraction Area
- Stockpile Area
- Cadastre
- Contour (mAHD)

Acid Sulphate Soil Risk Mapping

- High to Moderate Risk

Geology

- Cps: PEATY CLAY - dark grey and black, soft, variable organic content, some quartz sand in places, of lacustrine origin.
- S2: CALCAREOUS SAND - white, fine to medium-grained, sub-rounded quartz and shell debris, of eolian origin.
- S13: CALCAREOUS SAND - white, fine to medium-grained, sub-rounded quartz and shell debris, of eolian origin.

N

0 25 50 100 150 200 m

Scale: 1:5,000 @ A3

GDA2020 MGA Zone 50

Source: Cadastre - Landgate
ASS & Contours - DWER
Orthophoto - NearMaps, 28.10.24
Geology - DoIR: Geological Survey of W.A., 1999

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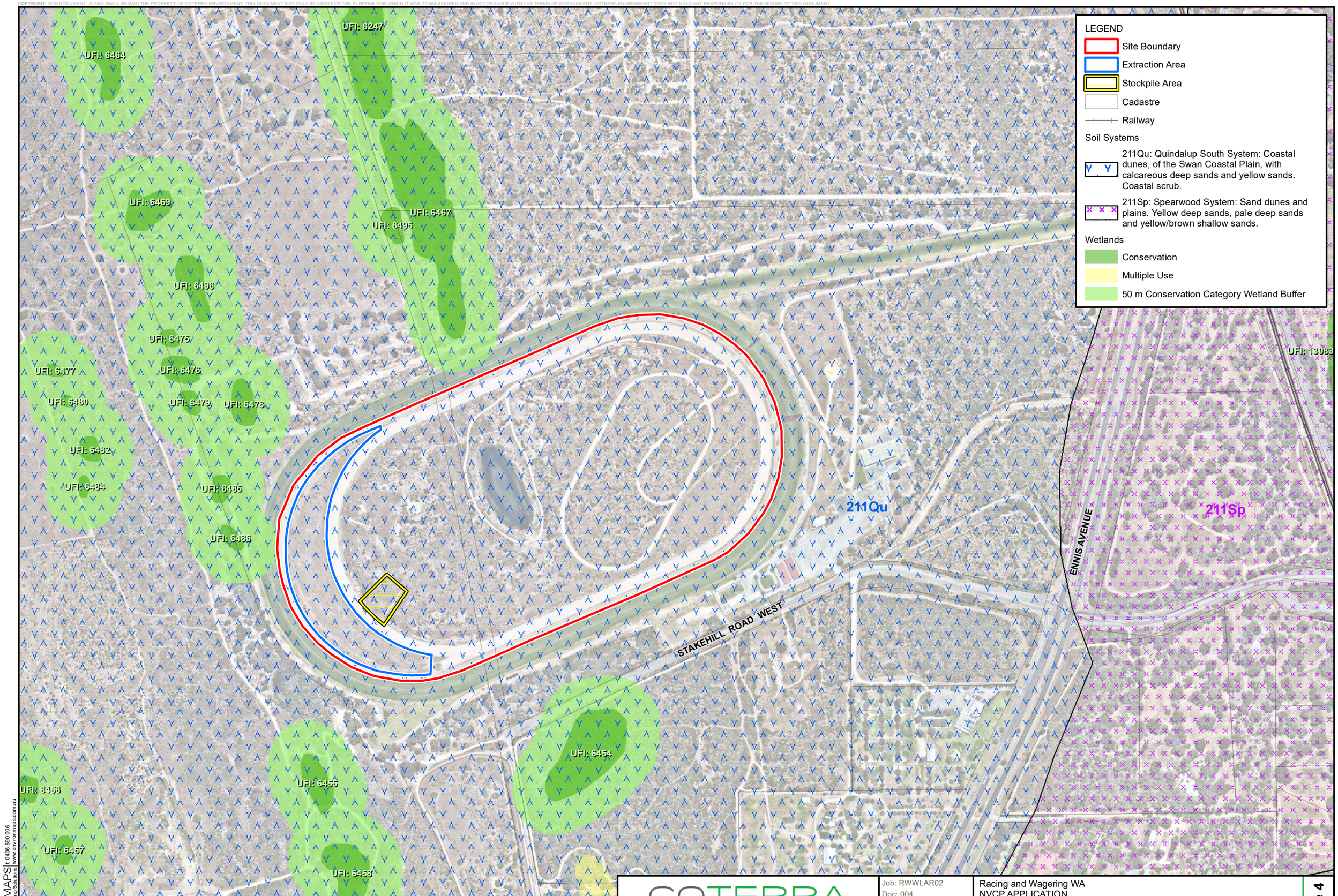
Racing and Wagering WA
NVCP APPLICATION
LARK HILL THOROUGHBRED TRAINING COMPLEX

TOPOGRAPHY AND SOILS

Figure 3

C:\GIS\Jobs\CoTerra\RWWLAR02 - Lark Hill Thoroughbred Training Complex, NVCP App\Figures\RWWLAR02_F03 Topography and Soils_241218.mxd



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Racing and Wagering WA
NVCP APPLICATION
LARK HILL THOROUGHBRED TRAINING COMPLEX

HYDROGEOLOGICAL FEATURES

Figure 4

C:\GIS\Jobs\CoTerra\RWWLAR02 - Lark Hill Thoroughbred Training Complex, NVCP App\Figures\RWWLAR02_F04 Hydrogeological Features_241218.mxd

LEGEND

- Site Boundary
- Extraction Area
- Stockpile Area
- Cadastre

Vegetation Units

- ArMs: *Acacia rostellifera* and *Melaleuca systena* low shrubland over **Eragrostis curvula* and **Bromus diandrus grassland* and **Euphorbia terracina* herbland.
- Cleared: Cleared areas devoid of vegetation.

N

0 10 20 40 60 80 m

Scale: 1:1,250 @ A3
GDA2020 MGA Zone 50

ArMs

ArMs

Cleared

ArMs

Cleared

ArMs

Source: Cadastre - Landgate
Orthophoto - NearMaps, 28.10.24

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Racing and Wagering WA
NVCP APPLICATION
LARK HILL THOROUGHBRED TRAINING COMPLEX

VEGETATION UNITS

Figure 5

C:\GIS\Jobs\CoTerra\RWWLAR02 - Lark Hill Thoroughbred Training Complex, NVCP App\Figures\RWWLAR02_F05 Vegetation Units_241218.mxd

LEGEND

- Site Boundary
- Extraction Area
- Stockpile Area
- Cadastre

Vegetation Condition

- Degraded
- Completely Degraded
- Cleared

N

0 10 20 40 60 80 m

Scale: 1:1,250 @ A3
GDA2020 MGA Zone 50

Source: Cadastre - Landgate
Orthophoto - NearMaps, 28.10.24

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NVCP APPLICATION
LARK HILL THOROUGHBRED TRAINING COMPLEX

VEGETATION CONDITION

Figure 6

C:\GIS\Jobs\CoTerra\RWWLAR02 - Lark Hill Thoroughbred Training Complex, NVCP App\Figures\RWWLAR02_F06 Vegetation Condition_241218.mxd

LEGEND

- Site Boundary
- Extraction Area
- Stockpile Area
- Cadastre
- Survey Track
- Indicative *Acacia rostellifera* Location

N

0 5 10 20 30 40 m

Scale: 1:1,250 @ A3
GDA2020 MGA Zone 50

Source: Cadastre - Landgate
Orthophoto - NearMaps, 28.10.24

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Racing and Wagering WA
NVCP APPLICATION
LARK HILL THOROUGHBRED TRAINING COMPLEX

Acacia rostellifera INDICATIVE LOCATIONS AND SURVEY EXTENT

Figure 7

C:\GIS\Jobs\CoTerra\RWWLAR02 - Lark Hill Thoroughbred Training Complex, NVCP App\Figures\RWWLAR02_F07 Acacia rostellifera Indicative Locations and Survey Extent_241218.mxd

LEGEND

- Site Boundary
- Extraction Area
- Stockpile Area
- Cadastre
- Ecological Linkage
- SPP 2.8 Bush Forever Area

N

0 25 50 100 150 200 m

Scale: 1:5,000 @ A3
GDA2020 MGA Zone 50

SITE 356

Stakehill Rd West

Forty Rd

Warnbro Sound Av

Warnbro Sound Av

durah Hwy

Source: Cadastre - Landgate
Bush Forever - DLPH
Ecological Linkages - WALGA
Orthophoto - NearMaps, 28.10.24

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Racing and Wagering WA
NVCP APPLICATION
LARK HILL THOROUGHBRED TRAINING COMPLEX

CONSERVATION AREAS

Figure 8

C:\GIS\Jobs\CoTerra\RWWLAR02 - Lark Hill Thoroughbred Training Complex, NVCP App\Figures\RWWLAR02_F08 Conservation Areas_241218.mxd

Appendix 1 Proposed Works Plan

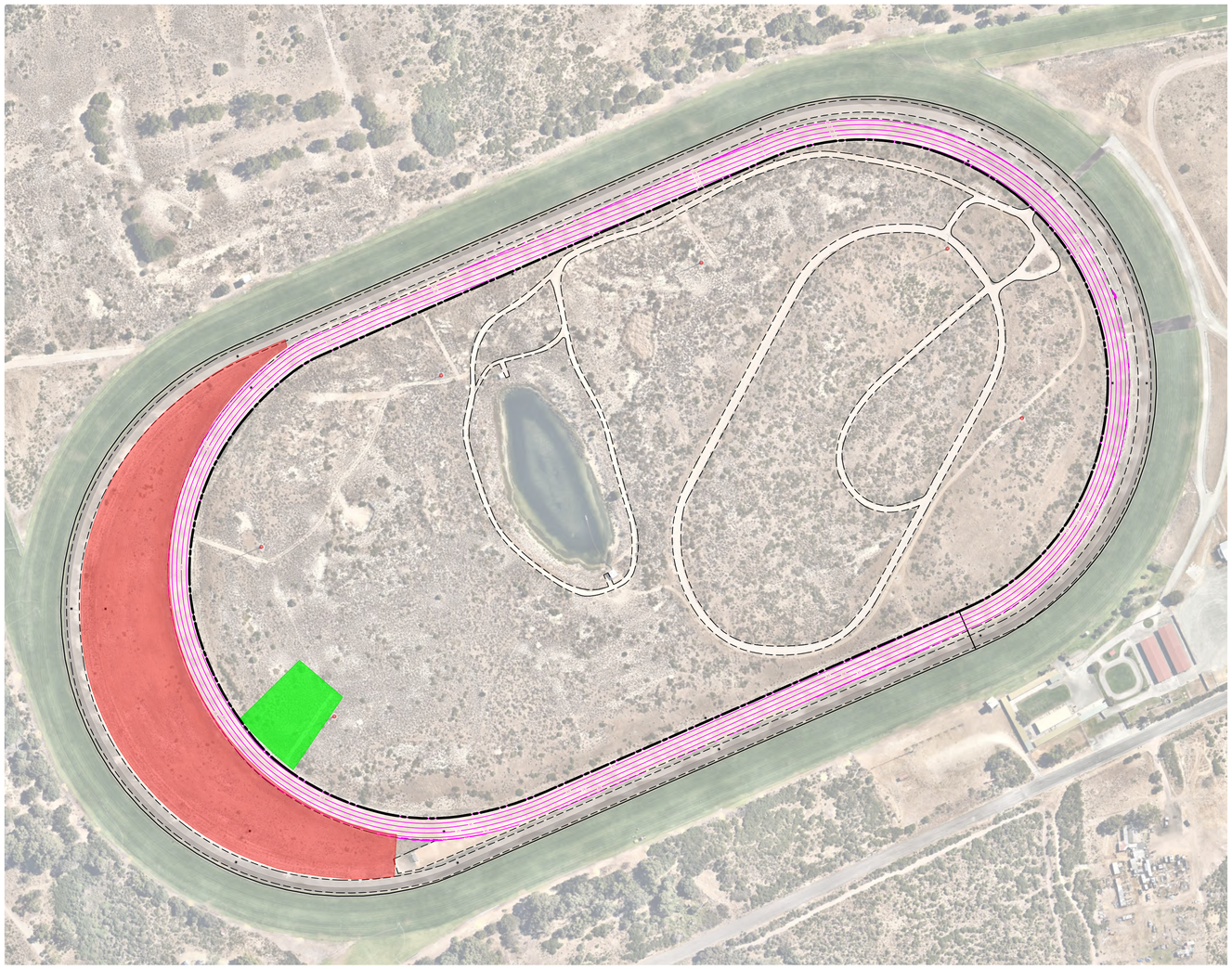
N

W E

S

RWWA

LARKHILL - SAND TRACK



LOCALITY PLAN

DATE: NOVEMBER 2024

Disclaimer: This digital information is provided for information only and was used to generate the drawings by Edgeloe Engineering Pty Ltd and so is not a totally accurate 3D representation of the works. If used to assist setout of the works then the set out information shown on drawings will take precedence to digital set out and shall in all instances be checked and cross referenced. The Contractor shall notify the Superintendent of any discrepancies for resolution prior to commencement of construction of the items in question.

DRAWING LIST

24063 101	SAND TRACK WORKS 1 OF 6
24063 102	SAND TRACK WORKS 2 OF 6
24063 103	SAND TRACK WORKS 3 OF 6
24063 104	SAND TRACK WORKS 4 OF 6
24063 105	SAND TRACK WORKS 5 OF 6
24063 106	SAND TRACK WORKS 6 OF 6
24063 401	SAND TRACK LONG SECTION
24063 501	SAND TRACK CROSS SECTIONS 1 OF 6
24063 502	SAND TRACK CROSS SECTIONS 2 OF 6
24063 503	SAND TRACK CROSS SECTIONS 3 OF 6
24063 504	SAND TRACK CROSS SECTIONS 4 OF 6
24063 505	SAND TRACK CROSS SECTIONS 5 OF 6
24063 506	SAND TRACK CROSS SECTIONS 6 OF 6
24063 801	STANDARD DETAILS PLAN
RWWA	EXISTING IRRIGATION 1 OF 2
	EXISTING IRRIGATION 2 OF 2

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE

METADATA

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HEIGHT DATUM:	AHD
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EDGELOE Engineering

RWWA

PROJECT

LARK HILL RACE COURSE - SAND TRACK

ADDRESS

70 STAKEHILL ROAD, PORT KENNEDY WA

DRAWING TITLE

COVER PAGE

PROJECT No:	DRAWING No.	SCALE 1:2000		REVISION
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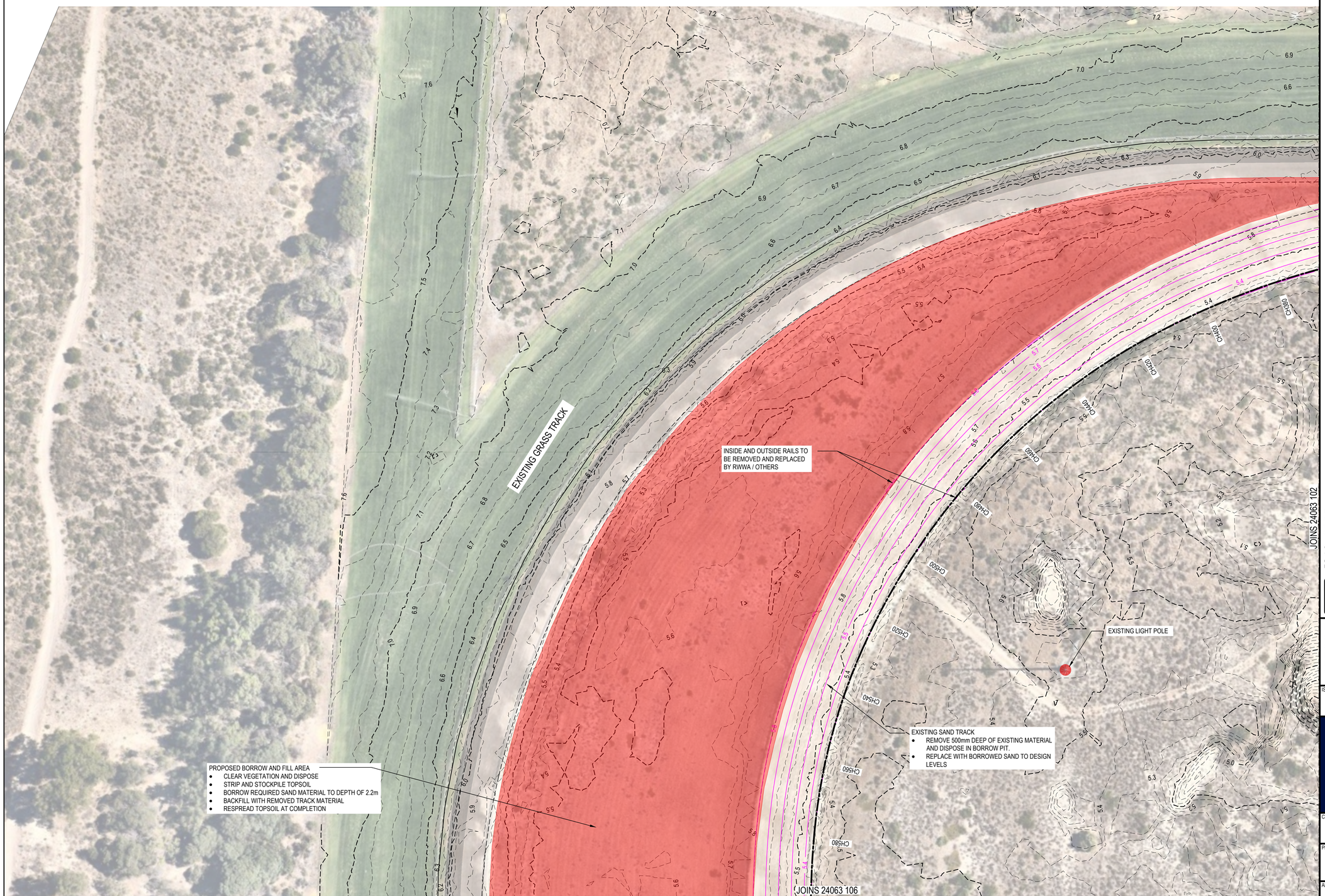

LEGEND

- 5.6 — DESIGN CONTOUR (0.1m)
- 5.6 — EXISTING LIDAR CONTOUR (0.1m)
- BORROW AND INTERIM STOCKPILE AREA
- STOCKPILE AREA FOR SALVAGED TRACK SAND

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SAND TRACK WORKS 1 OF 6

PROJECT No.	DRAWING No.			REVISION
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A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE

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- 5.6 — EXISTING LIDAR CONTOUR (0.1m)
- BORROW AND INTERIM STOCKPILE AREA
- STOCKPILE AREA FOR SALVAGED TRACK SAND

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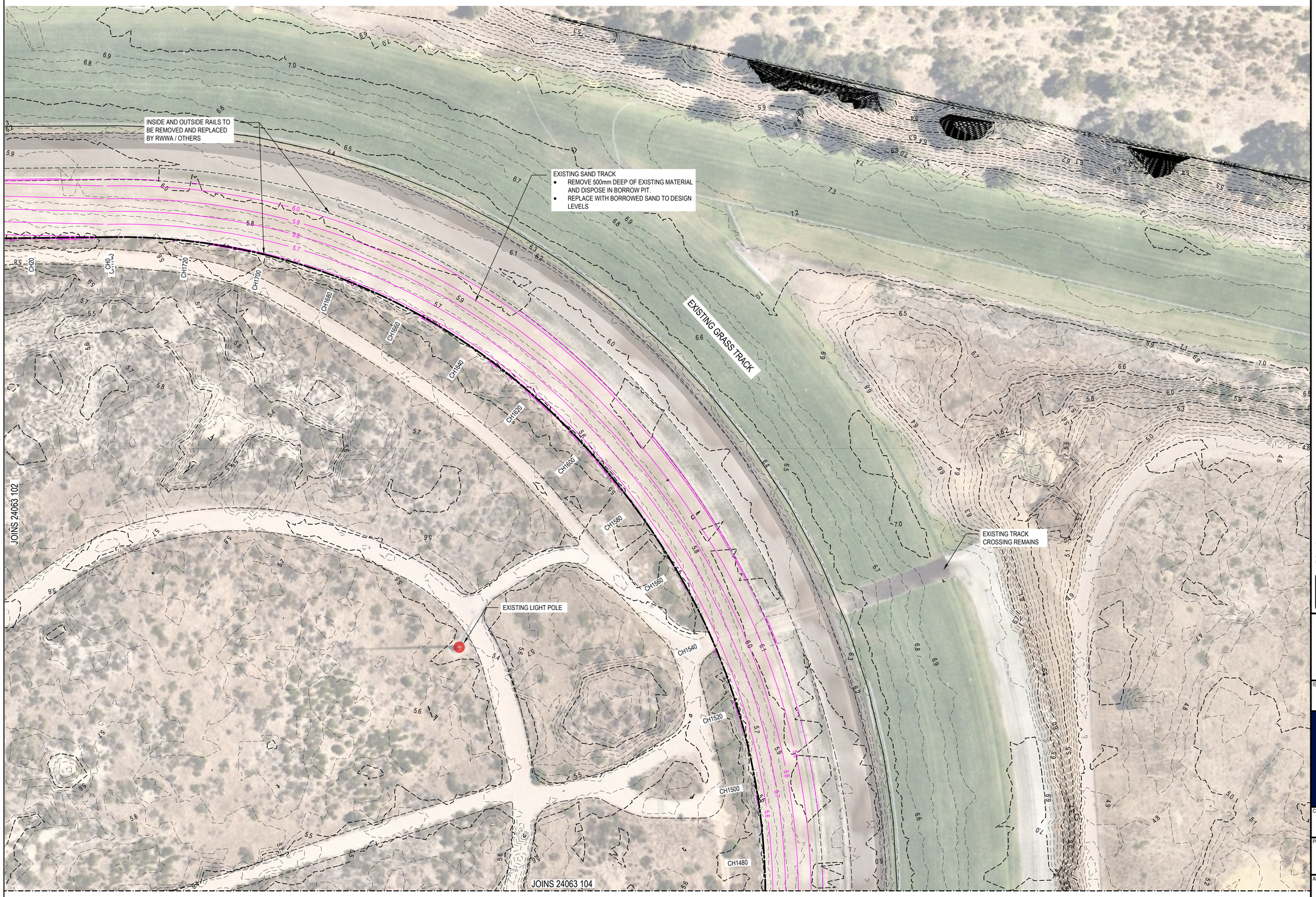

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LEGEND

- 5.6 — DESIGN CONTOUR (0.1m)
- 5.6 — EXISTING LIDAR CONTOUR (0.1m)
- BORROW AND INTERIM STOCKPILE AREA
- STOCKPILE AREA FOR SALVAGED TRACK SAND

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PROJECT No.	DRAWING No.			REVISION
24063	103	0 5 10 15 20 25 SCALE 1:500	A 1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE

JOINS 24063 103

JOINS 24063 105

CH1460

CH1440

CH1420

CH1400

CH1380

CH1360

CH1340

CH1320

CH1300

CH1280

CH1260

CH1240

CH1220

CH1200

CH1180

INSIDE AND OUTSIDE RAILS TO BE REMOVED AND REPLACED BY RWWA / OTHERS

EXISTING TRACK CROSSING REMAINS

EXISTING LIGHT POLE

EXISTING SAND TRACK
- REMOVE 500mm DEEP OF EXISTING MATERIAL AND DISPOSE IN BORROW PIT.
- REPLACE WITH BORROWED SAND TO DESIGN LEVELS

EXISTING GRASS TRACK

LEGEND

- DESIGN CONTOUR (0.1m)
- EXISTING LIDAR CONTOUR (0.1m)
- BORROW AND INTERIM STOCKPILE AREA
- STOCKPILE AREA FOR SALVAGED TRACK SAND

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ADDRESS: 70 STAKEHILL ROAD, PORT KENNEDY WA

DRAWING TITLE: SAND TRACK WORKS 4 OF 6

PROJECT No.	DRAWING No.	SCALE 1:500		REVISION
24063	104	0 5 10 15 20 25	A 1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE

JOINS 24063 312

JOINS 24063 106

JOINS 24063 104

EXISTING PUMP SHED

INSIDE AND OUTSIDE RAILS TO BE REMOVED AND REPLACED BY RWWA / OTHERS

EXISTING SAND TRACK
- REMOVE 500mm DEEP OF EXISTING MATERIAL AND DISPOSE IN BORROW PIT.
- REPLACE WITH BORROWED SAND TO DESIGN LEVELS

EXISTING GRASS TRACK

CH840 CH860 CH880 CH900 CH920 CH940 CH960 CH980 CH1000 CH1020 CH1040 CH1060 CH1080 CH1100 CH1120 CH1140 CH160

LEGEND

- 5.6 — DESIGN CONTOUR (0.1m)
- 5.6 — EXISTING LIDAR CONTOUR (0.1m)
- BORROW AND INTERIM STOCKPILE AREA
- STOCKPILE AREA FOR SALVAGED TRACK SAND

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DRAWING TITLE
SAND TRACK WORKS 5 OF 6

PROJECT No.	DRAWING No.			REVISION
24063	105	0 5 10 15 20 25 SCALE 1:500	A 1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE

JOINS 24063 101

JOINS 24063 105

PROPOSED BORROW AND FILL AREA
- CLEAR VEGETATION AND DISPOSE
- STRIP AND STOCKPILE TOPSOIL
- BORROW REQUIRED SAND MATERIAL TO DEPTH OF 2.2m
- BACKFILL WITH REMOVED TRACK MATERIAL
- RESPREAD TOPSOIL AT COMPLETION

INSIDE AND OUTSIDE RAILS TO BE REMOVED AND REPLACED BY RWWA / OTHERS

EXISTING LIGHT POLE

EXISTING SAND TRACK
- REMOVE 500mm DEEP OF EXISTING MATERIAL AND DISPOSE IN BORROW PIT.
- REPLACE WITH BORROWED SAND TO DESIGN LEVELS

EXISTING GRASS TRACK

CH600 CH620 CH640 CH660 CH680 CH700 CH720 CH740 CH760 CH780 CH800 CH820

LEGEND

- 5.6 — DESIGN CONTOUR (0.1m)
- 5.6 — EXISTING LIDAR CONTOUR (0.1m)
- BORROW AND INTERIM STOCKPILE AREA
- STOCKPILE AREA FOR SALVAGED TRACK SAND

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DRAWING TITLE
SAND TRACK WORKS 6 OF 6

PROJECT No.	DRAWING No.			REVISION
24063	106	0 5 10 15 20 25 SCALE 1:500	A 1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE

DATUM R.L.4

IP 5.600

GRADIENT %: 0.02%

VERTICAL CURVE

PEGGED CHAINAGE	FINISHED SURFACE	RIGHT GUTTER LEVEL	PEGGED C.L. SURFACE LEVEL
1200	5.48	5.93	5.48
1205.36	5.48	5.93	5.59
1220	5.49	5.94	5.53
1240	5.49	5.94	5.54
1258.59	5.49	5.94	5.55
1280	5.5	5.95	5.48
1300	5.5	5.95	5.63
1320	5.51	5.96	5.46
1327.57	5.51	5.96	5.54
1340	5.51	5.96	5.59
1360	5.52	5.97	5.46
1380	5.52	5.97	5.51
1399.07	5.52	5.97	5.52
1420	5.53	5.98	5.53
1440	5.53	5.98	5.46
1442.04	5.53	5.98	5.43
1460	5.54	5.99	5.56
1480	5.54	5.99	5.53
1485.33	5.54	5.99	5.57
1500	5.55	6	5.54
1520	5.55	6	5.45
1540	5.56	6.01	5.67
1555.94	5.56	6.01	5.42
1560	5.56	6.01	5.47
1580	5.56	6.01	5.51
1600	5.57	6.02	5.47
1615.42	5.57	6.02	5.42
1620	5.57	6.02	5.39
1640	5.58	6.03	5.52
1660	5.58	6.03	5.57
1680	5.59	6.04	5.55
1698.88	5.59	6.04	5.54
1720	5.6	6.05	5.54
1740	5.6	6.05	5.59

CURVE DATA: STR322.8m | R-159.6m | R-165.4m | R-186.5m | R-162.1m | R-177.1m | R-165.2m | R-192m | R-164.1m | R-161.9m

SAND TRACK LONG SECTION

DATUM R.L.4

GRADIENT %: 0.02%

VERTICAL CURVE

PEGGED CHAINAGE	FINISHED SURFACE	RIGHT GUTTER LEVEL	PEGGED C.L. SURFACE LEVEL
600	5.35	5.8	5.31
620	5.35	5.8	5.31
640	5.36	5.81	5.3
660	5.36	5.81	5.43
680	5.37	5.82	5.44
684.58	5.37	5.82	5.46
700	5.37	5.82	5.42
720	5.37	5.82	5.37
740	5.38	5.83	5.42
760	5.38	5.83	5.43
780	5.39	5.84	5.43
800	5.39	5.84	5.48
818.79	5.4	5.85	5.4
840	5.4	5.85	5.31
860	5.41	5.86	5.32
880	5.41	5.86	5.25
882.55	5.41	5.86	5.26
900	5.41	5.86	5.26
920	5.42	5.87	5.35
940	5.42	5.87	5.34
960	5.43	5.88	5.33
980	5.43	5.88	5.33
1000	5.44	5.89	5.34
1020	5.44	5.89	5.24
1040	5.45	5.9	5.36
1060	5.45	5.9	5.31
1080	5.45	5.9	5.46
1100	5.46	5.91	5.49
1120	5.46	5.91	5.38
1140	5.47	5.92	5.44
1160	5.47	5.92	5.5
1180	5.48	5.93	5.46
1200	5.48	5.93	5.48

CURVE DATA: R-211.8m | R-113.5m | R-186.4m | R-149m | R-227.7m | STR322.8m

SAND TRACK LONG SECTION

IP 5.600

IP 5.281

DATUM R.L.4

GRADIENT %: -0.11% | 0.02%

VERTICAL CURVE

PEGGED CHAINAGE	FINISHED SURFACE	RIGHT GUTTER LEVEL	PEGGED C.L. SURFACE LEVEL
0	5.6	6.05	5.58
20	5.58	6.03	5.46
40	5.56	6.01	5.49
60	5.53	5.98	5.45
80	5.51	5.96	5.4
100	5.49	5.94	5.45
120	5.47	5.92	5.34
140	5.45	5.9	5.41
160	5.43	5.88	5.32
180	5.4	5.85	5.3
200	5.38	5.83	5.38
220	5.36	5.81	5.3
240	5.34	5.79	5.26
260	5.32	5.77	5.34
280	5.3	5.75	5.32
293.88	5.28	5.73	5.28
300	5.28	5.73	5.24
320	5.29	5.74	5.27
340	5.29	5.74	5.26
343.27	5.29	5.74	5.19
360	5.3	5.75	5.27
365.42	5.3	5.75	5.28
380	5.3	5.75	5.25
400	5.3	5.75	5.34
416.48	5.31	5.76	5.35
420	5.31	5.76	5.36
440	5.31	5.76	5.38
460	5.32	5.77	5.36
465.2	5.32	5.77	5.33
480	5.32	5.77	5.26
500	5.33	5.78	5.41
520	5.33	5.78	5.31
528.15	5.33	5.78	5.34
540	5.34	5.79	5.33
560	5.34	5.79	5.39
577.81	5.34	5.79	5.31
580	5.34	5.79	5.34
600	5.35	5.8	5.31

CURVE DATA: STR343.3m | R-94m | R-204.1m | R-168m | R-173.4m | R-151.8m | R-211.8m

SAND TRACK LONG SECTION

0 10 20 30 40 50
SCALE 1:1000 HORIZONTAL

0 1 2 3 4 5
SCALE 1:100 VERTICAL

METADATA
SURVEY PROVIDED BY: THOMPSON SURVEYING CONSULTANTS
SURVEY DATE: 17/3/2023
PROJECTION ZONE: MGA94
HEIGHT DATUM: AHD
WAPC No: ----

ISSUE
ISSUED AS PRELIMINARY

EDGELOE Engineering

CLIENT: RWWA

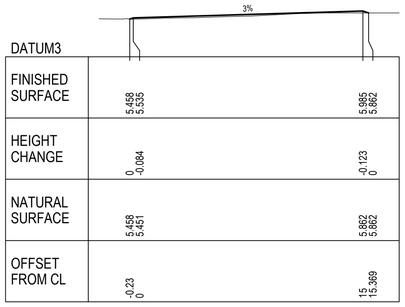
PROJECT: LARK HILL RACE COURSE - SAND TRACK

ADDRESS: 70 STAKEHILL ROAD, PORT KENNEDY WA

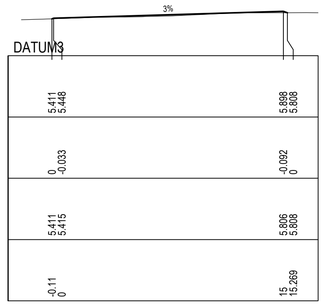
DRAWING TITLE: SAND TRACK LONG SECTIONS

PROJECT No.	DRAWING No.			REVISION
24063	401		A1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE



CH 60



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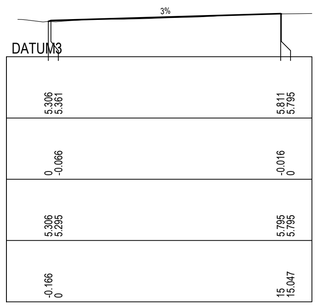

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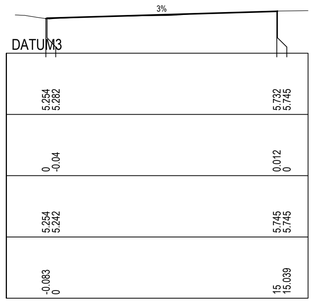

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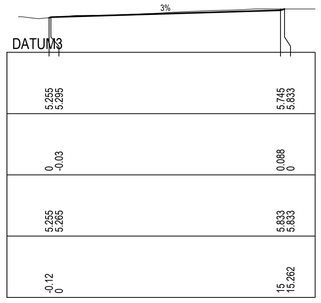

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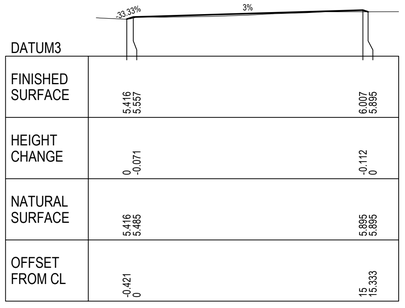

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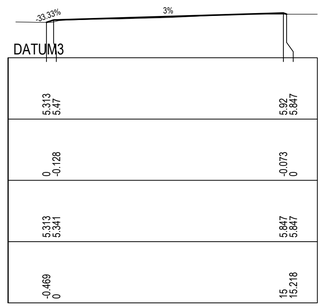

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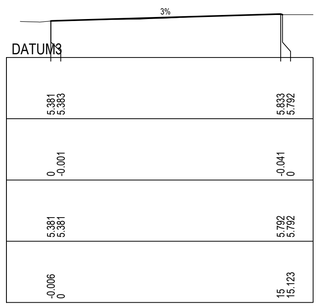

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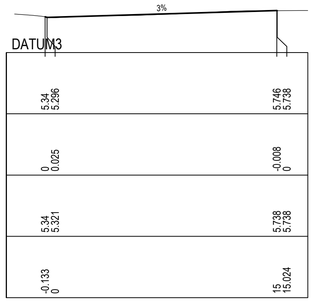

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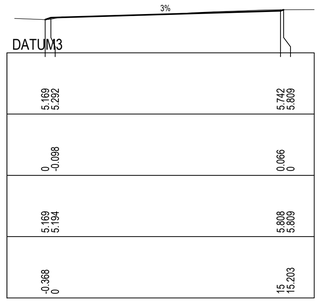

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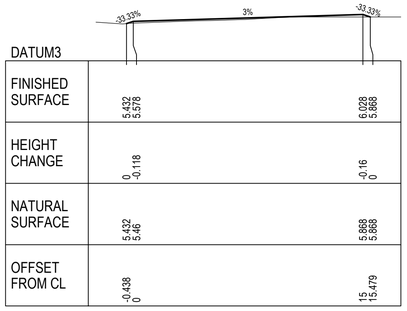

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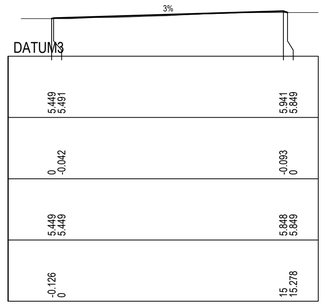

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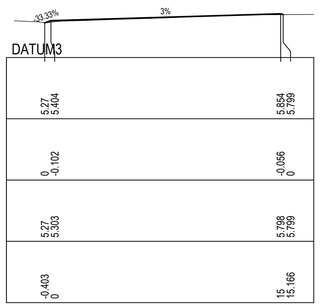

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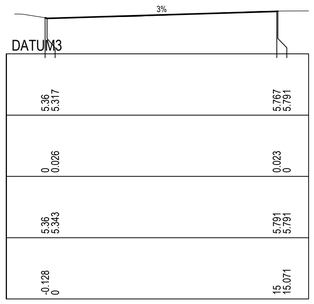

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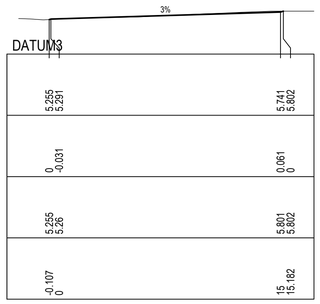

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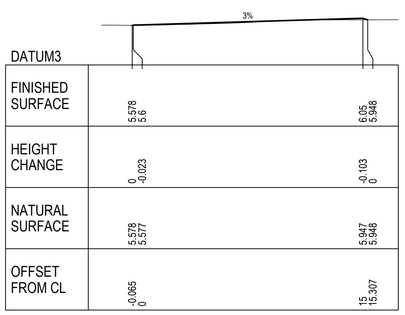

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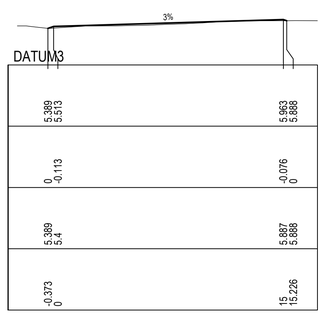

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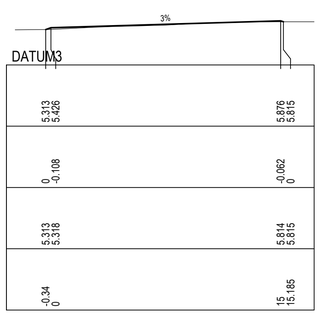

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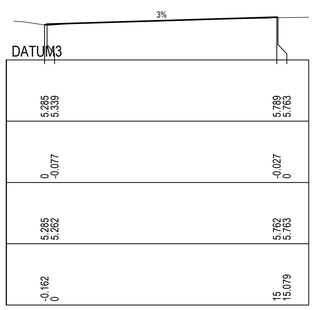

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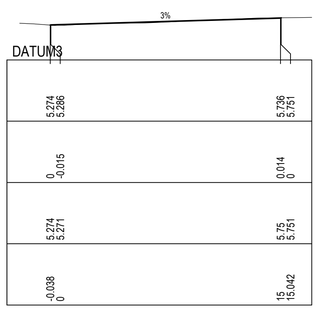

CH 320

SAND TRACK CROSS SECTIONS

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

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METADATA

SURVEY PROVIDED BY:	THOMPSON SURVEYING CONSULTANTS
SURVEY DATE:	17/3/2023
PROJECTION ZONE:	MGA94
HEIGHT DATUM:	AHD
WAPC No:	----

ISSUE
ISSUED AS PRELIMINARY

EDGELOE Engineering

CLIENT
RWWA

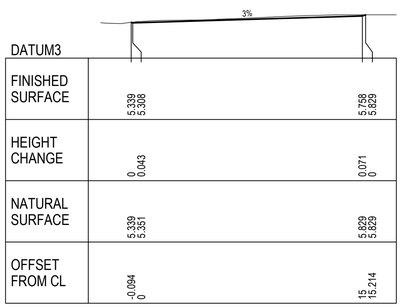
PROJECT
LARK HILL RACE COURSE - SAND TRACK

ADDRESS
70 STAKEHILL ROAD, PORT KENNEDY WA

DRAWING TITLE
SAND TRACK CROSS SECTIONS 1 OF 6

PROJECT No.	DRAWING No.			REVISION
24063	501	0 2 4 6 8 10 SCALE 1:200	A 1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE



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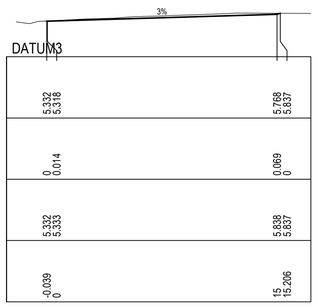

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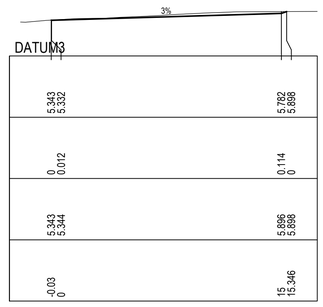

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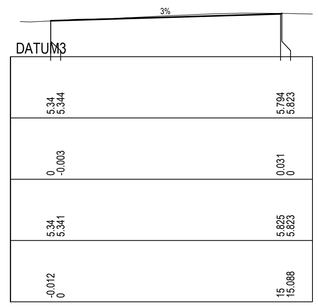

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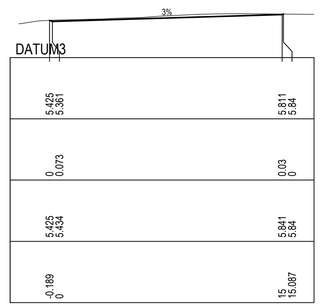

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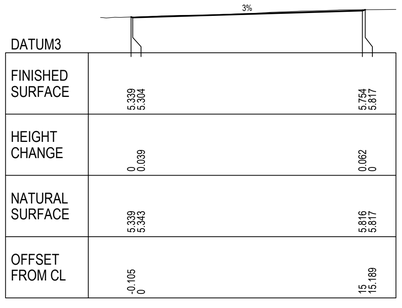

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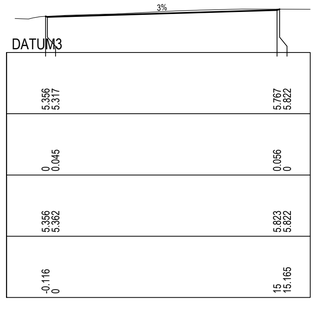

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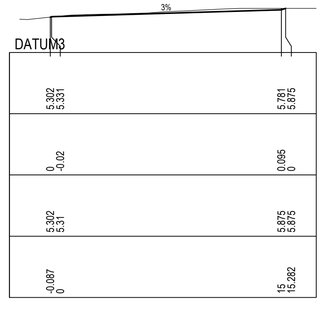

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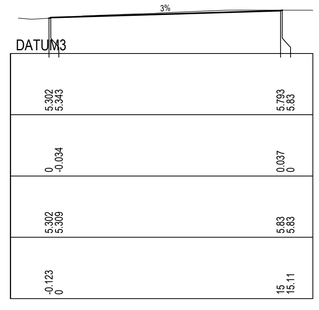

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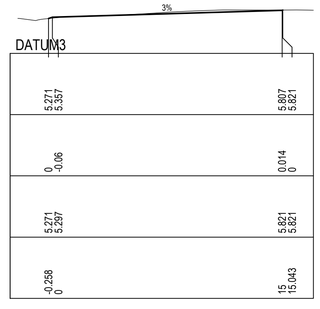

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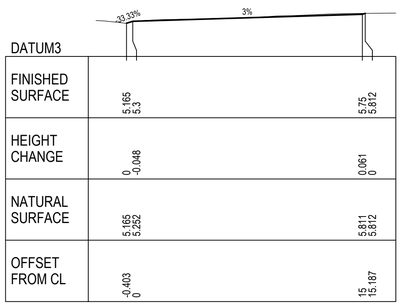

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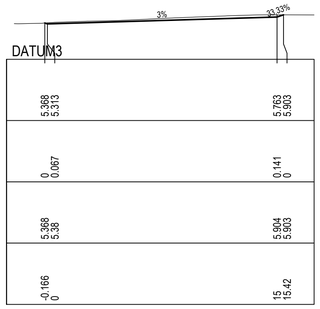

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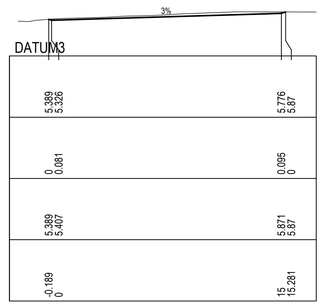

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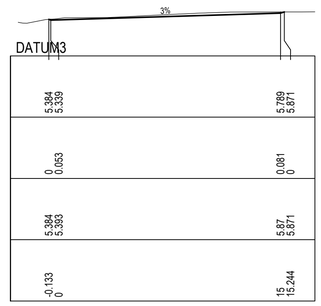

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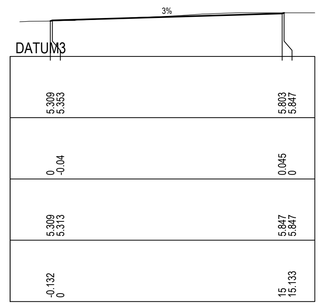

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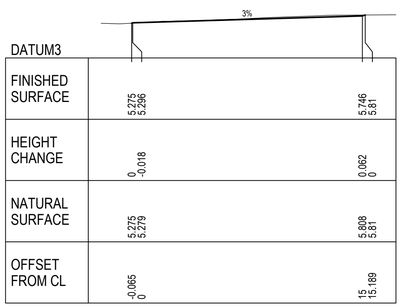

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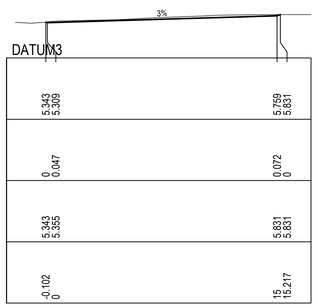

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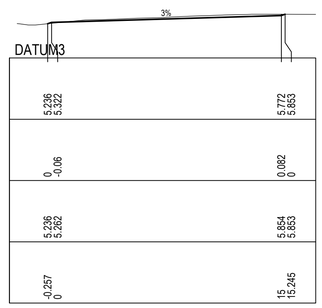

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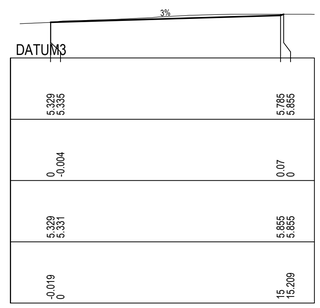

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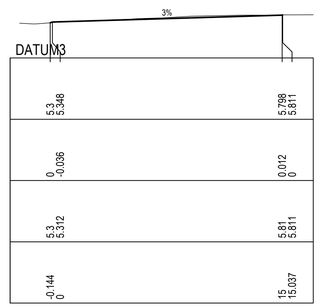

CH 600

SAND TRACK CROSS SECTIONS

DISCLAIMER
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BEFORE YOU DIG www.byda.com.au

METADATA

SURVEY PROVIDED BY:	THOMPSON SURVEYING CONSULTANTS
SURVEY DATE:	17/3/2023
PROJECTION ZONE:	MGA94
HEIGHT DATUM:	AHD
WAPC No:	----

ISSUE
ISSUED AS PRELIMINARY

EDGELOE Engineering

CLIENT
RWWA

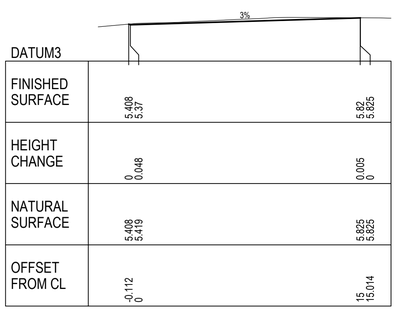
PROJECT
LARK HILL RACE COURSE - SAND TRACK

ADDRESS
70 STAKEHILL ROAD, PORT KENNEDY WA

DRAWING TITLE
SAND TRACK CROSS SECTIONS 2 OF 6

PROJECT No.	DRAWING No.	SCALE 1:200		REVISION
24063	502	0 2 4 6 8 10	A 1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE



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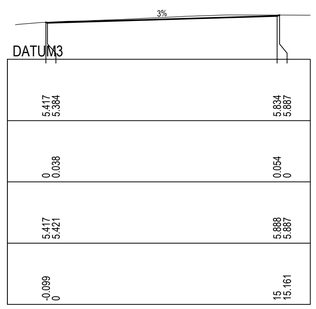
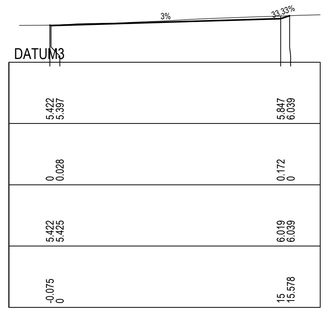


CH 760.72



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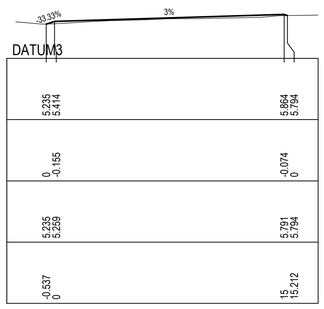

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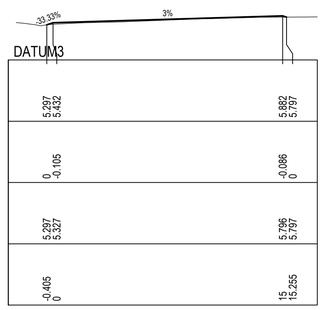

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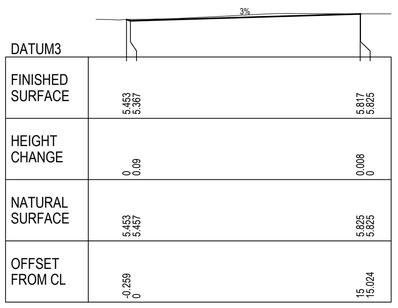

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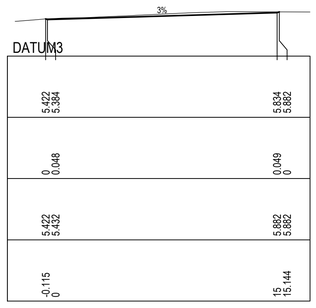

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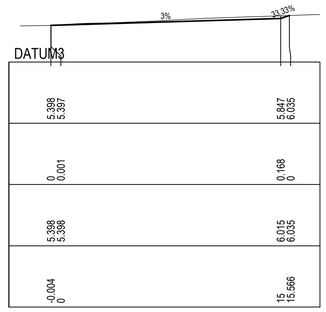

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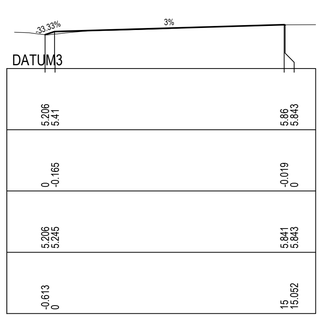

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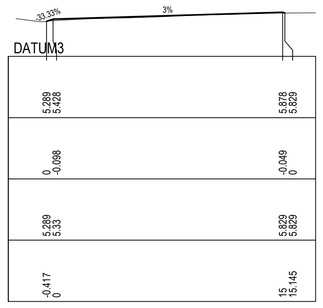

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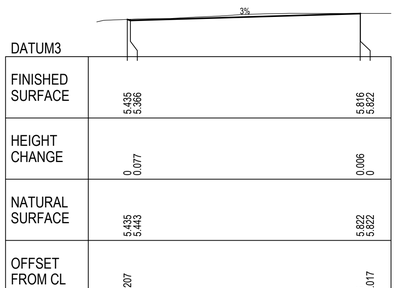

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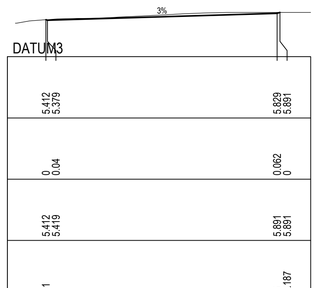

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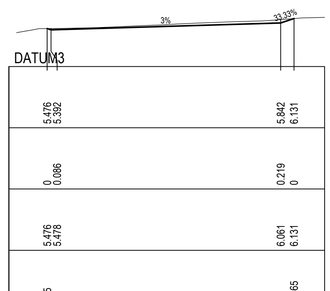

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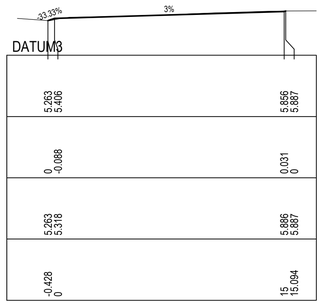

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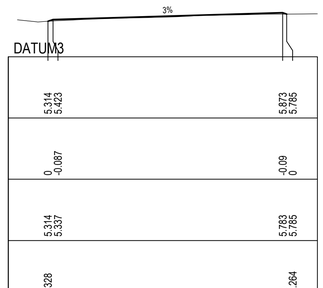

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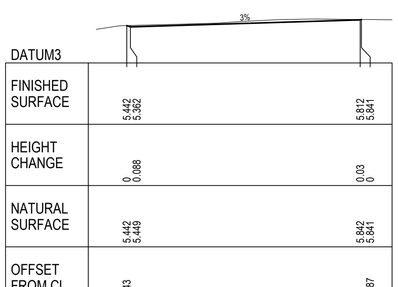

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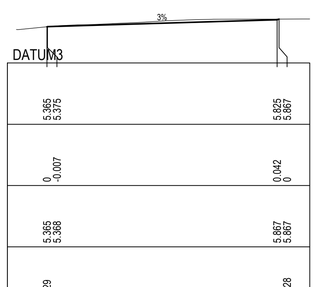

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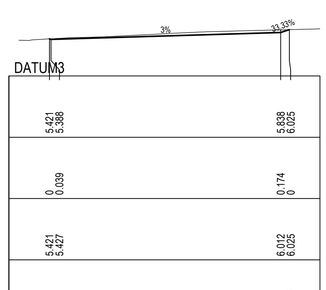

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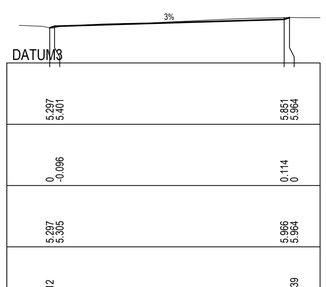
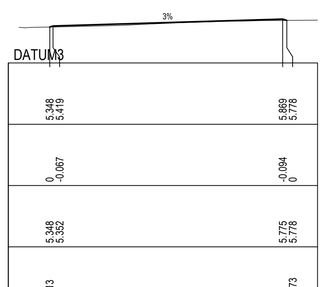


CH 840



CH 920

SAND TRACK CROSS SECTIONS

METADATA

SURVEY PROVIDED BY:	THOMPSON SURVEYING CONSULTANTS
SURVEY DATE:	17/3/2023
PROJECTION ZONE:	MGA94
HEIGHT DATUM:	AHD
WAPC No:	----

ISSUE
ISSUED AS PRELIMINARY

EDGELOE Engineering

CLIENT
RWWA

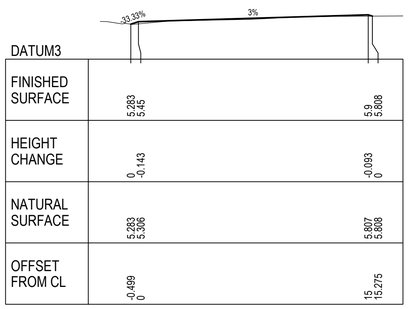
PROJECT
LARK HILL RACE COURSE - SAND TRACK

ADDRESS
70 STAKEHILL ROAD, PORT KENNEDY WA

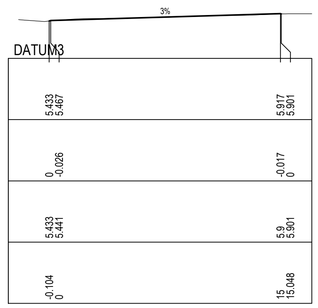
DRAWING TITLE
SAND TRACK CROSS SECTIONS 3 OF 6

PROJECT No.	DRAWING No.			REVISION
24063	503	0 2 4 6 8 10 SCALE 1:200	A 1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE



CH 1060



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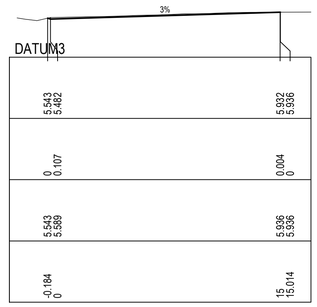
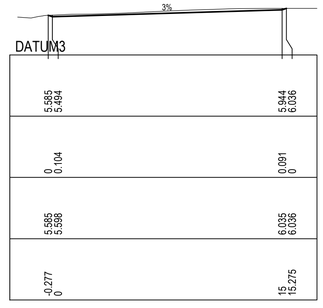


CH 1205.36



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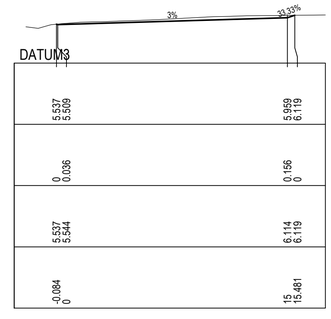

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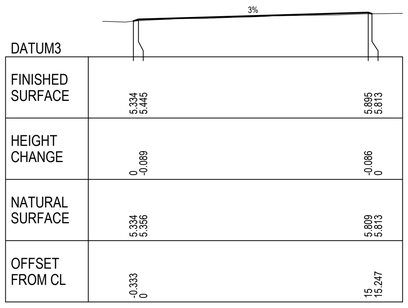

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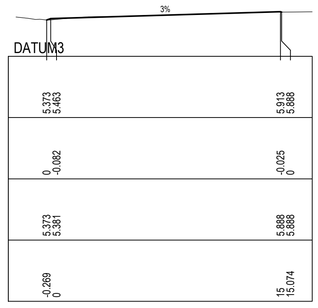

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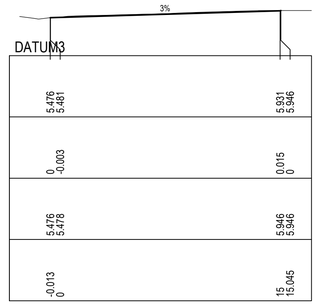
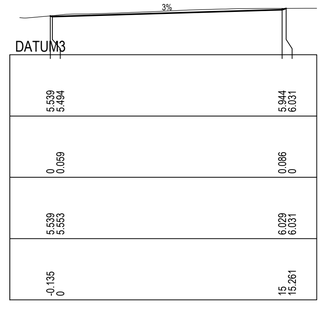


CH 1200



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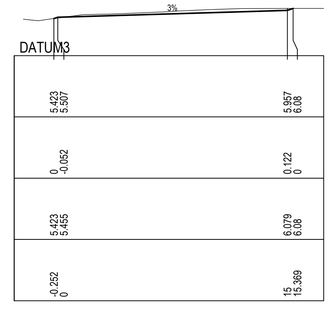
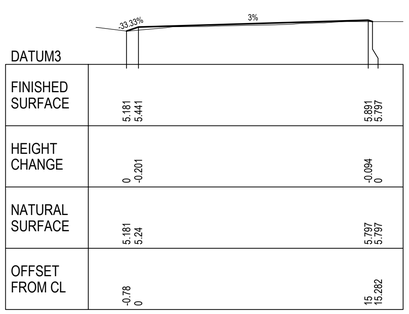


CH 1320



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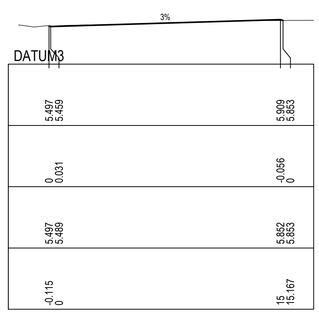
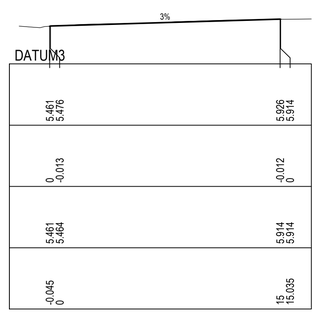
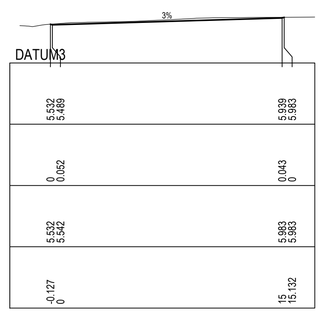


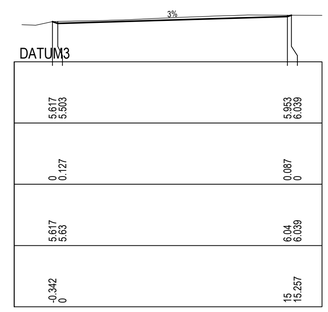
CH 1100



CH 1180



CH 1240



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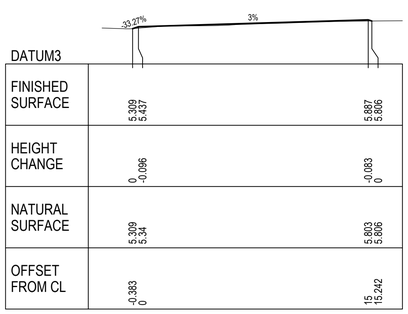

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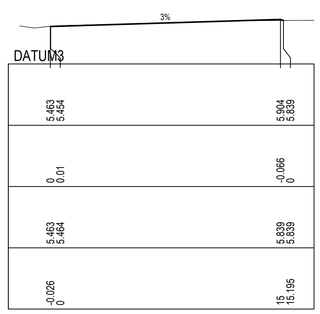
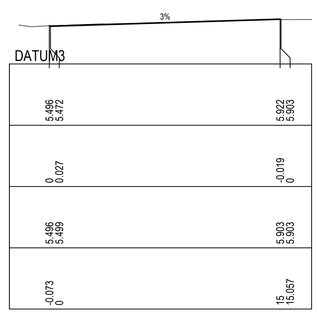
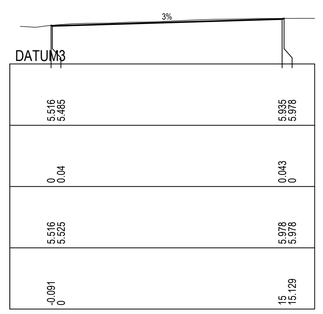


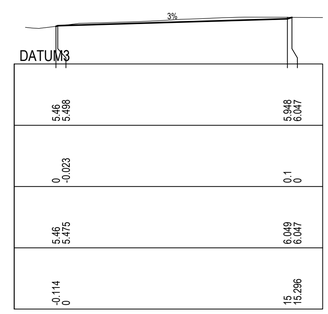
CH 1080



CH 1160



CH 1220



CH 1280

SAND TRACK CROSS SECTIONS

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

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METADATA

SURVEY PROVIDED BY:	THOMPSON SURVEYING CONSULTANTS
SURVEY DATE:	17/3/2023
PROJECTION ZONE:	MGA94
HEIGHT DATUM:	AHD
WAPC No:	----

ISSUE
ISSUED AS PRELIMINARY

EDGELOE Engineering

CLIENT
RWWA

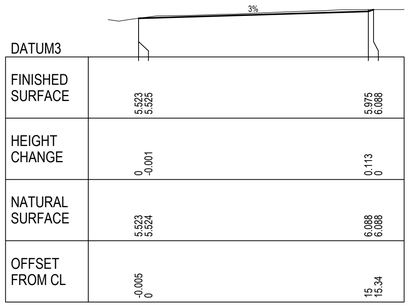
PROJECT
LARK HILL RACE COURSE - SAND TRACK

ADDRESS
70 STAKEHILL ROAD, PORT KENNEDY WA

DRAWING TITLE
SAND TRACK CROSS SECTIONS 4 OF 6

PROJECT No.	DRAWING No.	SCALE 1:200		REVISION
24063	504	0 2 4 6 8 10	A1	A

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE



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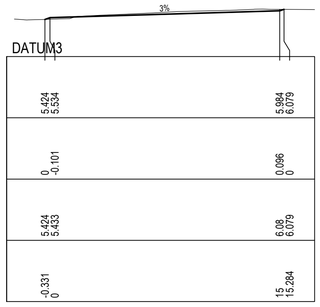

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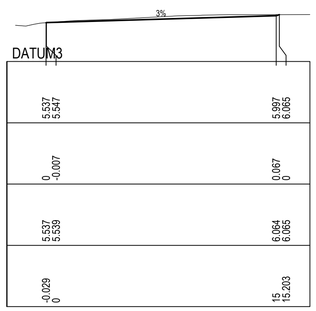
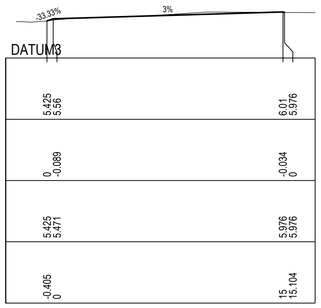
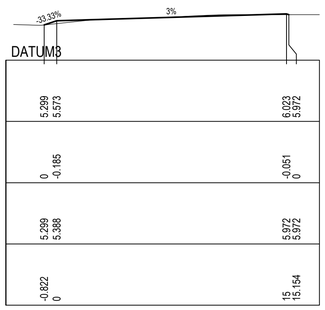


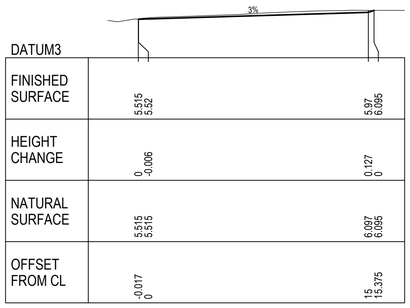
CH 1500



CH 1560



CH 1620



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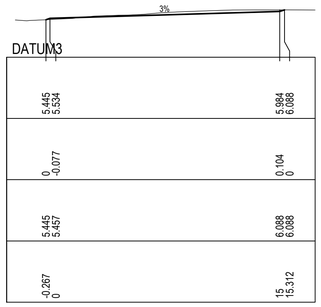
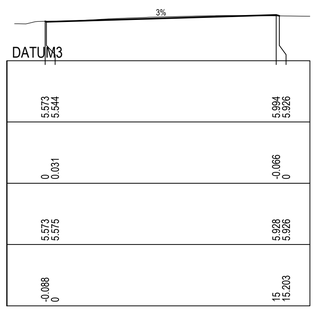


CH 1440



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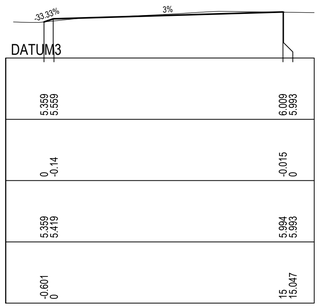

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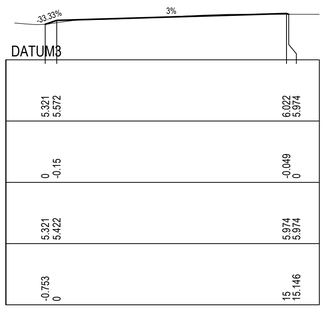

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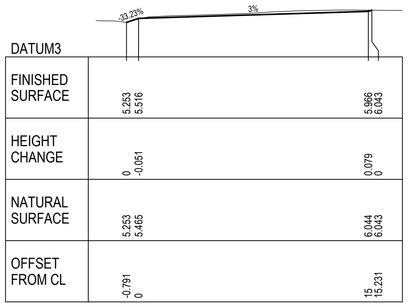
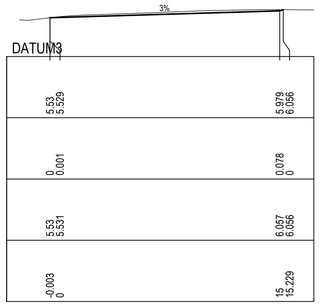


CH 1360



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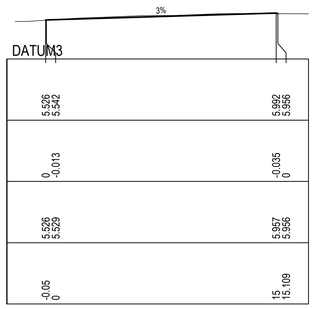
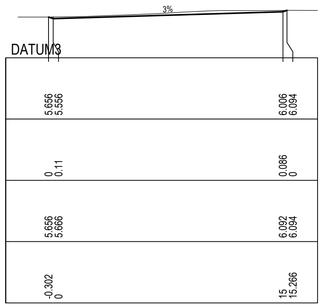


CH 1480



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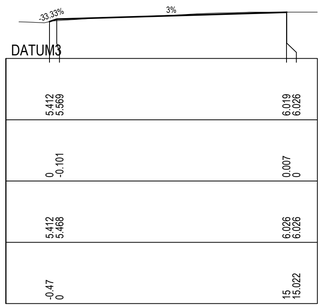

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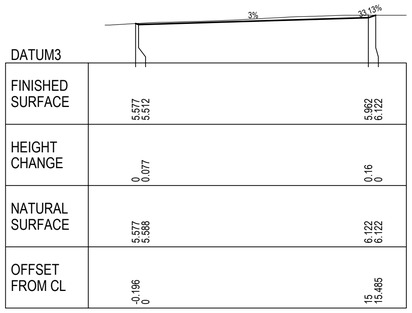

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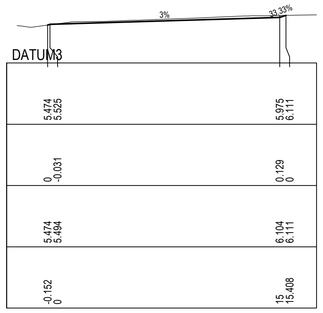

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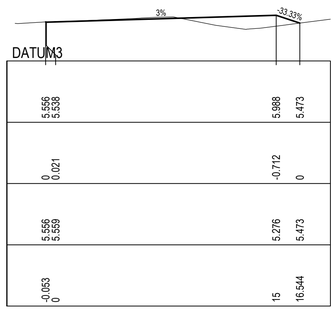

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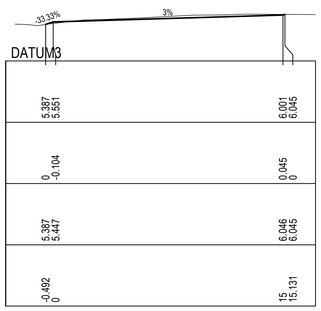

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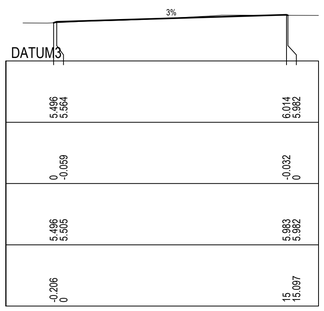

CH 1580

SAND TRACK CROSS SECTIONS

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

BEFORE YOU DIG www.byda.com.au

METADATA

SURVEY PROVIDED BY:	THOMPSON SURVEYING CONSULTANTS
SURVEY DATE:	17/3/2023
PROJECTION ZONE:	MGA94
HEIGHT DATUM:	AHD
WAPC No:	----

ISSUE
ISSUED AS PRELIMINARY

EDGELOE Engineering

CLIENT
RWWA

PROJECT
LARK HILL RACE COURSE - SAND TRACK

ADDRESS
70 STAKEHILL ROAD, PORT KENNEDY WA

DRAWING TITLE
SAND TRACK CROSS SECTIONS 5 OF 6

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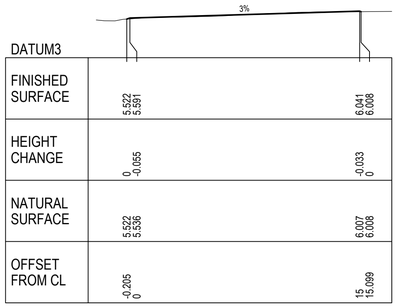

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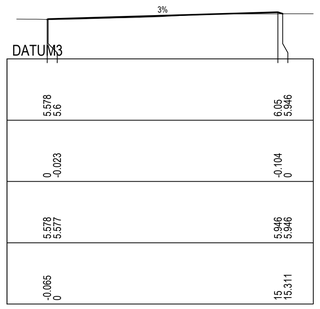

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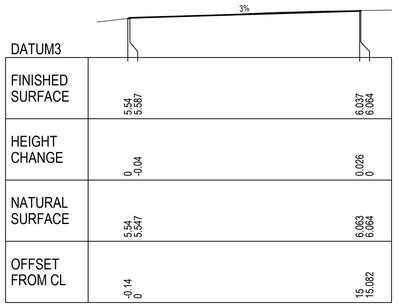

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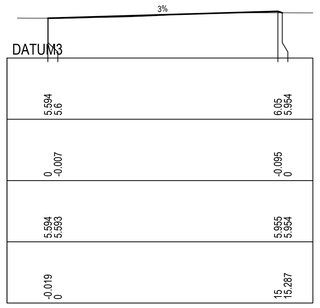

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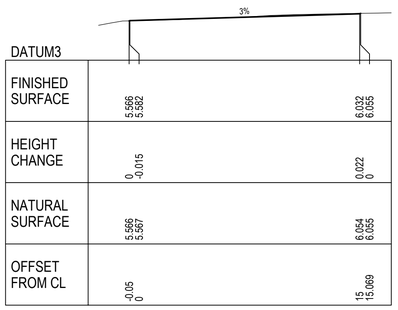

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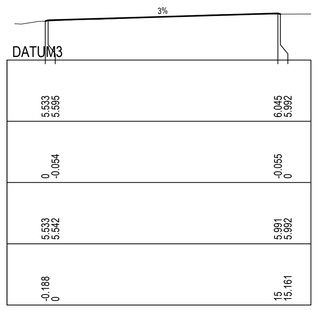

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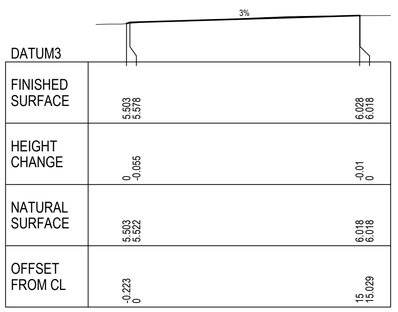

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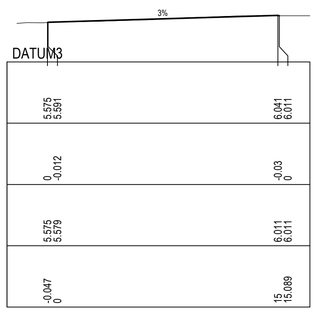

CH 1700

SAND TRACK CROSS SECTIONS

A	22/11/24	ISSUED FOR APPROVAL	KJB	RWE	RWE

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METADATA

SURVEY PROVIDED BY:	THOMPSON SURVEYING CONSULTANTS
SURVEY DATE:	17/3/2023
PROJECTION ZONE:	MGA94
HEIGHT DATUM:	AHD
WAPC No:	----

ISSUE
ISSUED AS PRELIMINARY

EDGELOE Engineering

CLIENT
RWWA

PROJECT
LARK HILL RACE COURSE - SAND TRACK

ADDRESS
70 STAKEHILL ROAD, PORT KENNEDY WA

DRAWING TITLE
SAND TRACK CROSS SECTIONS 6 OF 6

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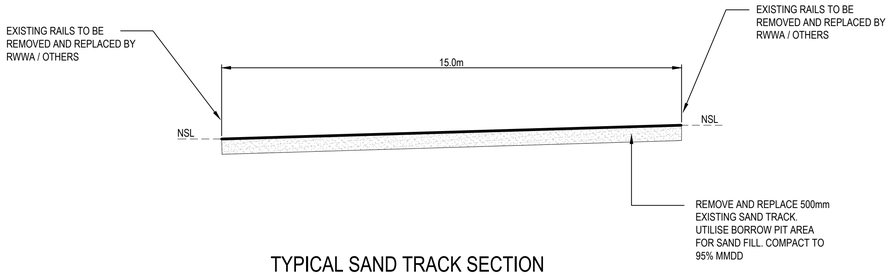

TYPICAL SAND TRACK SECTION

1:100

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METADATA

SURVEY PROVIDED BY:	THOMPSON SURVEYING CONSULTANTS
SURVEY DATE:	17/3/2023
PROJECTION ZONE:	MGA94
HEIGHT DATUM:	AHD
WAPC No:	----

ISSUE

ISSUED AS PRELIMINARY

EDGELOE Engineering

CLIENT

RWWA

PROJECT

LARK HILL RACE COURSE - SAND TRACK

ADDRESS

70 STAKEHILL ROAD, PORT KENNEDY WA

DRAWING TITLE

STANDARD DETAILS PLAN

PROJECT No.	DRAWING No.			REVISION
24063	801		A 1	A

Appendix 2 City of Rockingham Correspondence

From: Angela Mathew
To: Gabriele Semiotaite
Subject: [EXTERNAL] RE: Lark Hill Training Track - DA enquiry
Date: Thursday, 7 November 2024 2:06:25 PM
Attachments: image002.jpg
image003.png
image245837.gif
image914079.png
image837064.png
image359260.png
image438015.png

Good afternoon Gabriele

Thank you for your email enquiry regarding the above-mentioned property.

The City confirms that no Development Approval is required for the proposed works on this site, as it is identified as a MRS Reserve.

Should you have any further questions, please let me know.

Kind regards
Angela

Angela Mathew - Planning Assistant

PO Box 2142 Rockingham DC WA 6967
Civic Boulevard Rockingham Western Australia
telephone **+61 8 9528 0461** facsimile **+61 8 9592 1705**
email **Angela.Mathew@rockingham.wa.gov.au**
web **rockingham.wa.gov.au**

From: Gabriele Semiotaite <Gabriele.Semiotaite@rwwa.com.au>
Sent: Wednesday, 30 October 2024 2:25 PM
To: City of Rockingham <customer@rockingham.wa.gov.au>
Subject: Lark Hill Training Track - DA enquiry
Importance: High

FAO: Planning Department

RWWA has approved the Lark Hill training track project to proceed to detailed design, tender, and construction.

The project involves replacing the existing pavement (crushed rock) surface on the training track with clean sand sourced from within the infield area on-site. There will be no structural or other construction works involved. Could you please advise if a Development Approval (DA) is required for this work? A plan is attached for reference.

We are currently reviewing requirements and will obtain approval from the Department of Environmental for vegetation clearing as needed. The anticipated excavation area for the sand is 200m x 100m x 1m deep. Geotechnical and environmental surveys have confirmed that the sand is suitable and that the excavation will remain well above the water table.

Thank you for your assistance, and I look forward to your response.

Best regards,

Gabriele Semiotaite

Project Manager

14 Hasler Road, Osborne Park WA 6017

Mobile 0406 044 493
Email Gabriele.Semiotaite@rwwa.com.au

rwwa.com.au | tabtouch.com.au

them resupplied..

4. The views represented in this email are those of the author and do not necessarily represent those of Racing & Wagering WA unless this is clearly indicated

Appendix 3 Flora and Vegetation Assessment (FVC, 2023)

FLORA AND VEGETATION ASSESSMENT

LARK HILL RACETRACK

COTERRA ENVIRONMENT

JANUARY 2024

Focused Vision Consulting Pty Ltd
ABN 25 605 804 500

Please direct all inquiries to:
Focused Vision Consulting Pty Ltd
8/83 Mell Road, SPEARWOOD WA 6163
P: 08 6179 4111
E: admin@focusedvision.com.au

Document History

Rev.	Author	Reviewed	Approved	Date
A	Taryn Brebner Botanist Aishwarya Gujarathi Graduate Botanist/Ecologist	John Braid Principal Environmental Consultant		21/12/2023
B	Taryn Brebner Botanist Aishwarya Gujarathi Graduate Botanist/Ecologist	John Braid Principal Environmental Consultant	Kellie Bauer-Simpson Principal Ecologist	11/01/2024
0	Taryn Brebner Botanist Aishwarya Gujarathi Graduate Botanist/Ecologist	Racing and Wagering WA Coterra Environment	Kellie Bauer-Simpson Principal Ecologist	08/05/2024

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FIGURES

TABLES

EXECUTIVE SUMMARY

Coterra Environment (Coterra) is assisting the Racing and Wagering WA with potential upgrade works at the Lark Hill racetrack (the study area) (**Figure 1**). Focused Vision Consulting Pty Ltd (FVC) was commissioned by Coterra, to undertake a spring flora and vegetation survey of the area inside the existing Lark Hill racetrack. This report presents the findings of the assessment.

A detailed flora and vegetation assessment was conducted in the study area during spring 2023, by suitably experienced personnel from FVC. The assessment, incorporating a desktop assessment and a field survey, was conducted in accordance with the Environmental Protection Authority (EPA) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (2016a).

The key findings and conclusions arising from the flora and vegetation assessment within the study area are as follows:

- The study area has been subject to historic disturbances with the whole area having been previously cleared, and impacted by ongoing equine activities.
- The entire study area is within Bush Forever site 356 and is also classified as an Environmentally Sensitive Area (ESA).
- No Threatened or Priority flora were recorded during the survey.
- One Declared Pest (DP) plant listed under the *Biosecurity and Agriculture Management Act 2007* (BAM Act), **Echium plantagineum* (Paterson's Curse) was recorded.
- A total of two vegetation units were defined and mapped within the study area.
- Both of the vegetation units (ArMs and TdFc) may be considered to be of regional significance, due to occurring within an ESA, with the latter also considered to potentially be of local significance due to occurring as a small, isolated community, and having a limited local extent and distribution.
- Two Commonwealth or State-listed Threatened Ecological Communities (TECs) and/or Priority Ecological Communities (PECs) or their buffer were identified through the database search as potentially occurring within the study area, however due to the degraded nature of the site, none are represented in the study area.
- Vegetation condition within the study area ranges from 'Completely Degraded' to 'Good', with only 0.43% in 'Good' condition and the remainder in 'Degraded' or poorer condition.

1. INTRODUCTION

1.1 BACKGROUND

Coterra Environment (Coterra) is assisting Racing and Wagering WA with potential upgrade works at the Lark Hill racetrack (the study area) (**Figure 1**).

Focused Vision Consulting Pty Ltd (FVC) was commissioned by Coterra, to undertake a spring flora and vegetation survey of the area inside the existing Lark Hill racetrack, in accordance with the Environmental Protection Authority's Technical Guidance for flora and vegetation surveys for environmental impact assessment (EPA 2016a).

This report presents the findings of the spring flora and vegetation survey.

1.2 LOCATION

The study area is located approximately 47 kilometres (km) south of the Perth Central Business District (CBD) in the suburb of Port Kennedy (**Figure 1**), within the City of Rockingham, and occupies an area of 21.5 hectares (ha).

1.3 SCOPE OF WORK

The scope of work was as follows:

- Complete a desktop assessment to evaluate the study area prior to undertaking field surveys.
- Undertake a detailed flora and vegetation field assessment within the study area in accordance with the Technical Guidance (EPA 2016a).

Figure 1 - Survey Area

FOCUSED VISION consulting

2. LEGISLATIVE CONTEXT

The flora and vegetation assessments were conducted in accordance with the following legislation:

- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- Western Australian *Environmental Protection Act 1986* (EP Act)
- Western Australian *Biodiversity Conservation Act 2016* (BC Act).

The assessments complied with requirements for environmental survey and reporting in Western Australia, as outlined in:

- Environmental Protection Authority (EPA) (2008) Guidance Statement No. 33: *Environmental Guidance for Planning and Development*
- EPA (2016a) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*
- EPA (2016b) *Environmental Factor Guideline – Flora and Vegetation*.

2.1 THREATENED AND PRIORITY FLORA

The Department of Biodiversity, Conservation and Attractions (DBCA) assigns conservation status to endemic plant species that are geographically restricted to few known populations or threatened by local processes. Allocating conservation status to plant species assists in protecting populations and conserving species from potential threats.

The BC Act provides a statutory basis for the listing of threatened species, specially protected species, TECs, critical habitat and key threatening processes (DBCA 2022). Although not awarded any statutory protection, DBCA also maintains the Priority flora list, for species of conservation concern. Priority flora are given consideration in environmental impact assessments (EIAs) and in the assessment of clearing permit applications, in accordance with the ten clearing principles (DER 2014). Therefore, both Threatened and Priority flora are important focuses of surveys conducted to inform the EIA process, and their definitions are presented in **Table 1**.

Table 1 - Definitions of Threatened and Priority Flora Species (DBCA 2020a)

Conservation Code	Category Description
T	**Threatened Species** Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act). Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
P1	**Priority 1 – Poorly Known Species** Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
P2	**Priority 2 – Poorly Known Species** Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
P3	**Priority 3 – Poorly Known Species** Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
P4	**Priority 4 – Rare, Near Threatened and other species in need of monitoring** (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Under the EPBC Act, actions that have, or are likely to have, a significant impact on a matter of national environmental significance (MNES) require approval from the Federal Minister for the Environment (Department of the Environment 2013).

Categories of threatened species defined under the EPBC Act are summarised in **Table 2**.

Table 2 - Categories of EPBC Act Threatened Species (DCCEEW 2022)

Conservation Code	Category
EX	**Extinct** Species where "there is no reasonable doubt that the last member of the species has died" (section 179(1) of the EPBC Act).
EW	**Extinct in the Wild** Species that "is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form", and listing is otherwise in accordance with the ministerial (section 179(2) of the EPBC Act).
CR	**Critically Endangered** Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines".
EN	**Endangered** Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria" (section 179(3) of the EPBC Act).
VU	**Vulnerable** Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria" (section 179(5) of the EPBC Act).
MI	**Migratory species** Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; of the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Published as migratory birds protected under an international agreement under schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice 2018.
CD	**Species of special conservation interest (conservation dependent fauna)** Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with section 179(6) of the EPBC Act.

Any species listed in State and Commonwealth legislation as being of significance is said to be a significant species. This incorporates species that are endangered, vulnerable and rare, or covered by international conventions. Significance is not limited to species covered by State and Commonwealth legislation and also includes species of local significance and species showing significant range extensions or at the edge of their known range.

2.2 THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES

Ecological communities are naturally occurring assemblages of organisms that occur in a particular type of habitat. A TEC means an ecological community that is listed under either the BC Act or the EPBC Act as a critically endangered, endangered or vulnerable ecological community, which are subject to processes that threaten to destroy or significantly modify the ecological community across its range (DBCA 2023). An ecological community may be listed as a TEC under the EPBC Act or the BC Act in one of the following categories: Critically Endangered (CR), Endangered (EN) or Vulnerable (VU). Under the BC Act, TECs were gazetted in the West Australian Government Gazette on 26 May 2023 (State of Western Australia 2023). TECs in WA are protected under the State BC Act and some are also protected under the Commonwealth EPBC Act.

TECs under the EPBC Act are assessed by the Threatened Species Scientific Committee (TSSC) and listed on the Department of Climate Change, Energy, the Environment and Water (DCCEEW) Species Profiles and Threats (SPRAT) Database, and in the Protected Matters Search Tool (DCCEEW 2023a; b).

Additional to TECs, ecological communities that are considered to be potentially of conservation significance (and potentially TECs) that do not currently meet survey criteria or that are not adequately defined, are rare but not threatened, have been recently removed from the TEC list or require regular monitoring, are considered to be PECs (DEC 2013) and are required to be taken into consideration during environmental impact assessments.

2.3 VEGETATION SIGNIFICANCE

2.3.1 Nationally Significant Vegetation

Vegetation communities may be of National significance where they support the following Commonwealth-listed Matters of National Environmental Significance (MNES):

- populations of Threatened (EPBC-listed) species
- TECs listed as nationally (EPBC) significant
- RAMSAR Wetlands of International Importance (DEWHA 2013).

2.3.2 State Significant Vegetation

Vegetation communities may be of State significance where they:

- support State-listed Threatened flora, fauna and TECs afforded protection under the BC Act (Del Marco *et al.* 2004; EPA 2008)
- occur within the State-managed conservation estate (areas protected under *the Conservation and Land Management Act 1984*) or areas that have been formally recommended by DBCA for inclusion in the State conservation estate (EPA 2008).

2.3.3 Regionally Significant Vegetation

Vegetation communities may be considered regionally significant where they:

- support populations of Priority Flora or ecological communities (WAPC 2000; EPA 2016b)
- are formally protected or recognised as Environmentally Sensitive Areas (ESAs), or under planning schemes for conservation, such as Bush Forever (State of Western Australia 2005; EPA 2008)
- support conservation category wetlands including associated vegetation (Government of Western Australia 1997; WAPC 2000)
- maintain important ecological processes (EPA 2016b)

- contain flora species exhibiting range extensions and undescribed species (EPA 2016b)
- have a restricted regional extent and/or distribution (EPA 2016b)
- are represented by less than 10% of their pre-European extent (Commonwealth of Australia 2001)

2.3.4 Locally Significant Vegetation

Vegetation communities may be considered to be locally significant where they:

- occur as small, isolated communities (Government of Western Australia 2000; Del Marco *et al.* 2004)
- have a restricted local extent (proportion) (EPA 2016a) and/or distribution (are locally restricted to only one or a few locations) (Del Marco *et al.* 2004).

2.4 VEGETATION CLEARING, EXTENT AND STATUS

Clearing of native vegetation is regulated in WA under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004. Any clearing of native vegetation is an offence, unless carried out under a clearing permit or if the clearing is for an exempt purpose (DWER 2019). A clearing permit may be required under Part V of the EP Act, whereby permit applications to clear native vegetation must be assessed against the '10 Clearing Principles' as outlined in the regulations (DER 2014).

Where clearing of native vegetation is proposed to occur, there are several key criteria applied to the assessment of clearing permit applications, in the interests of biodiversity conservation (DER 2014).

The objective of the EPA in relation to flora and vegetation is 'to protect flora and vegetation so that biological diversity and ecological integrity are maintained' (EPA 2016b). This objective is documented in the EPA Factor Guideline - Flora and Vegetation (EPA 2016a). The EPA considers it is important that ecological communities are maintained above the threshold level of 30% of the original pre-clearing extent of the community in unconstrained areas and 10% within 'constrained' areas (EPA 2008).

2.5 ENVIRONMENTALLY SENSITIVE AREAS

Environmentally Sensitive Areas (ESAs) are areas that require special protection due to aspects such as landscape, fauna or historical value and are generally considered to be areas of high conservation value. ESAs are declared in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*, which was gazetted on 8 April 2005 (State of Western Australia 2005).

There are several types of ESAs relating to flora and vegetation, declared under Part V of the EP Act, which include:

- a defined wetland and the area within 50 m of that wetland
- the area covered by vegetation within 50 m of rare (Threatened) flora, to the extent where the vegetation is continuous with the vegetation in which the rare (Threatened) flora is located
- the area covered by a TEC
- Bush Forever sites (WAPC 2000).

2.6 INTRODUCED FLORA

Over 1,200 introduced (weed) species have been recognised to occur within Western Australia (EPA 2007). Weeds are plants that are not indigenous to an area and have been introduced either directly or indirectly through human activity. They establish in natural ecosystems and adversely modify natural processes, having the potential to dominate and simplify the ecosystems and thus decrease habitat value provided for native fauna. Weeds pose a threat to many native flora species due to their ability to rapidly grow and out-compete for available water, space, sunlight, and nutrients (EPA 2007).

2.6.1 Weeds of National Significance

Under the National Weed Strategy, there are currently 32 weed species listed as Weeds of National Significance (WoNS) (CISS 2021). Each weed listed was considered for inclusion based on the following criteria:

- invasive tendencies
- impacts
- potential for spread
- socioeconomic and environmental values.

2.6.2 Declared Pest Plants

The Western Australian Organism List (WAOL) details organisms listed as Declared Plants (DPs), including pest plants, under the *Biosecurity and Agriculture Management Act 2007* (BAM Act) (Department of Primary Industries and Regional Development (DPRID) 2022). Under the BAM Act, DPs are listed under one of the following categories:

- **C1 (exclusion)**, that applies to pests not established in Western Australia; control measures are to be taken to prevent their entry and establishment
- **C2 (eradication)**, that applies to pests that are present in Western Australia but in low numbers or in limited areas where eradication is still a possibility
- **C3 (management)**, that applies plants that should have some form of management applied that will alleviate the harmful impacts of the plant, reduce the numbers or distribution of the plant, or prevent or contain the spread of the plant (DPIRD 2017).

2.6.3 Environmental Weeds

Introduced species have also been ranked by several attributes including invasiveness, distribution, and environmental impacts in the various regions in the Environmental Weed Strategy (CALM 1999). To advance the above categorisation, the Invasive Plant Prioritisation Process for DBCA was developed in 2008 (DPAW 2013).

3. EXISTING ENVIRONMENT

3.1 CLIMATE

The study area occurs on the Swan Coastal Plain, which has a warm Mediterranean climate, characterised by hot, dry summers and cool to mild wet winters (Mitchell *et al.* 2002). The nearest operating Bureau of Meteorology (BoM) recording station is located at Mandurah (station number 009977). Data has been recorded since 2001 for rainfall and for temperature. Annual mean maximum temperature in the area ranges from 17.6°C in winter to 29.8°C in summer (BOM 2023) (**Figure 2**).

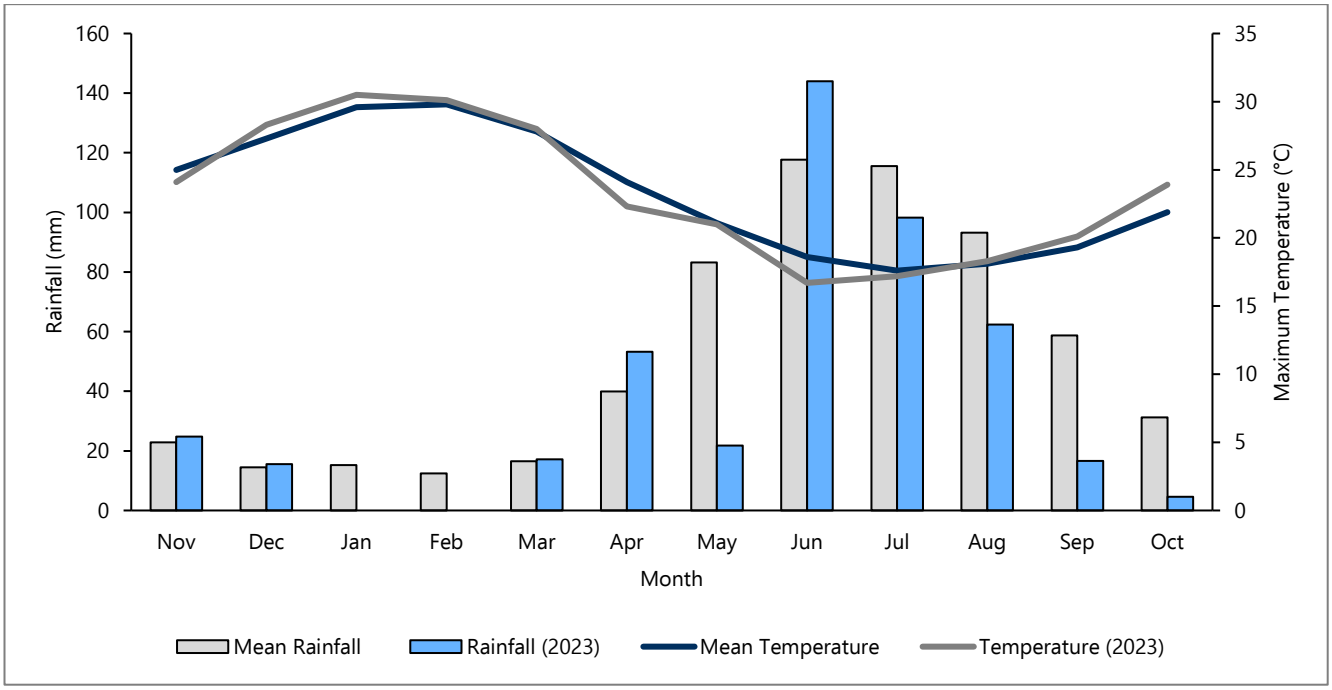

Figure 2 – Climate Data for the Study Area (Mandurah 009977)

3.2 IBRA REGION

The Interim Biogeographic Regionalisation for Australia (IBRA) defines 89 regions based on climate, geology, landforms and characteristic vegetation and fauna (DCCEEW 2021). The study area lies within the Swan Coastal Plain (SWA) IBRA region and, at a finer scale, within the Perth subregion (SWA2) (Mitchell *et al.* 2002). The Swan Coastal Plain bioregion is a low lying coastal plain, mainly covered with Banksia and Tuart woodlands on sandy soils. Swampy areas are dominated by paperbark, and outwash plains by *Casuarina obesa*. Melaleuca shrublands and *C. obesa*-marri woodlands are located extensively in the south, while Jarrah woodland dominates duricrusted Mesozoic sediments to the east.

The Perth subregion is comprised of colluvial and aeolian sands, alluvial river flats, coastal limestone and heath and/or tuart woodlands on limestone, Banksia and Jarrah-Banksia woodlands on Quaternary marine dunes of varying ages, Marri on colluvial and alluvial soils, and seasonal wetlands (Mitchell *et al.* 2002).

3.3 SOILS

The Swan Coastal Plain supports five major geomorphological systems (landforms) that lie parallel to the coast. From west to east these are: Quindalup Dunes, Spearwood Dunes, Bassendean Dunes, Pinjarra Plain and Ridge Hill Shelf (Churchward and McArthur 1980; Gibson *et al.* 1994). The study area is situated on the Quindalup South Dune System (211Qu) which is described as consisting of coastal dunes of the Swan Coastal Plain with calcareous deep sands and yellow sands supporting coastal scrub vegetation (Schoknecht *et al.* 2004). The spatial extent of the system is presented in **Figure 3**.

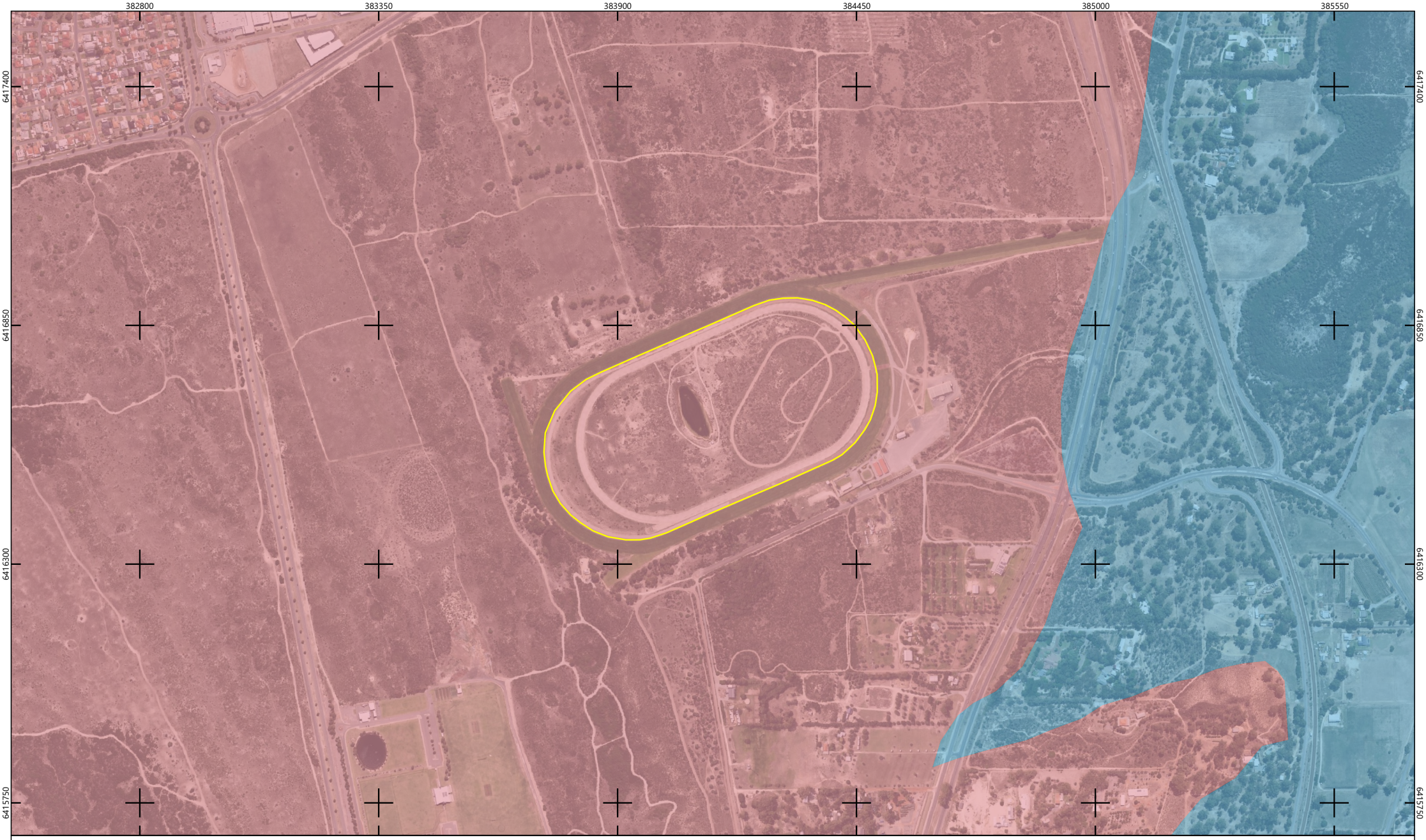

Figure 3 - Soil Systems

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3.4 VEGETATION

EPA objectives in relation to flora and vegetation are to protect flora and vegetation so that biological diversity and ecological integrity are maintained (EPA 2016a). The EPA considers it important that ecological communities are maintained above a threshold level of 30% of the original pre-clearing extent of each community (EPA 2008) in unconstrained areas, and above 10% for constrained areas.

Additionally, the National Objectives and Targets for Biodiversity Conservation 2001-2005 (Commonwealth of Australia 2001) recognise that the retention of at least 30% of the pre-clearing extent of each vegetation association is necessary for Australia's biological diversity to be protected (DER 2014). Species loss appears to accelerate exponentially at an ecosystem level when current extent falls below 30% of pre-clearing extent (EPA 2008). When only 10% or less of the original extent of a vegetation association remains, it is regarded as Endangered (EPA 2008), and any impacts or increased threats to these vegetation associations should be avoided, included clearing.

3.4.1 Pre-European Vegetation

Vegetation of the Swan Coastal Plain has been broadly mapped by Beard (1990), and later re-assessed by Shepherd *et al.* (2002) into vegetation associations. Mapping depicted the native vegetation as it was presumed to be at the time of European settlement and is referred to as pre-European vegetation mapping. One Beard vegetation association (3048) occurs within the study area (**Figure 4**).

Vegetation association 3048 is described as "mixed heath with scattered tall shrubs of *Acacia* spp., Proteaceae and Myrtaceae" (**Figure 4**). The remaining extent of the vegetation association 3048 is presented in **Table 3** (Government of Western Australia 2019). Beard vegetation associations 3048 is represented by greater than 10% of its original vegetation within Western Australia, Swan Coastal Plain, Perth, and City of Rockingham (**Table 3**).

Table 3 - Pre-European Vegetation Associations of the Study Area (Government of Western Australia 2019)

Vegetation Association	Context	Pre–European Extent (ha)	Extent Remaining (ha)	Extent Remaining (%)
3048	**State** Western Australia	12,100.76	3055.38	25.25
	IBRA Region Swan Coastal Plain	10,418.06	3043.13	29.21
	IBRA Sub-Region Perth (SWA02)	10,418.06	3043.13	29.21
	Local Government Area City of Rockingham	9,147.49	2,735.19	29.90

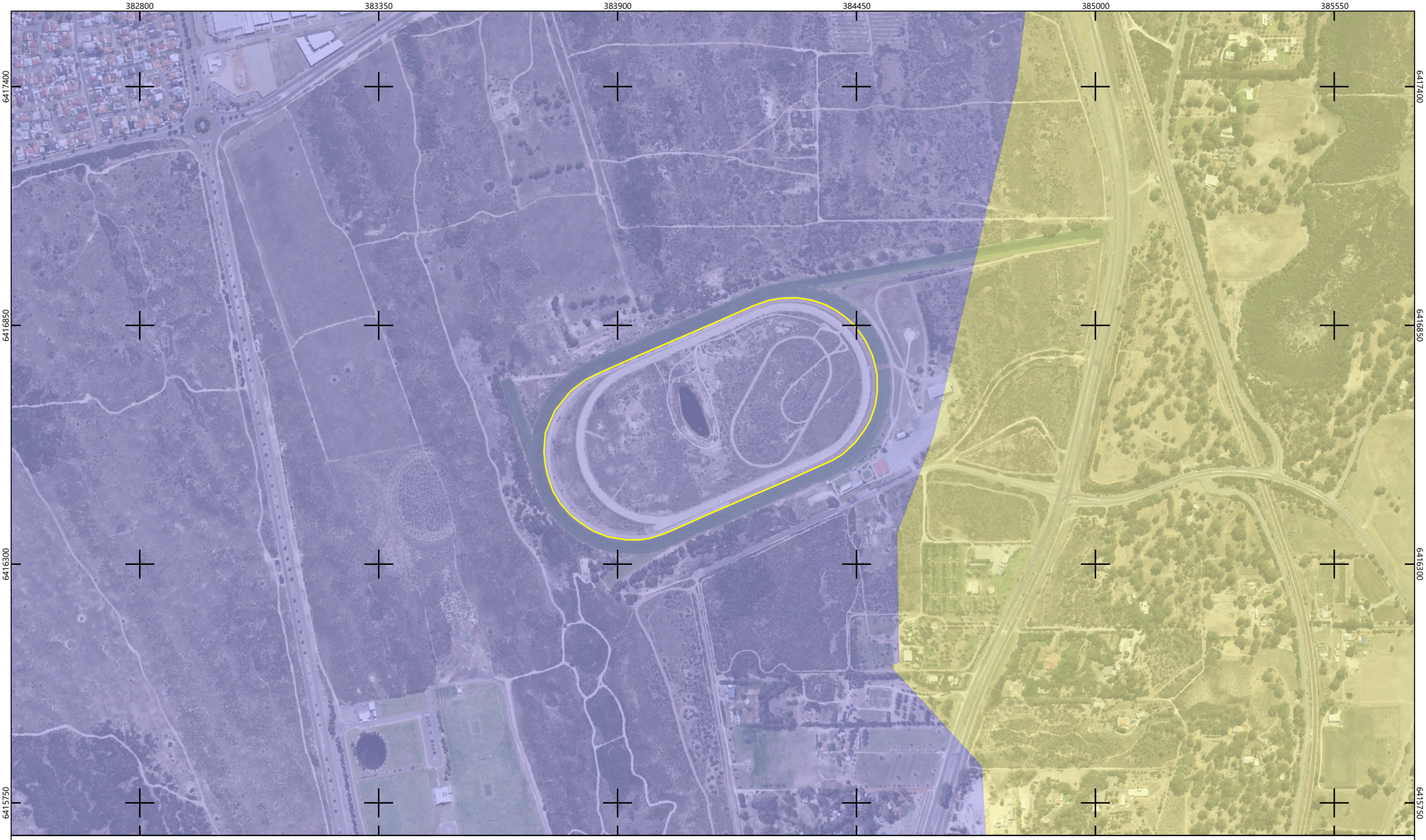

Figure 4 - Pre-European Vegetation

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3.4.2 Vegetation Complexes

Vegetation complexes within the study area as outlined by Heddle *et al.* (1980a), and updated by Webb *et al.* (2006), are categorised based on vegetation in association with landforms and underlying geology.

One vegetation complex, 'Quindalup complex', as described by Heddle *et al.* (1980a) occurs within the entire study area (**Table 4**, **Figure 5**). The Quindalup complex is restricted to coastal dunes and separated into two sub-complexes, the strand and fore dune sub-complex and the mobile and table dune sub-complex (Webb *et al.* 2016).

Approximately 60.49%% of the original extent of the Quindalup vegetation complex remains on the Swan Coastal Plain and 37.33% within the City of Rockingham. The remaining extent of the Quindalup vegetation complex (constrained) does not fall below 10% of the pre-European extent in the contexts of both the Swan Coastal Plain IBRA Region and the City of Rockingham.

Table 4 - Vegetation Complexes within the Study Area (DBCA 2018)

Vegetation Complex	Extent	Pre–European Extent (ha)	Extent Remaining (ha)	Extent Remaining (%)
Quindalup Complex	**IBRA Region** Swan Coastal Plain	54,573.87	33,011.64	60.49
	Local Government Area City of Rockingham	11,061.73	4,129.76	37.33

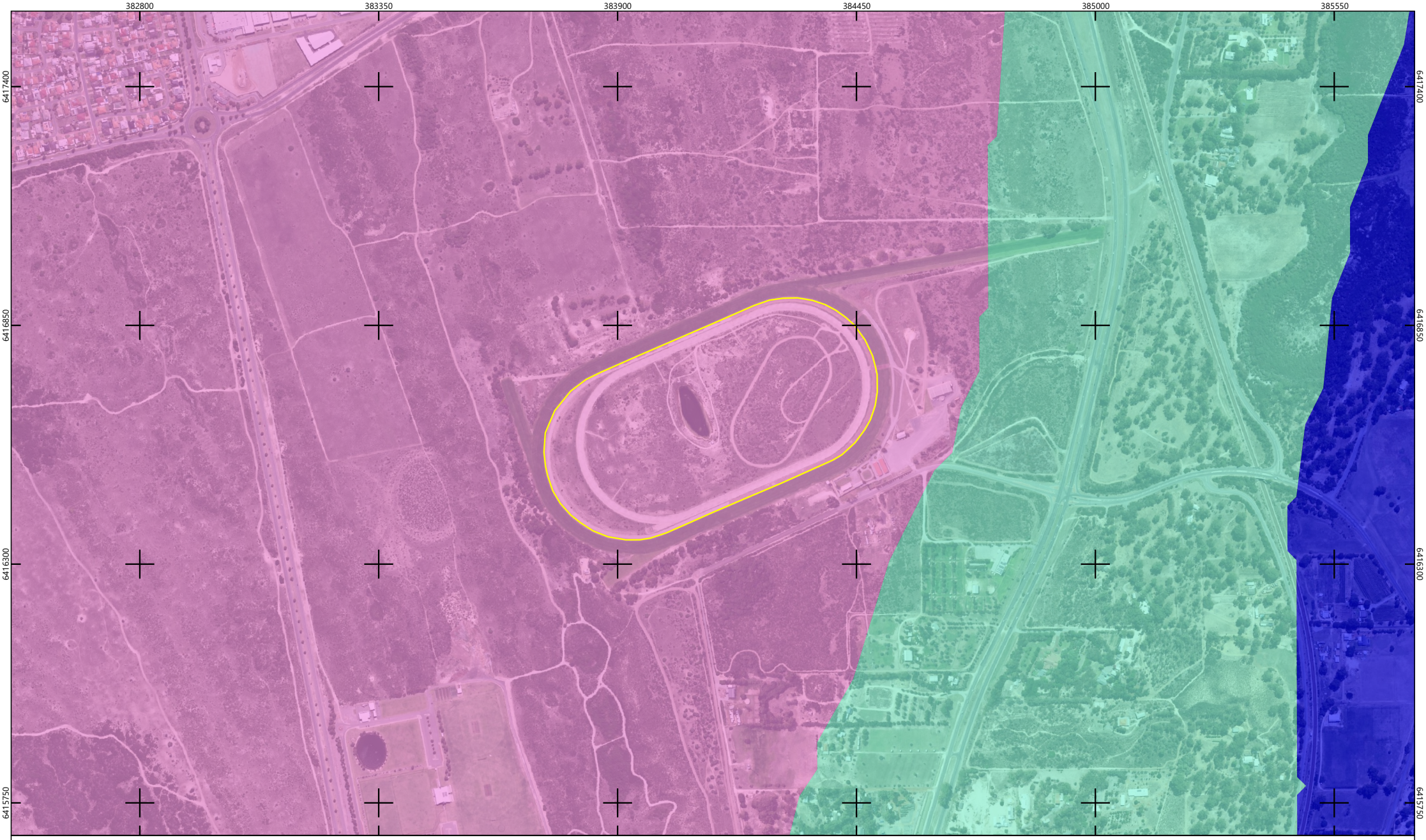

Figure 5 - Vegetation Complexes

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3.5 WETLANDS

The Geomorphic Wetlands of the Swan Coastal Plain dataset displays the location, boundary, geomorphic classification (wetland type) and management category of wetlands on the Swan Coastal Plain. Wetland management categories are based on their ecological, hydrological, and geomorphological significance, and the degree of disturbance that has occurred. The three Wetland Management Categories on the Swan Coastal Plain can be summarised as follows (DBCA 2019):

- Conservation Category (CC) – wetlands that support a high level of ecological attributes and functions (generally having intact vegetation and natural hydrological processes), or that have a reasonable level of functionality and are representative of wetland types that are rare or poorly protected.
- Resource Enhancement (RE) – wetlands that have been modified (degraded) but still support substantial ecological attributes (wetland dependant vegetation covering more than 10%) and functions (hydrological properties that support wetland dependent vegetation and associated fauna) and have some potential to be restored to CC quality. Typically, such wetlands still support some elements of the original native vegetation, and hydrological function.
- Multiple Use (MU) – wetlands that are assessed as possessing few remaining ecological attributes and functions. While such wetlands can still play an important role in regional or landscape ecosystem management, including water management, they are considered to have low intrinsic ecological value. Typically, they have very little or no native vegetation remaining (less than 10%).

Interrogation of the Geomorphic Wetlands Swan Coastal Plain dataset identified 421 wetlands within the 10 km buffer of the study area, including 227 categorised as Conservation Category, 96 as Multiple Use, 48 as Resource Enhancement and 50 that are no longer classed as wetlands are spatially presented in **Figure 6**.

There are no wetlands located within the study area. The closest wetlands for each category are a CCW 0.05 km west of the study area, a MU wetland 0.34 km south of the study area, and a RE wetland 4.6 km east of the study area.

One Ramsar wetland, the Becher Point Wetlands (Ramsar Reference 54), is approximately 708 ha in size and occurs 0.67 km west of the study area, west of Warnbro Sound Avenue and south of Port Kennedy Drive (**Figure 6**).

A water body is present in the centre of the study area, although this is likely a constructed drainage basin and possibly an expression of groundwater resulting from historic excavation as part of development of the race track.

Figure 6 - Geomorphic and Ramsar Wetlands

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3.6 RESERVES, CONSERVATION AREAS AND ENVIRONMENTALLY SENSITIVE AREAS

Under the *State Planning Policy 2.8: Bushland Policy for the Perth Metropolitan Region*, 51,200 ha of regionally significant bushland areas are protected in 287 Bush Forever Sites in Western Australia (State of Western Australia 2010). Bush Forever sites are also classified as Environmentally Sensitive Areas (ESAs) (State of Western Australia 2005).

The current list of ESAs was gazetted on 8 April 2005 which include Ramsar and Geomorphic wetlands (**Figure 6**), Threatened and Priority flora (**Figure 10**), Threatened Ecological Communities (**Figure 12**), and Bush Forever sites (State of Western Australia 2005).

A total of one Ramsar Wetland, 371 geomorphic wetlands, six Nature Reserves, 16 Bush Forever sites, six Conservation Reserves and 311 ESAs occur within 10 km buffer of the study area (**Table 5**). The entire study area is considered an ESA and occurs within Bush Forever Site 356 (**Figure 7**). The Ramsar wetland (Becher Point Wetland) occurs within Port Kennedy Scientific Park (**Table 5**).

Table 5 – Summary of Reserves and Conservation Areas within a 10 km buffer of the Study Area

Name	Conservation Type	Proximity to the Study Area
Port Kennedy Scientific Park	Nature Reserve, Ramsar Wetland 54 (Becher Point Wetlands), Bush Forever site 377	0.67 km west
Unnamed WA43903	Nature Reserve for Conservation of Flora and Fauna (LR3105/59), ESA 10568.	9.1 km north-west
Unnamed WA44004	Nature Reserve for Conservation of Flora and Fauna (LR3008/523), ESA 17467.	3.3 km north-west
Unnamed WA44986	Nature Reserve, ESA 9570, eight DBCA Managed Land areas (LR3146) for the Conservation of Flora and Fauna.	8.5 km south-east
Unnamed WA51784	Nature Reserve, Bush Forever site 372, seven ESA areas and is DBCA managed land for the Conservation of Flora and Fauna (LR3164/986)	8.6 km east

Table 6 – Bush Forever Sites within a 10 km Buffer of the Study Area

Bush Forever Site No.	Name	Proximity to Study Area
75	Churcher swamp, Baldivis	2.9 km east
275	Stakehill swamp, Baldivis	1.2 km east
277	River, Stakehill and Harvey Roads Bushland, Karnup	5.6 km south-east
278	Cassia Drive Bushland, Karnup	1.7 km south-east
356	Lake Cooloongup, Lake Walyungup and Adjacent Bushland, Hillman to Port Kennedy	In the study area
369	Doghill Road Bushland, Baldivis	9.3 km north-east
372	Lowlands Bushland – Western Block (Hymus Swamp), Peel Estate	8.3 km north-east
376	Baldivis Road Bushland, Baldivis	3.8 km east
377	Port Kennedy	0.9 km west
378	Henderson Port Bushland, Peel Estate	8.8 km south-east
379	Anstey Swamp, Karnup	1.9 km south-east
394	Lake Amarillo, Serpentine River, and Adjacent Bushland, Karnup	5.8 km south-east
395	Paganoni Swamp and Adjacent Bushland, Karnup	6 km south-east
418	Folly Pool, Baldivis	8.7 km north-east
419	Maramanup Pool, Baldivis	7.5 km north-east
495	Baldivis Swamp and Adjacent Bushland	6.6 km north-east

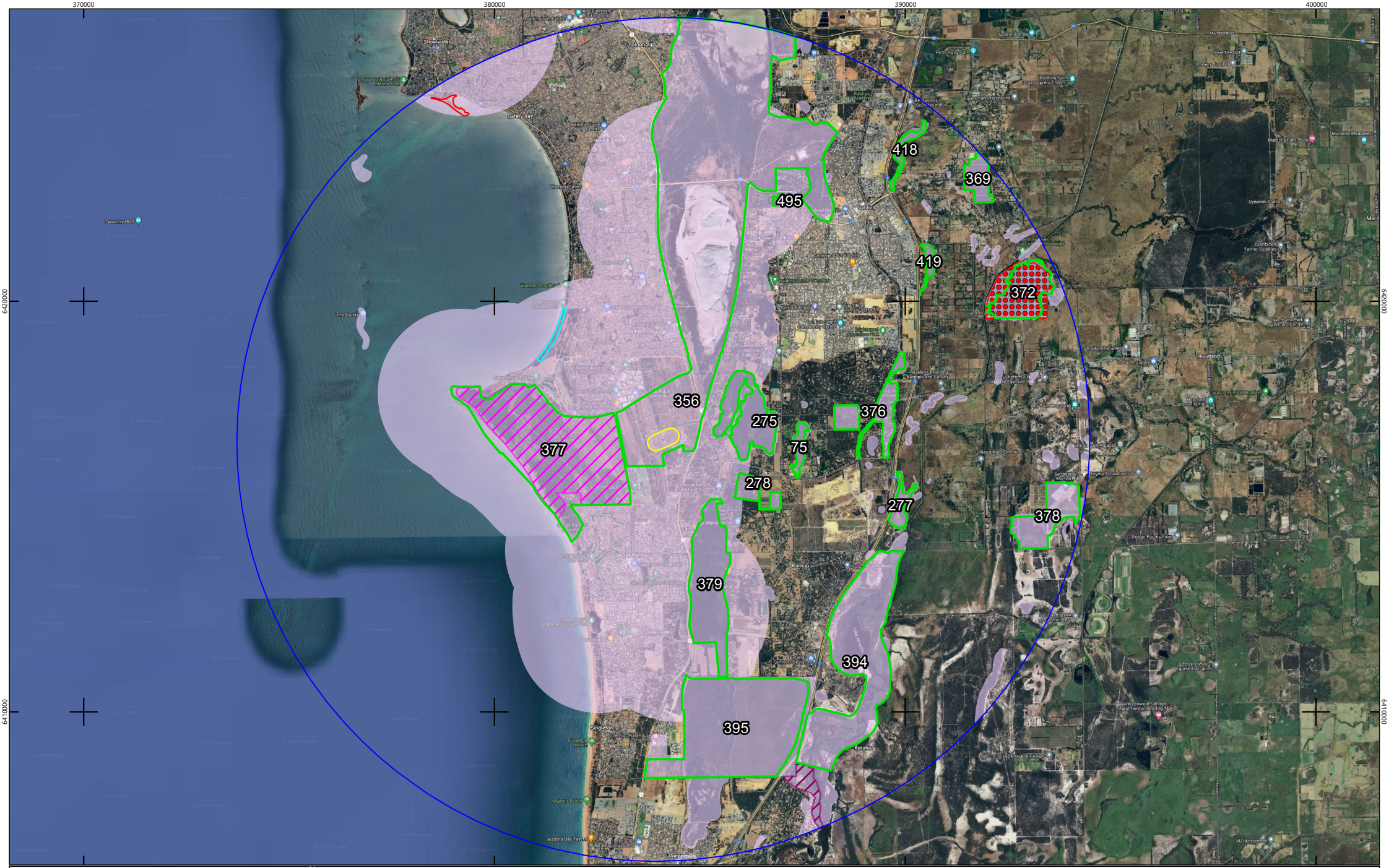

Figure 7 - Reserves, Conservation Areas and ESAs

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4. METHODOLOGY

The detailed flora and vegetation assessment, comprising of a desktop assessment and one phase of field assessment (October 2023), plus data processing and reporting, was conducted in accordance with the following:

- EPA (2016a) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment*
- EPA (2016b) *Environmental Factor Guideline – Flora and Vegetation*.

4.1 DESKTOP ASSESSMENT

4.1.1 Literature Review

Previous flora and vegetation surveys conducted in the vicinity of the study area were reviewed as part of the desktop assessment. These surveys are listed below, and the results have been summarised in **Section 5.1.1**:

- Emerge Associates (2022) *Reconnaissance Flora, Vegetation and Tree Assessment. Part Mandurah Road Reserve between Fifty Road and Safety Bay Road.* Report prepared for City of Rockingham
- Biologic (2021) *Kwinana Nickel Refinery Eucalyptus gomphocephala (Tuart) TEC Assessment.* Unpublished report prepared for BHP Nickel West
- Focused Vision Consulting (2021) *Flora, Vegetation and Fauna Assessment, Success Reserve*. Prepared for the City of Cockburn
- Natural Area Consulting Management Services (NACMS) (2021) *Natural Area Consulting Management Services City of Rockingham Black Spot Project - Safety Bay Road Flora and Vegetation Survey.* Report prepared for City of Rockingham
- PGV Environmental (2019) *Lot 1488 Patterson Road, East Rockingham*. Report prepared for DevelopmentWA
- Strategen (2019) *Lots 511 and 512 Rockingham Road, Kwinana Beach Reconnaissance flora and vegetation survey and black cockatoo habitat assessment.* Unpublished report prepared for Aurizon Operations Ltd
- Biota (2018) *City of Rockingham – Assessment of Wetland Reserves*. Report prepared for the City of Rockingham
- City of Rockingham (2018) *Wetland Management Plan*
- Ecoscape (2018) *Port Kennedy Botanical Survey*. Unpublished report prepared for Department of Fire and Emergency Services
- GHD Pty Ltd (2018) *City of Rockingham Proposed Baldivis District Sporting Complex Flora and Vegetation Assessment.* Unpublished report prepared for City of Rockingham
- Western Botanical (2018) *Flora and Vegetation Assessment, Mandurah Road, Baldivis.* Unpublished report prepared for City of Rockingham
- Emerge Associates (2017) *Spring Flora and Vegetation Park Lot 105 Stock Rd, Lakelands*
- PGV Environmental (2014) *253 Yangedi Road, Hopelands – Flora and Vegetation Survey*. Prepared for Urban Resources
- Umwelt (2006) *Flora and Fauna Assessment of Proposed Kwinana Ethanol Bio-Refinery*
- Mattiske Consulting (2003) *Flora and Vegetation Survey of the Proposed Kwinana to Australind Gas Pipeline Infrastructure Corridor*. Unpublished report prepared for Bowman Bishaw Gorham and Department of Mineral and Petroleum Resources.

4.1.2 Database Searches

The desktop assessment for conservation significant flora and ecological communities incorporated a review of the NatureMap Species Report search results (Ref: 17-0523NM) (**Appendix A**) and interrogation of the Commonwealth DCCEEW Protected Matters Search Tool (PMST) (**Appendix B**) for the presence of conservation significant flora and ecological communities within a 10 km buffer zone of the study area.

The database search results were compiled into a table that concluded the likelihood of occurrence of each of the significant species and communities based on habitat preferences of known recorded locations for each species. The likelihood of all significant flora occurring within the study area was assessed based on known records and their age (currency), distance to the closest known DBCA record, and the presence of suitable habitat within the study area. Based on this assessment, each species was given a likelihood of occurrence category of 'likely to occur', 'may occur' or 'unlikely to occur' (**Table 7**). Where recent records and suitable species habitat occurs within or within less than 1 km of the study area, these species were given a category of 'likely to occur', whilst species occurring a greater than 1 km from the study area with limited suitable habitat, or for very old records, a category of 'unlikely to occur' or 'may occur' was applied, depending on record relevance.

Habitat preferences for all target species determined during the desktop assessment, has enabled targeted searching to occur during the field assessment.

The desktop assessment ensured that the field assessments were targeted to the areas potentially supporting conservation significant values.

Table 7 – Likelihood of Occurrence Criteria

Criteria	Explanation
Suitable habitat	The likelihood of suitable habitat being present within the study area was based on known habitat information gathered from Florabase (WAH – 1998) and literature sourced from the Species Profile and Threats Database (SPRAT) (DCCEEW 2023b) (e.g., recovery plans, conservation advice).
Age of previous records	The age of previous records for significant species resulting from the desktop assessment was evaluated to determine how likely the species was to still occur in the study area (i.e., habitat of species recorded decades ago may no longer occur or a species may be locally extinct).
Proximity of previous records	The proximity of previous significant flora and vegetation results in relation to the study area contributed to the likelihood of occurrence results, with those previously recorded close by considered more likely to occur within the study area. It is noted that species identified from the PMST have not necessarily been recorded within proximity to the study area and may have resulted due to habitat possibly occurring within the area.
Current condition of study area	Highly modified and degraded environments usually represent a lower likelihood of the occurrence of significant flora, whilst intact remnants are known to harbour significant species and communities that may have otherwise been cleared or impacted throughout their range.

4.2 FIELD ASSESSMENT

The flora and vegetation assessment of the study area was undertaken by Megan Gray (Botanist/Ecologist) assisted by and Flavia dos Santos Pereira (Technician) on 12 October 2023.

The timing of the survey was optimal to conduct the flora and vegetation assessment, as this is during spring, which is the peak flowering period for the region, and a time at which the greatest number of annual and ephemeral species are present, which optimises FCT determination.

Flora and vegetation data were collected in the field at sampling points where vegetation was noted to be of differing floristic composition. Data for two relevés were recorded in locations presented in **Figure 8**.

Geographic co-ordinates were recorded for the relevés using GPS. The data collected were used to describe the native vegetation communities (vegetation in 'Good' or better condition).

The following information was recorded at each quadrat:

- observer
- date
- GPS location (GDA 94) of north-west corner
- representative photograph
- soil type and colour
- topography
- vegetation condition/degradation/disturbances (e.g., grazing, weed invasion, fire)
- flora species present, including average height and projected foliage cover of the dominant species of each stratum
- vegetation structure and dominance, described in accordance with the National Vegetation Information System (NVIS) (NVIS Technical Working Group 2017)
- vegetation condition, assessed against the currently accepted scale; an adaptation of the Keighery (1994) condition scale.

Observations and opportunistic collection of data and flora specimens were also carried out during foot traverses within and throughout the study area and track logs of all personnel were captured using GPS-enabled devices to document survey effort. The combined track logs for the study area are presented in **Figure 8**. Field data was recorded using electronic tablet devices equipped with the mobile mapping software, Mappt™ (Takor Group 2021) and customised data collection forms, tailored to the electronic collection of quadrat data and targeted flora surveys. Draft vegetation unit and condition mapping were also prepared in shapefiles directly into Mappt™ whilst in the field, and this formed the basis of the mapping presented in this report and provided in spatial data.

4.3 DATA PROCESSING AND ANALYSIS

Flora identifications were undertaken by FVC's taxonomists, Olga Nazarova and Taryn Brebner. Specimens were dried and collected in accordance with WAH protocols (WAH 1998-). Taxonomy and nomenclature follow current protocols of the WAH.

Due to the degraded nature of the vegetation in the study area, recorded relevé data was unable to be analysed to determine floristic community types (FCT) of the southern Swan Coastal Plain.

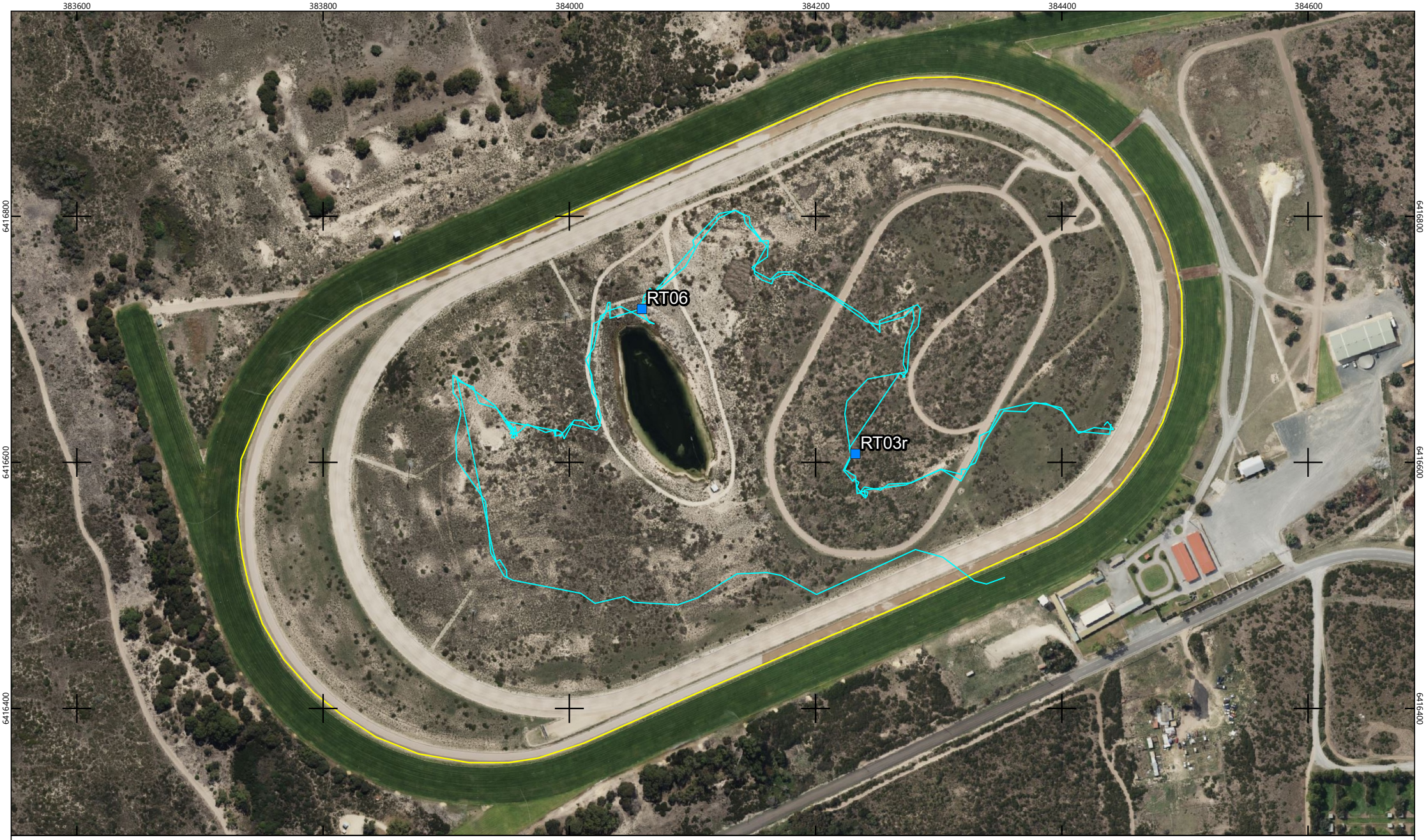

Figure 8 - Relevé Locations and Survey Effort

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4.5 STUDY LIMITATIONS

The limitations of the flora and vegetation field assessment have been considered in accordance with the Technical Guidance (EPA 2016a) and are summarised in **Table 8**.

Table 8 – Survey Limitations

Aspect	Constraint	Explanation
Availability of regional data, previously available information	No	The study area is within the Perth Metropolitan Region, a well-understood location in terms of ecological values. Numerous studies have been completed within the vicinity of the study area and wider region. Comprehensive regional data relating to soils, vegetation and biological values of conservation significance are also available in public databases and in the literature, all included in the desktop assessment.
Scope (detail)	No	A flora and vegetation survey was carried out in accordance with EPA (2016a). Two relevés were sampled across the study area targeting differing vegetation units. The EPA Guidelines state that a minimum of three quadrats should be sampled in each vegetation unit considered to be of 'Good' or better condition, however due to the limited representation and quality of vegetation within the study area, vegetation units ArMs and TdFc were only sampled from two relevés. This level of survey detail was considered adequate for the assessment of floristic values, with a large proportion of the study area highly modified and devoid of remnant native vegetation.
Competency/ Experience of personnel	No	The field survey lead (Megan Gray) has significant experience in biological assessments in the Perth region, with more than four years of experience in conducting floristic assessments throughout WA, including within the in the Perth region. Personnel with relevant qualifications and experience contributed to the various study tasks, such as flora identifications, floristic analysis, reporting and technical review.
Survey effort/detail/ intensity	No	The selected scope for the biological assessments was a detailed flora and vegetation assessment with targeted survey for species and ecological communities of conservation significance. Whilst it is unlikely the study area would support the majority of Threatened and Priority flora identified in the desktop assessment given the degraded condition of the vegetation, the majority of the study area where remnant vegetation occurs was searched for Threatened and Priority flora.
Seasonal timing and climatic conditions	No	The timing of the assessment (October) was considered optimal for the identification of flowering flora or annual and ephemeral species.
Access	No	No issues with access were experienced, and the entire area was able to be traversed on foot.
Mapping reliability	No	Mapping within the study area is at a scale based on ground-truth areas, with limited extrapolation, given the good accessibility. Mapping reliability and the proportion of values identified and recorded based on scale and the extent of survey is considered high.
Disturbances	No	The majority of the study area is considered to be 'Degraded' or 'Completely Degraded' condition, with only a small portion (0.12 ha) in 'Good' condition. Disturbance is due to historic clearing for the racetrack development and other equine activities. This degradation did not impede the definition of the biological values present.
Survey completedness	No	All of the study area was easily accessible by foot and the survey was fully completed.

5. RESULTS

5.1 DESKTOP REVIEW

5.1.1 Literature Review

A literature review was undertaken as part of the desktop assessment to identify previous flora and vegetation assessments that were conducted within or in the vicinity of the study area. The flora and vegetation surveys were reviewed to provide a broader locality context and to identify key findings including significant flora and the presence of TECs and PECs. A summary of the literature review is provided in **Table 9**.

Table 9 – Summary of Results of Previous Surveys Within and Surrounding the Study Area

Reference	Survey Methodology	Key Results
Reconnaissance Flora, Vegetation and Tree Assessment. Part Mandurah Road Reserve between Fifty Road and Safety Bay Road Emerge Associates (2022)	Reconnaissance flora, vegetation and tree assessment, June 2022	• 78 flora taxa recorded including 43 introduced species • Eight vegetation types were defined • No TECs or PECs found to occur • No Threatened or Priority flora were recorded • Further survey from September to October is recommended to confirm presence or absence of *Caladenia huegelii* (T) within the *Eucalyptus gomphocephala* and *Banksia attenuata* plant community • The vegetation condition ranges from 'Good' to 'Completely Degraded' • Total 42 habitat trees including 11 trees with potentially suitable hollows.
Kwinana Nickel Refinery Eucalyptus gomphocephala (Tuart) TEC Assessment Biologic (2021)	Assessment for the presence and extent of the Tuart TEC, July 2021	• The vegetation condition ranges from 'Degraded' to 'Very Good' • Four out of the six assessed patches represent Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal (TEC).
City of Rockingham Black Spot Project - Safety Bay Road Flora and Vegetation Survey NACMS (2021)	Basic flora and vegetation survey, July 2021	• 38 flora taxa recorded including 18 introduced species • No TECs or PECs found to occur • One Weed of National Significance (WoNS) (**Asparagus asparagoides*) • Two vegetation types were defined • The vegetation condition ranges from 'Degraded' to 'Completely Degraded'.
Flora and Vegetation Assessment, Port Kennedy FVC (2020)	Detailed flora and vegetation survey, October 2020	• 69 flora taxa recorded including 22 introduced species • No Threatened or Priority flora recorded • One PEC (SCP 19b) is considered likely to be present • One WoNS, **Asparagus asparagoides* recorded • Three vegetation units were defined • Vegetation condition ranged from 'Good-Very Good' to 'Completely Degraded'
Lot 1488 Patterson Road, East Rockingham PGV Environmental (2019)	Reconnaissance flora and vegetation survey, November 2018	• No threatened or Priority species recorded • Vegetation condition is assessed as 'Good' to 'Degraded' • One PEC recorded, FCT 29a.
Lots 511 and 512 Rockingham Road, Kwinana Beach	Reconnaissance flora and vegetation survey and black cockatoo	• Two threatened ecological communities were recorded:

Reference	Survey Methodology	Key Results
Reconnaissance flora and vegetation survey and black cockatoo habitat assessment Strategen (2019)	habitat assessment, May and August 2019	○ Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain (EBPC Act; Critically Endangered, DBCA; Priority 3) ○ Banksia woodlands of the Swan Coastal Plain (EPBC Act; Endangered, DBCA; Priority 3) • No Threatened or Priority flora were recorded • Three Declared Pest plants were recorded: **Asparagus asparagoides, *Zantedeschia aethiopica* and **Gomphocarpus fruticosus*.
City of Rockingham, Assessment of Wetland Reserves Biota (2018)	Detailed flora and vegetation survey, targeted survey and weed assessment, October – November 2017	• 215 flora taxa recorded from 67 families and 162 genera • No threatened flora recorded • One priority species recorded: *Sphaerolobium calcicola* (P3) • One WoNS species, *Asparagus asparagoides* and two DP species, *Asparagus asparagoides* and *Gomphocarpus fruticosus*
Wetland Management Plan City of Rockingham (2018)	Detailed flora and vegetation assessment Carndo 2005	Key Findings only from the survey within Lark Hill Sporting Complex; • 104 flora taxa species including 38 introduced species • Seven vegetation units • One Priority flora species recorded: *Sphaerolobium calcicola* (P3) • Vegetation condition ranged from 'Excellent' to 'Completely Degraded' • One Declared Pest Plant was recorded; **Gomphocarpus fruticosus* recorded • Four occurrences of TEC, 'Sedgelands in Holocene dune swales of the southern Swan Coastal Plain'
Port Kennedy Botanical Survey Ecoscape (2018)	Detailed flora and vegetation survey, September 2017	• 44 flora taxa recorded including 25 introduced species • No TECs or PECs found to occur • No Threatened or Priority flora were recorded • One vegetation type ○ The vegetation condition ranges from 'Degraded' to 'Completely Degraded'.
City of Rockingham Proposed Baldivis District Sporting Complex Flora and Vegetation Assessment GHD (2018)	Detailed flora and vegetation survey, October 2017	• 87 flora taxa recorded (41 families and 71 genera) • 45 introduced flora taxa were recorded, including one Declared Pest: **Gomphocarpus fruticosus* • Three vegetation types were defined • No Threatened or Priority flora were recorded • No TECs found to occur • Likely occurrence of two Priority 3 PECs: ○ Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain • Southern *Eucalyptus gomphocephala* and/or *Agonis flexuosa* woodland
Flora and Vegetation Assessment, Mandurah Road, Baldivis. Western Botanical (2018)	Targeted flora and vegetation assessment, November 2018	• 24 flora taxa recorded including 16 introduced species • One vegetation type - degraded remnant Tuart (*Eucalyptus gomphocephala*) woodland • No TECs or PECs found to occur • The vegetation condition assessed as 'Degraded'.

Reference	Survey Methodology	Key Results
Spring Flora and Vegetation Park Lot 105 Stock Rd, Lakelands Emerge Associates (2017)	Detailed flora and vegetation assessment, September 2016	• 91 flora taxa recorded across 33 families and 72 genera • One priority species recorded, *Acacia benthamii* (P2) • One TEC recorded, 'Banksia Woodlands of the Swan Coastal Plain" and one PEC recorded, 'Banksia dominated woodlands of the Swan Coastal Plain IBRA region' • No DP or WoNS species recorded.
253 Yangedi Road, Hopelands – Flora and Vegetation Survey PGV Environmental (2014)	Detailed flora and vegetation assessment, September 2014	• 98 flora taxa recorded • Five vegetation types recorded • No priority or threatened flora species recorded • No TECs or PECs recorded • Vegetation condition assessed as 'Very Good'.
Flora and Fauna Assessment of Proposed Kwinana Ethanol Bio-Refinery Umwelt (2006)	Flora and fauna assessment, August 2006	• 37 flora taxa recorded including 16 introduced species • No Threatened or Priority flora were recorded • Five vegetation types were defined • No TECs or PECs found to occur.
Flora and Vegetation Survey of the Proposed Kwinana to Australind Gas Pipeline Infrastructure Corridor Mattiske Consulting (2003)	Flora and vegetation survey, October 2002 and 2003	• 326 flora taxa recorded including 77 introduced species • Three significant flora taxa: • *Boronia juncea* subsp. *juncea* (P1) • *Acacia semitrullata* (P3) • *Acacia flagelliformis* (P4) • Four declared weeds on the Western Australian Organism List (WAOL): **Zantedeschia aethiopica*, **Gomphocarpus fruticosus*, **Echium plantagineum* and **Opuntia* sp. • One Weed of National Significance (WoNS) (**Rubus fruticosus*).

5.1.2 Threatened and Priority Flora

The desktop assessment identified 31 conservation significant flora species that have the potential to occur within the study area. No Threatened or Priority Flora have been previously recorded within the study area. Of the 31 species, 13 are Threatened species listed under the EPBC and BC Acts, two are Priority 1, two are Priority 2, seven are Priority 3 and eight are Priority 4 species. Three of the significant species identified through the database search are considered 'likely' to occur, 12 taxa 'may occur', and the remaining 17 were considered 'unlikely' to occur in the study area (**Table 10**). DBCA recorded Threatened and Priority flora occurring within 10 km of the study area is spatially presented in **Figure 9**.

Table 10 – Threatened and Priority Flora Likelihood of Occurrence

Species	EPBC Act Cons Status	WA Cons. Status	Description*	Preferred Habitat*	Pre-Survey Likelihood of Occurrence	Source/s
Synaphea sp. Fairbridge Farm (D. Papenfus 696)	Critically Endangered	Critically Endangered	Dense, clumped shrub growing from 0.3 to 0.6 m high and 0.4-0.8 m wide. Produces yellow flowers on erect spikes 0.07-0.24 m long from September to October.	Grey clayey, sand soil with lateritic pebbles. Near winter-wet flats, low woodlands with weedy grasses.	**Unlikely to occur** - The closest occurrence is 12.18 km east of the study area. This species prefers winter-wet flats which is unlikely to occur onsite and there is no presence of low woodlands onsite, therefore suitable habitat is unlikely to occur onsite.	PMST
Synaphea sp. Serpentine (G.R. Brand 103)	Critically Endangered	Critically Endangered	Erect, compact shrub to 0.3 m high. Produces yellow flowers from September to October.	Grey, yellow or brown sandy clay-loam soils. Edge of wetlands, slopes, and flats.	**May occur** - The closest occurrence is 12.23 km east of the study area. This species prefers the edges of wetlands, slopes and flats, and there is a body of water located within the study area, which may provide suitable habitat for this species.	PMST
Caladenia huegelii	Endangered	Critically Endangered	Tuberous, perennial herb growing from 0.25 to 0.6 m high with a single pale green, hairy leaf. Produces 1 to 2 (rarely 3) distinctive flowers with red and green to cream parts from September to October.	Grey, white, or brown sand, clay loam soils. Margins of swamps, low depressions, and flats. Mixed jarrah and Banksia woodlands.	**Unlikely to occur** - The closest occurrence was recorded 22 km south of the study area. Due to the highly modified condition of the study area, it is unlikely suitable habitat will occur.	PMST
Drakaea elastica	Endangered	Critically Endangered	Tuberous, perennial herb growing from 0.1 to 0.3 m high with a single bright green, glossy, prostrate heart shaped leaf. Produces distinctive flower with red and green to yellow parts from October to November.	Bare patches of white or grey sandy soils. Low-lying situations adjoining winter-wet swamps.	**Unlikely to occur** - five known occurrences with 10 km of the study area, the closest being 7 km south-east of the study area. Suitable habitat is unlikely to be present.	DBCA, NatureMap, PMST
Eucalyptus x *balanites*	Endangered	Critically Endangered	Mallee growing to 5 m high, bark rough and flaky. Produces white flowers from October to December or January to February.	Sandy soils with lateritic gravel. White-grey sand, brown sandy loam soils with lateritic gravel. Slopes.	**Unlikely to occur** - The closest species occurrence is 29.38 km north-east of the study area, the study area does not contain any of the suitable soils that this species prefers and therefore suitable habitat is unlikely to occur.	PMST
Diuris purdiei	Endangered	Endangered	Tuberous, perennial orchid growing from 0.15 to 0.45 m high. Produces distinct flattened yellow flowers with	Grey-black sand, sandy clay moist soils. Winter-wet swamps	**Unlikely to occur** - The closest occurrence was recorded 22 north east of the study area. The species has not been recorded on the	PMST

Species	EPBC Act Cons Status	WA Cons. Status	Description*	Preferred Habitat*	Pre-Survey Likelihood of Occurrence	Source/s
			brown blotches on their underside from September to October.		Quindalup South soil system that occurs within the study area. Suitable habitat is unlikely to occur within the study area.	
Synaphea sp. Pinjarra Plain (A.S. George 17182)	Endangered	Endangered	Erect, clumping shrub growing to 0.8 m high. Produces yellow flowers from September to November.	Grey sandy loam or clay, grey-brown clayey sand, brown clayey loam, laterite. Flats, seasonally wet areas, railroad reserves often with wet depressions or drains.	**Unlikely to occur** - The closest occurrence is 12.25 km east of the study area. The study area consists of mainly yellow sand and is quite degraded for the majority of the area. Therefore, this species is unlikely to occur onsite.	PMST
Andersonia gracilis	Endangered	Vulnerable	Slender, erect, or open straggly shrub growing from 0.1 to 0.5 m high. Produces pink to pale mauve flowers in ovoid oblong groups of 4 to 14 on terminal heads from September to November.	White-grey sand, sandy clay, gravelly loam soils. Winter wet areas, near swamps.	**Unlikely to occur** - The study area is outside of the species known distribution. The closest occurrence is over 43 km northeast of the study area on a soil system that does not occur within the study area. Suitable habitat is unlikely to occur within the study area.	PMST
Banksia mimica	Endangered	Vulnerable	Prostrate, lignotuberous shrub growing from 0.15 to 0.4 m high with leaves growing to 0.4 m long. Produces yellow to brown flowers from December to February.	White or grey sand, sandy loam soils over laterite. Slopes and flats.	**Unlikely to occur** - The study is between two disjunct distributions, the closest occurrence being over 41 km northeast of the study area on a soil system that does not occur within the study area. Suitable habitat is unlikely to occur within the study area.	PMST
Diuris drummondii	Vulnerable	Endangered	Tuberous, perennial tall orchid growing from 0.5 to 1 m high. Produces 3 to 8 pale yellow flowers from November to January.	Brown sandy clay, moist peat soils. Low lying depressions, swamps	**Unlikely to occur** - one known occurrence approximately 7.5 km south-east of the study area. Suitable habitat is unlikely to occur.	DBCA, NatureMap, PMST
Drakaea micrantha	Vulnerable	Endangered	Tuberous, perennial herb growing from 0.15 to 0.3 m high with a single silvery to grey, prostrate heart shaped leaf. Produces distinct flower with red and yellow parts from September to October.	Bare patches of white-grey sandy soils. Winter wet swamps, disturbed areas.	**May occur** - The closest occurrence was recorded 28 km northeast of the study area. The species is a disturbance opportunist and due to the highly disturbed condition of the study area and bare sandy patches in the	PMST

Species	EPBC Act Cons Status	WA Cons. Status	Description*	Preferred Habitat*	Pre-Survey Likelihood of Occurrence	Source/s
					northern portion of the study area, suitable habitat may be present.	
Diuris micrantha	Vulnerable	Vulnerable	Tuberous, perennial orchid growing from 0.3 to 0.6 m high with a basal tuft of narrow, linear leaves. Produces up to 7 yellow flowers with red to brown markings from August to October.	Brown/black sandy clay-loam and clayey soils. Winter-wet depressions and swamps, in shallow water.	**May occur** - The closest occurrence is 20 km north of the study area. This species prefers winter-wet depressions and swamps, and due to a body of water being present onsite, suitable habitat for this species may be present onsite.	PMST
Thelymitra variegata	-	Critically Endangered	Tuberous, perennial herb growing from 0.1 to 0.35 m high. Produces conspicuous purple-red flowers with dark purple blotches and yellow parts from June to September.	Sandy clay or sandy soils. Associated with laterite	**May occur** - closest known occurrence is approximately 7.5 km south-west of the study area found on a similar geology as that of the study area. Suitable habitat may occur.	DBCA
Acacia sp. Binningup (G. Cockerton et al. WB 37784)	-	Priority 1	Suckering densely clumping shrub growing to 2.5 m with bright green foliage. Produces bright yellow flowers in August.	Grey sandy soil or sandy loam.	**May occur** - one occurrence recorded within the buffer zone approximately 9 km north of the study area on the same geology as the study area.	DBCA, NatureMap
Boronia juncea subsp. juncea	-	Priority 1	Slender, erect, or straggly shrub growing from 0.6 to 1 m high. Produces pink or purple flowers in April and December.	Dark grey peaty sandy soil. Winter wet depressions, swamps.	**Unlikely to occur** - The closest occurrence is 16 km northeast of the study area on a different soil system to the study area. Suitable soil habitat is unlikely to occur within the study area.	Mattiske Consulting (2003)
Acacia benthamii	-	Priority 2	Erect, spinose shrub growing to 1 m high. Produces golden-yellow flowers in globular heads on short stalks in leaf axils from August to September.	Brown, yellow, grey sandy soils. Flats and slopes, sometimes with limestone and wetlands.	**May occur** - five occurrences recorded, the closest being approximately 2 km east of the study area, however found on different geology to the study area.	DBCA, NatureMap, ALA, Emerge Associates (2017)
Cardamine paucijuga	-	Priority 2	Erect, sprawling open annual herb growing to 0.4 m high. Produces white flowers from September to October.	Black peaty sand, grey sandy clay soils. Winter wet swamps, creek lines and depressions.	**Unlikely to occur** - The most northern record of the species is 6 km south of the study area on a different soil system to the study area. Suitable habitat is unlikely to occur within the study area.	DBCA, NatureMap

Species	EPBC Act Cons Status	WA Cons. Status	Description*	Preferred Habitat*	Pre-Survey Likelihood of Occurrence	Source/s
Beyeria cinerea subsp. *cinerea*	-	Priority 3	Low spreading shrubs to 0.3 m, narrow lime green leaves with pale underside and tuberculate fruits.	Limestone ridges, slopes and hilltops, sand over limestone	**Likely to occur** - five occurrences recorded within the buffer zone, the closest being 1.5 km south of the study area on the same geology. Suitable habitat may be present.	DBCA, NatureMap
Calandrinia oraria	-	Priority 3	Succulent, annual herb growing from 0.1 to 0.2 m high. Produces pink flowers from August to October.	Sandy soil. Coastal dunes, ridges, and undulating plains.	**Likely to occur** - three occurrences within 10 km of the study area, the closest being 2.5 km west of the study area on the same geology and soil found within the study area. Suitable habitat is likely to occur.	DBCA, NatureMap
Dillwynia dillwynioides	-	Priority 3	Decumbent or erect shrub growing between 0.3 to 1.2 m high. Produces flowers with red, orange, and yellow parts from August to December.	Sand, loam, clay soils. Seasonally wet depressions, wetlands.	**May occur** - eight known occurrences within 10 km of the study area, the closest being 5 km east of the study area on a geology similar to the study area. Suitable habitat may occur.	DBCA, NatureMap, ALA
Lasiopetalum membranaceum	-	Priority 3	Multi stemmed shrub growing to 1 m high. Produces pink-purple flowers from September to December.	Sandy soil with limestone. Limestone outcrops and ridges, slopes, and coastal dunes.	**Unlikely to occur** - one known occurrence 6.4 km south of the study area on the Vasse and Bassendean soil systems, not found within the study area. Suitable habitat is unlikely to occur.	DBCA, NatureMap
Pimelea calcicola	-	Priority 3	Erect to spreading shrub growing from 0.2 to 1 m high. Produces white flowers with some pink from September to November.	Brown sandy loam, white-grey sandy soil associated with limestone. Coastal limestone ridges.	**May occur** - two known occurrences within 10 km of the study area, the closest being approximately 7.2 km south of the study area on the same soil and geology system of the study area. Suitable habitat may occur.	DBCA, NatureMap, ALA
Schoenus capillifolius	-	Priority 3	Semi-aquatic, tufted annual sedge growing to 0.05 m high. Produces green flowers from October to November.	Brown sand, clay. Claypans and seasonally wet depressions.	**May occur** - two known occurrences 5.2 km east of the study area on a geology similar to the study area. Suitable habitat may occur.	DBCA, NatureMap, ALA
Sphaerolobium calcicola	-	Priority 3	Slender, multi-stemmed, scandent or erect shrub growing to 1.5 m high. Produces yellow-red flowers in June, September, or November.	White-grey-brown sand, sandy clay over limestone, black peaty sandy clay. Tall dunes, winter-wet flats, interdunal swamps, low-lying areas.	**May occur** - the closest known occurrence is 1.6 km south-east of the study area; however, is found on the Spearwood soil system that differs from the study area. Suitable habitat may occur.	Biota (2018), DBCA, CoR (2018), Emerge Associates (2017), NatureMap,

Species	EPBC Act Cons Status	WA Cons. Status	Description*	Preferred Habitat*	Pre-Survey Likelihood of Occurrence	Source/s
						Mattiske (2003)
Acacia flagelliformis	-	Priority 4	Erect or sprawling shrub growing 0.3 m to 0.75 m. Produces yellow flowers from May to September.	Sandy soils and wet areas.	**Unlikely to occur** - Study area is outside of the species known distribution. The closest occurrence being over 63 km south of the study area. Suitable habitat is unlikely to occur within the study area.	Mattiske (2003)
Acacia semitrullata	-	Priority 4	Slender, erect perennial shrub growing 0.1 m to 1.5 m high. Produces cream and white flowers from May to October.	White/grey sand over laterite or clay. Grows on sandplains and swampy areas.	**Unlikely to occur** - Study area is outside of the species known distribution. The closest occurrence being over 37 km south of the study area. Suitable habitat is unlikely to occur within the study area.	Mattiske (2003)
Conostylis pauciflora subsp. *pauciflora*	-	Priority 4	Dense, rhizomatous perennial grass like herb growing from 0.1 to 0.4 m high. Produces yellow flowers from August to October.	Sandy soil. Hillslopes, dunes often with limestone.	**Unlikely to occur** - one known occurrence approximately 6.2 km south of the study area on the Spearwood soil system not found within the study area. Suitable habitat unlikely to occur.	DBCA, NatureMap
Dodonaea hackettiana	-	Priority 4	Erect shrub or tree growing between 1 and 5 m in height. Produces yellow-green to red flowers from July to October.	Occurs on sandy soils on outcropping limestone.	**Unlikely to occur** - The closest occurrence is 12.5 km north of the study area. This occurrence is the species most southern known record and as a result the study area is outside of the species known distribution. Suitable habitat is unlikely to occur within the study area.	FVC (2021)
Eucalyptus foecunda subsp. *foecunda*	-	Priority 4	Erect mallee form shrub growing to 4 m high with rough, flaky blackish bark.	Brown sandy soil. Limestone	**May occur** - two known occurrences less than 2 km north of the study area on the same geology as the study area. Suitable habitat is likely to occur.	DBCA
Jacksonia sericea	-	Priority 4	Low spreading shrub growing to 0.6 m high. Produces flowers with yellow and red and orange parts usually from December to February.	Grey to white, yellow or brown sandy loam soils, often associated with limestone. Limestone ridges, slopes, and flats.	**Likely to occur** - five occurrences recorded within the buffer zone, the closest being 2 km north-east of the study area. The species is a disturbance opportunist and suitable habitat is likely to be present.	DBCA, NatureMap, ALA

Species	EPBC Act Cons Status	WA Cons. Status	Description*	Preferred Habitat*	Pre-Survey Likelihood of Occurrence	Source/s
Parsonsia diaphanophleba	-	Priority 4	Woody climber (vine). Produces cream-pale pink flowers from September to June.	Clay, loam, sandy soils. Riverbanks.	**May occur** - one known occurrence approximately 7.9 km south-east of the study area on a similar geology that of the study area. Suitable habitat may occur.	DBCA, NatureMap
Stylidium longitubum	-	Priority 4	Erect annual (ephemeral) herb growing from 0.05 to 0.12 m high. Produces pink flowers with white markings from October to December.	Sandy clay, clay soils. Seasonal wetlands.	**Unlikely to occur** - two known occurrences found approximately 8.3 km south-east of the study area with a similar geology to the study area. Suitable habitat may occur.	DBCA, NatureMap, ALA

*Information sourced from WAH (1998-)

Figure 9 - DBCA Threatened and Prioirty Flora Locations

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5.1.3 Threatened and Priority Ecological Communities

A review of the DBCA TEC and PEC database identified that nine Commonwealth listed TECs, five State listed TECs and eight PECs or their buffers occur within 10 km of the study area (**Table 11**). Two of these ecological communities (Richmond-microbial and Walyungup Microbial) represent microbial communities which are not relevant to flora and vegetation values. Of these, two TECs or their buffers (SCP 19a and SCP 19b), which are listed as Endangered under the EPBC Act and Critically Endangered under the BC Act, are mapped as occurring within the study area.

Table 11 – Threatened and Priority Ecological Communities in the Buffer Zone

Community Name	Description	EPBC Cons. Code	WA Cons. Code
SCP08	Herb rich shrublands in clay pans (floristic community type 8 as originally described in Gibson et al. (1994))	Critically Endangered (as part of the Clay Plans of the Swan Coastal Plain TEC)	Vulnerable
Tuart woodlands	Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	Critically Endangered	Priority 3
SCP25	Southern *Eucalyptus gomphocephala-Agonis flexuosa* woodlands	Critically Endangered (as part of the Tuart woodlands TEC)	Priority 3
Richmond-microbial	Stromatolite like microbialite community of coastal freshwater lakes (Lake Richmond)	Endangered	Critically Endangered
SCP19a	Sedgelands in Holocene dune swales of the southern Swan Coastal Plain (floristic community type 19 as originally described in in Gibson et al. (1994))	Endangered (as part of the Sedgelands in Holocene dune swales of the southern Swan Coastal Plain TEC)	Critically Endangered
SCP19b	Woodlands over sedgelands in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Endangered (as part of the Sedgelands in Holocene dune swales of the southern Swan Coastal Plain TEC)	Critically Endangered
Walyungup Microbial	Microbial community of a coastal saline lake (Lake Walyungup)	Endangered	Priority 1
SCP21c	Low lying Banksia attenuata woodlands or shrublands	Endangered (as part of the Banksia WL SCP TEC)	Priority 3
Banksia WL SCP	Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Priority 3
Coastal Saltmarsh	Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Priority 3
SCP24	Northern Spearwood shrublands and woodlands	Endangered (as part of the Banksia WL SCP TEC)	Priority 3
SCP29a	Coastal shrublands on shallow sands	-	Priority 3
SCP29b	Acacia shrublands on taller dunes	-	Priority 3

*Cells highlighted grey indicate ecological communities and/or their buffers that occur within the study area

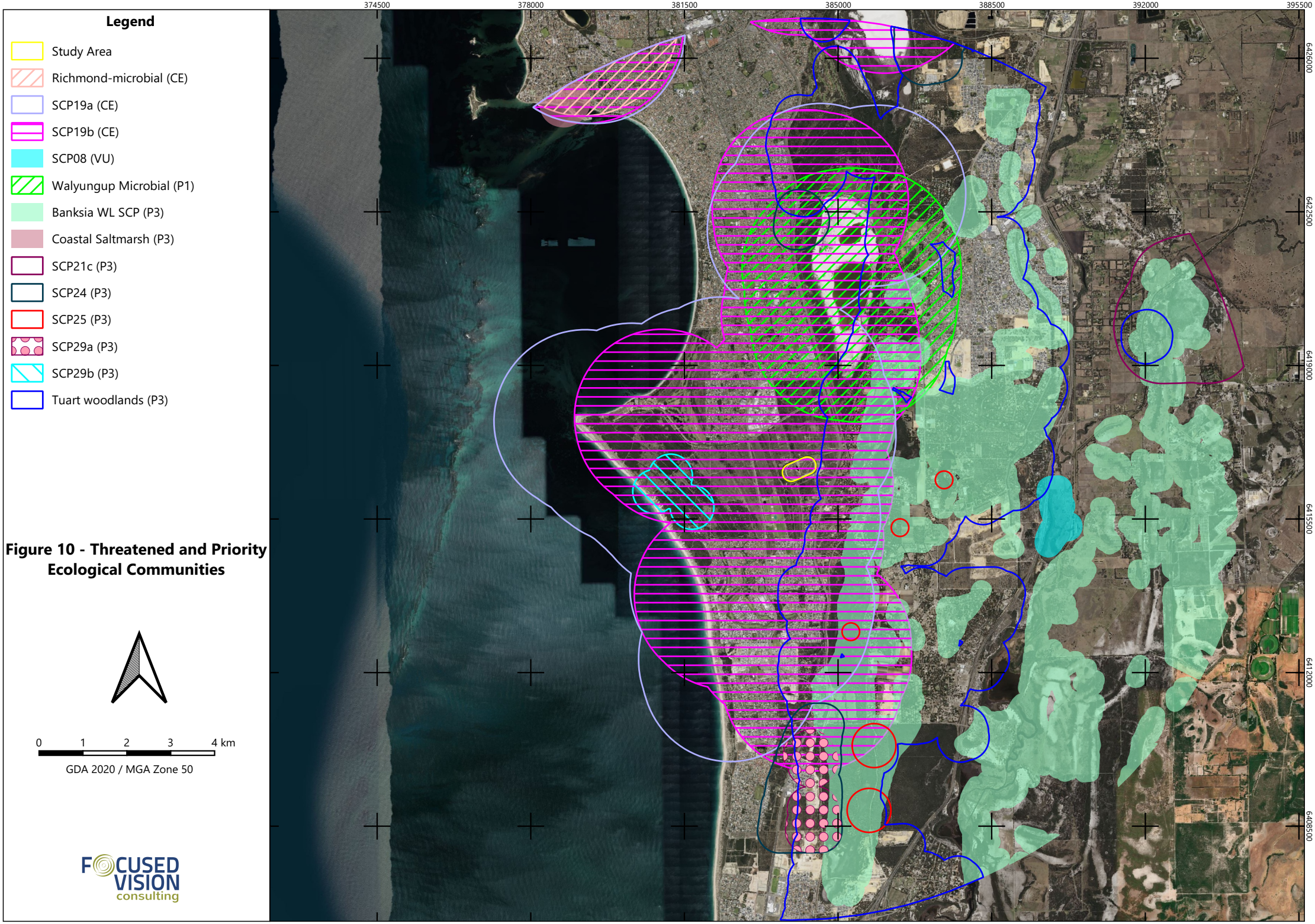

Figure 10 - Threatened and Priority Ecological Communities

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5.2 FIELD ASSESSMENT

5.2.1 Flora

A collective total of 39 flora species, from 38 genera and 21 families were recorded during the surveys. The dominant families represented were Poaceae (eight taxa), Asteraceae (five taxa), and Fabaceae (four taxa). Of the 39 recorded flora species, 22 are introduced (weeds or planted). The flora recorded within the study area is summarised in **Table 12**. The full list of vascular flora taxa recorded within each vegetation unit (which includes opportunistic species records, additional to flora species recorded within relevés) is presented in **Appendix C**, and individual relevé data is presented in **Appendix D**.

No species found to be exhibiting and extension beyond their known range or occurrences, nor any undescribed species were recorded within the study area.

A total of 22 introduced (weed and planted) species were recorded within the study area. One taxon listed as DP plant [s22(2)] under the BAM Act (DPRID 2022) was recorded (**Echium plantagineum*) and none of the recorded weed species are listed as WoNs (CISS 2021). A woody weed, **Olea europaea* (Olive) was also recorded within the study area (**Figure 11)**

Table 12 – Summary of Flora Taxa Recorded in the Study Area

Overview	Total Number
Families	21
Genera	38
Taxa (species, sub species, varieties)	39
Native Flora	17
Introduced and Planted Flora	22
Threatened Flora	0
Priority Flora	0
Range Extensions	0
Undescribed Flora	0
Families	**Number of Taxa**
Poaceae	8
Asteraceae	7
Fabaceae	5

5.2.2 Threatened and Priority Flora

No Threatened flora species listed under the BC Act and/or under the EPBC Act were recorded during the field survey.

No Priority flora species listed by DBCA were recorded within the study area.

Figure 11 - Recorded Significant Introduced Flora Locations

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5.2.3 Vegetation

5.2.3.1 Vegetation Units

Two vegetation units were defined and mapped across the study area. The entire study area has been previously cleared entirely in approximately the mid-1980s, as evident in historic aerial imagery. Therefore, both of the defined and mapped vegetation units are regrowth or colonised vegetation, which have emerged following the clearing. Vegetation consists of isolated trees or shrubs (macro-rush) over introduced grasses and other weeds. The vegetation units are described in **Table 13** and their extents within the study area are spatially presented in **Figure 12**.

Table 13 - Summary of Recorded Vegetation Units in the Study Area

Broad Vegetation Type	Unit Code	Vegetation Unit Description	Representative Relevé (R)	Area (ha)	% of Study Area
Acacia Shrubland	**ArMs**	*Acacia rostellifera* and *Melaleuca systena* low shrubland over **Eragrostis curvula*, and **Bromus diandrus* grassland and **Euphorbia terracina* herbland	RT03r	20.97	73.60
Typha Rushland	**TdFc**	*Typha domingensis* tall open rushland over *Ficinia nodosa* and **Cyperus congestus* sparse sedgeland	RT06r	0.12	0.42
Open Water		Presence of a pond	NA	0.58	2.04
Cleared		Cleared areas devoid of vegetation	NA	6.82	23.94
			TOTAL	**28.49**	**100**

*denotes introduced species

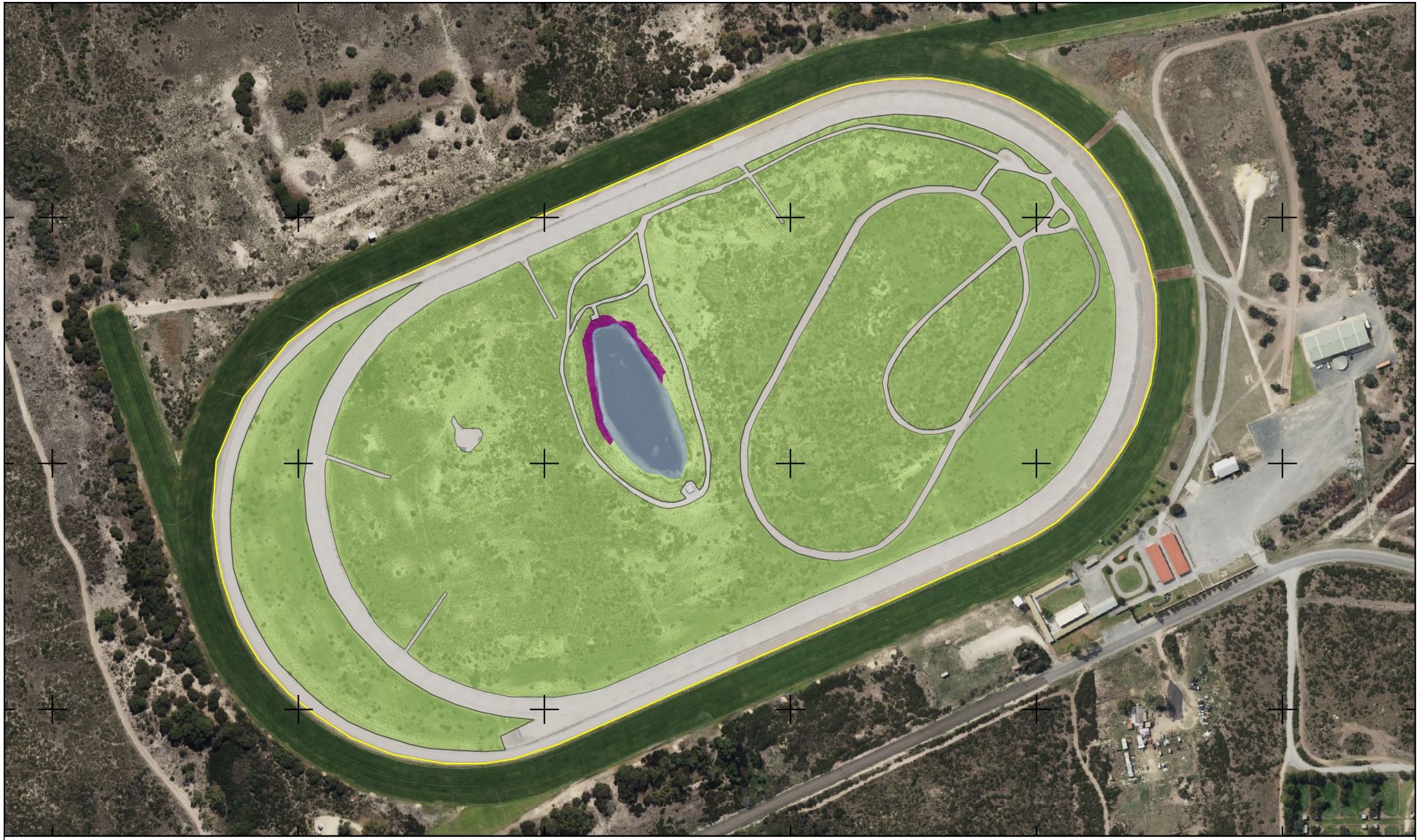

Figure 12 - Vegetation Units

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5.2.3.2 Vegetation Condition

The condition of the vegetation within the study area was found to range from 'Good' to 'Completely Degraded', with the majority (97.52%) in 'Degraded' or poorer condition. The areas of the varying vegetation condition are summarised in **Table 14** and presented in **Figure 13**.

Table 14 – Summary of Vegetation Condition

Vegetation Condition Rating	Total Area (ha)	% of Study Area
Good	0.12	0.42
Degraded	8.61	30.22
Completely Degraded	12.36	43.38
Cleared	6.82	23.94
Open Water	0.58	2.04
TOTAL	**28.49**	**100**

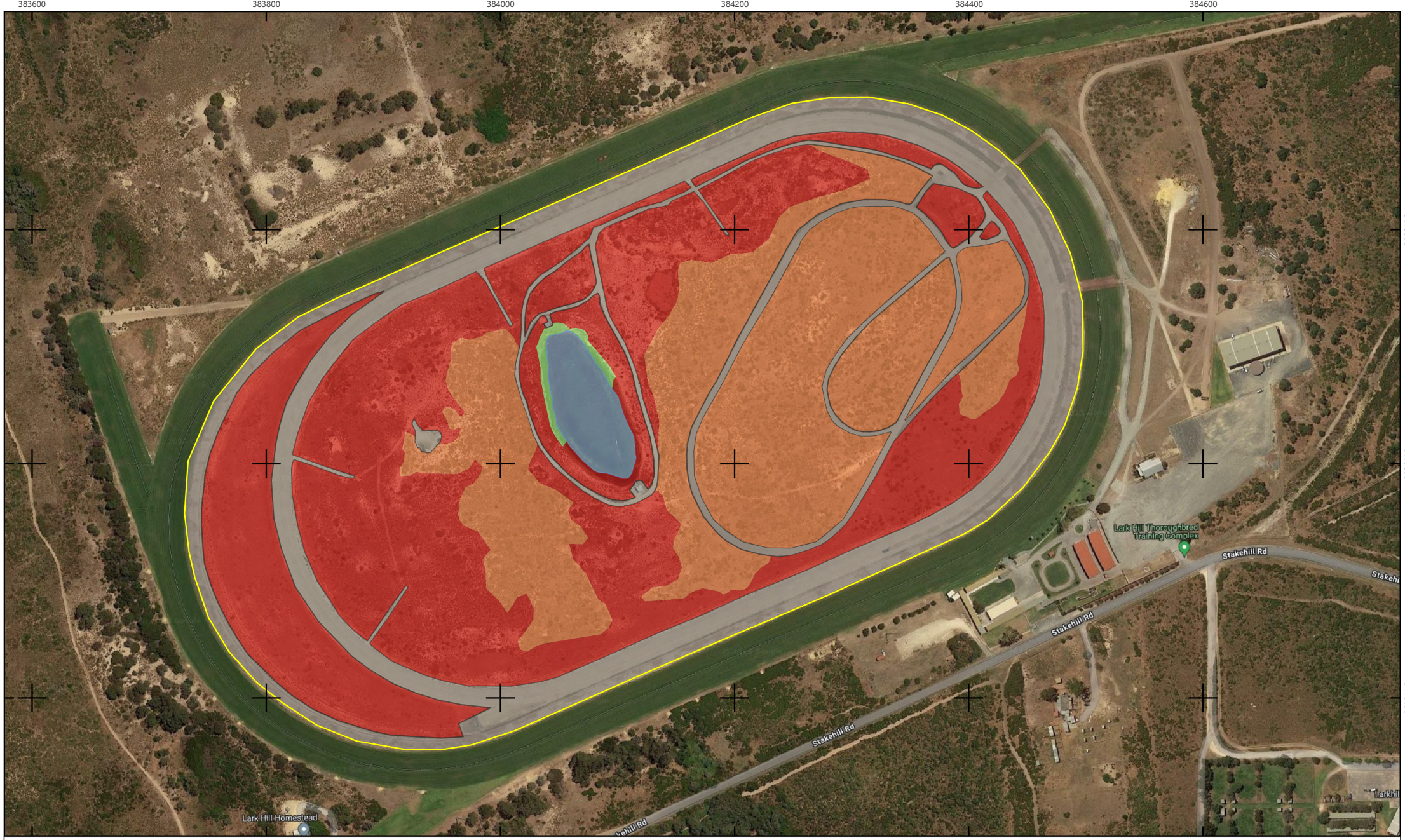

Figure 13 - Vegetation Condition

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5.2.4 Threatened and Priority Ecological Communities

No TECs or PECs were identified during the survey in the study area. Two known TECs or their buffers intersect with or occur within the study area. These communities are:

- SCP 19a – Sedgelands in Holocene dune swales of the southern Swan Coastal Plain (floristic community type 19 as originally described in Gibson *et al.* (1994)) (EPBC Act: Endangered; BC Act: Critically Endangered)
- SCP 19b – Woodlands over sedgelands in Holocene dune swales of the Swan Coastal Plain (original description; Gibson et al. (1994) (EPBC Act: Endangered; BC Act: Critically Endangered)

Originally described as FCT 19 by Gibson *et al.* (1994), the Sedgelands in Holocene dune swales occur within wetland depressions (swales) between parallel Holocene dunes. Typical and common native species in this community are *Acacia rostellifera, Acacia saligna* and *Xanthorrhoea preissi* with sedges of *Baumea juncea, Ficinia nodosa* and *Lepidosperma gladiatum* (DBCA 2020b; DCCEEW 2023d). This FCT was later split into the following two sub-groups:

- SCP 19a – younger dune swales supporting 'sedgelands in Holocene dune swales'
- SCP 19b – older dune swales supporting 'woodlands over sedgelands in Holocene dune swales'.

A previous survey by Western Botanical outlined in the City of Rockingham's *Wetland Management Plan* determined the presence of both SCP 19a and SCP 19b TECs at the adjacent Lark Hill Sporting Complex (CoR 2018).

As the vegetation was too degraded to undertake floristic analysis, no FCTs were able to be inferred and the study area would not be considered to support any FCT. Furthermore, none of flora that characteristically dominate SCP 19a or SCP 19b occurrences besides *Acacia rostellifera* were found to occur in the study area. (DCCEEW 2023d).

No other TECs or PECs listed in **Table 11** are considered to occur within the study area.

6. DISCUSSION

6.1 FLORA

A collective total of 39 flora species, from 38 genera and 21 families were recorded during the surveys. The dominant families represented were Poaceae (16 taxa), Asteraceae (seven taxa), and Fabaceae (five taxa). The total is comprised of 17 (43.59%) native species and 22 (56.41%) introduced (weed) species. Given the size, the study area is considered to have low species diversity and a high proportion and abundance of weeds. This can be attributed to the high level of modification and disturbance that has occurred within the study area, with much of the study area having been cleared for a horse racing track and associated infrastructure. The use of the study area as a horse racing track has also likely contributed to the abundance of weeds, with DP plant Paterson's Curse (**Echium plantagineum*) opportunistically recorded within the study area.

Under the BAM Act, Paterson's Curse is assigned the 'Exempt' category, which means that no permits or conditions are applicable for keeping, and landholders are under no obligation to control infestations (DPRID 2017). This species was only recorded within areas that have been subject to a high level of disturbance and clearing.

Although *Typha domingensis* is native to Western Australia (WAH 1998-), the species can spread prolifically by rhizomes after seedlings establish in disturbed vegetation, often forming monotypes that reduce wetland plant and animal diversity (Hall 2008). *Typha domingensis* dominates one of the recorded vegetation units, TdFc. In this location, *Typha domingensis* has likely established following disturbance. Historic aerial imagery indicates that the entire study area had been cleared in approximately the mid-1980s, and the central area now supporting a body of water is likely a groundwater expression that may have resulted from excavation of the area to provide a drainage basin away from the racetrack. Despite the fact that *Typha domingensis* can spread and become invasive, the extent in the study area is limited to the edge of the water body and does not appear to be resulting in any ecologically adverse effects.

No species listed as Threatened or Priority flora under the BC Act and/or under the EPBC Act were recorded.

None of the recorded flora are exhibiting an extension beyond their currently documented range, in accordance with records of the Western Australian Herbarium (WAH 1998-).

6.2 VEGETATION

The study area lies within the Swan Coastal Plain where only 38% of the original vegetation extent remains. Two vegetation units were defined within the study area from two relevés. Vegetation unit ArMs covers the majority of the study area, across 20.97 ha (73.60%) and consists of areas with locally endemic shrubs including *Acacia rostellifera* and *Melaleuca systena* over introduced grasses and herbs. Vegetation unit TdFc covers a total of 0.12 ha (0.42% of the study area) fringing artificial water body, and is comprised of *Typha domingensis* over mixed introduced and endemic species including *Ficinia nodosa* and **Cyperus congestus*.

The EPA Guidelines (EPA 2016a) state that a minimum of three quadrats should be sampled in each vegetation unit considered to be of 'Good' or better condition, however due to the poor quality of vegetation within the study area, vegetation units ArMs and TdFc were only sampled from one relevé each. Despite only one relevé being sampled each for the two vegetation units, the level of survey was considered adequate for the assessment of floristic values, due to the study area having been subject to previous clearing and the current degraded condition of the vegetation therein.

None of the defined and mapped vegetation units are considered to represent any TECs or PECs.

Vegetation condition within the study area ranges from 'Good' to 'Completely Degraded', with the majority (97.58%) in 'Degraded' or poorer condition. The area in 'Good' condition occurs in a small fringe around the northern portion of the open water body, and only encompass a total area of 0.12 ha. This area of 'Good' condition vegetation is surrounded by 'Completely Degraded' areas that are dominated by weeds and lack intact understorey. The extensive clearing and disturbance within the study area has contributed to a loss of vegetation structure and floristic diversity within the study area.

The remaining extent of the single vegetation association (3048) represented within the study area, as documented by Beard (1990), on the Swan Coastal Plain IBRA Region, Perth sub-region and the City of Rockingham, exceeds the 10% retention target. The remaining extent of this vegetation association therefore meets the EPA objective of retention for the purpose of biodiversity conservation.

The remaining extent of the Quindalup Complex as documented by Heddle *et al.* (1980b) within the Swan Coastal Plain and the City of Rockingham also exceeds the 10% retention target, and therefore meets the EPA objective of retention for the purpose of biodiversity conservation.

None of the vegetation units are considered to be a representation of the Sedgelands in Holocene dune swales of the southern Swan Coastal Plain (SCP 19a and 19b) TEC, nor any other ecological community of significance.

7. LIST OF PARTICIPANTS

The personnel who contributed to the project are summarised in **Table 15**.

Table 15 – Project Team

Name	Qualification	Years of Relevant Experience	Role
Kellie Bauer–Simpson Principal Ecologist	BSc. Biological Science	23	Project manager, study planning, report authorisation review
Lisa Chappell Senior Botanist / Environmental Scientist	BEnvSc. (Hons) (Environmental Science)	19	Field survey, floristic analysis, report preparation
John Braid	BEnvSc (Environmental Management)	17	Report technical review
Megan Gray Botanist/Ecologist	BSc. (Environmental Biology)	3	Field survey, report preparation, flora identifications, data management, floristic analysis
Taryn Brebner Botanist/Ecologist	BSc (Environmental Management)	7	Report preparation, flora identifications
Olga Nazarova Botanist	BSc. (Botany and Genetics)	4	Flora identifications
Flavia dos Santos Pereira Technician	BSc. (Geography)	3	Field survey assistance, GIS and mapping
Aishwarya Gujarathi Botanist/Ecologist	BSc. (Botany) MSc. (Environmental Science)	1	Report preparation
Will Bauer–Simpson Technician	Cert. IV (Health and Safety)	9	GIS mapping, spatial analysis, spatial data management
Linda Hosking Administration		20	Editorial support, report compilation

8. CONCLUSIONS

The key findings and conclusions arising from the flora and vegetation assessment within the study area are as follows:

- The study area has been subject to historic disturbances with the whole area having been previously cleared, and impacted by ongoing equine activities.
- The entire study area is within Bush Forever site 356 and is also classified as an ESA.
- No Threatened or Priority flora were recorded during the survey.
- One DP plant listed under the BAM Act, **Echium plantagineum* (Paterson's Curse) was recorded.
- A total of two vegetation units were defined and mapped within the study area.
- Both of the vegetation units (ArMs and TdFc) may be considered to be of regional significance, due to occurring within an ESA, with the latter also considered to potentially be of local significance due to occurring as a small, isolated community, and having a limited local extent and distribution.
- Two Commonwealth or State-listed TECs and/or PECs or their buffer were identified through the database search as potentially occurring within the study area, however due to the degraded nature of the site, none are represented in the study area.
- Vegetation condition within the study area ranges from 'Completely Degraded' to 'Good', with only 0.42% in 'Good' condition and the remainder in 'Degraded' or poorer condition.

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APPENDIX A - DBCA NATUREMAP SEARCH REPORT

KINGDOM	CLASS	TAXON	WA CONS. CODE
Animalia	ALGA	*Acrosorium* sp.	-
Animalia	ALGA	*Anotrichium elongatum*	-
Animalia	ALGA	*Antithamnion hanovioides*	-
Animalia	ALGA	*Areschougia ligulata*	-
Animalia	ALGA	*Bornetia binderiana*	-
Animalia	ALGA	*Brongniartella australis*	-
Animalia	ALGA	*Bryopsis australis*	-
Animalia	ALGA	*Bryopsis foliosa*	-
Animalia	ALGA	*Bryopsis gemellipara*	-
Animalia	ALGA	*Calliblepharis planicaulis*	-
Animalia	ALGA	*Callophycus costatus*	-
Animalia	ALGA	*Callophycus harveyanus*	-
Animalia	ALGA	*Callophycus oppositifolius*	-
Animalia	ALGA	*Carpopeltis elata*	-
Animalia	ALGA	*Caulerpa* sp.	-
Animalia	ALGA	*Caulocystis uvifera*	-
Animalia	ALGA	*Champia affinis*	-
Animalia	ALGA	*Champia zostericola*	-
Animalia	ALGA	*Chondria* sp.	-
Animalia	ALGA	*Cladophora* sp.	-
Animalia	ALGA	*Cladosiphon filum*	-
Animalia	ALGA	*Codium duthieae*	-
Animalia	ALGA	*Codium galeatum*	-
Animalia	ALGA	*Craspedocarpus ramentaceus*	-
Animalia	ALGA	*Craspedocarpus venosus*	-
Animalia	ALGA	*Curdiea obesa*	-
Animalia	ALGA	*Cystophora grevillei*	-
Animalia	ALGA	*Dasya extensa*	-
Animalia	ALGA	*Dasya* sp.	-
Animalia	ALGA	*Dasyclonium flaccidum*	-
Animalia	ALGA	*Dasyclonium incisum*	-
Animalia	ALGA	*Dictyomenia sonderi*	-
Animalia	ALGA	*Dictyopteris muelleri*	-
Animalia	ALGA	*Dictyota fastigiata*	-
Animalia	ALGA	*Dictyota polyclada*	-
Animalia	ALGA	*Echinothamnion hystrix*	-
Animalia	ALGA	*Erythroclonium muelleri*	-
Animalia	ALGA	*Feldmannia mitchelliae*	-
Animalia	ALGA	*Gelinaria* sp.	-
Animalia	ALGA	*Gloiocladia halymenioides*	-
Animalia	ALGA	*Haliptilon roseum*	-
Animalia	ALGA	*Haloplegma preissii*	-
Animalia	ALGA	*Halymenia cliftoni*	-
Animalia	ALGA	*Hennedya crispa*	-
Animalia	ALGA	*Herposiphonia rostrata*	-
Animalia	ALGA	*Heterosiphonia callithamnium*	-
Animalia	ALGA	*Heterosiphonia wrangelioides*	-
Animalia	ALGA	*Hirsutithallia laricina*	-
Animalia	ALGA	*Hydroclathrus clathratus*	-
Animalia	ALGA	*Hypoglossum revolutum*	-
Animalia	ALGA	*Laurencia cruciata*	-
Animalia	ALGA	*Laurencia shepherdii*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Animalia	ALGA	*Lenormandia latifolia*	-
Animalia	ALGA	*Lenormandia* sp.	-
Animalia	ALGA	*Leptosomia rosea*	-
Animalia	ALGA	*Lobospira bicuspidata*	-
Animalia	ALGA	*Nizymenia conferta*	-
Animalia	ALGA	*Penicillus nodulosus*	-
Animalia	ALGA	*Peyssonnelia* sp.	-
Animalia	ALGA	*Platysiphonia mutabilis*	-
Animalia	ALGA	*Pollexfenia pedicellata*	-
Animalia	ALGA	*Pterocladia lucida*	-
Animalia	ALGA	*Pterocladia rectangularis*	-
Animalia	ALGA	*Rhodymenia* sp.	-
Animalia	ALGA	*Sarcodia* sp.	-
Animalia	ALGA	*Sargassum fallax*	-
Animalia	ALGA	*Sargassum peronii*	-
Animalia	ALGA	*Sargassum* sp.	-
Animalia	ALGA	*Scaberia agardhii*	-
Animalia	ALGA	*Sirophysalis trinodis*	-
Animalia	ALGA	*Spongoclonium* sp.	-
Animalia	ALGA	*Turbinaria gracilis*	-
Animalia	ALGA	*Tylotus obtusatus*	-
Animalia	ALGA	*Wrangelia velutina*	-
Animalia	ALGA	*Zonaria* sp.	-
Animalia	AMPHI	*Crinia glauerti*	-
Animalia	AMPHI	*Crinia insignifera*	-
Animalia	AMPHI	*Heleioporus eyrei*	-
Animalia	AMPHI	*Heleioporus psammophilus*	-
Animalia	AMPHI	*Limnodynastes dorsalis*	-
Animalia	AMPHI	*Litoria adelaidensis*	-
Animalia	AMPHI	*Litoria moorei*	-
Animalia	BIRD	*Acanthiza apicalis*	-
Animalia	BIRD	*Acanthiza chrysorrhoa*	-
Animalia	BIRD	*Acanthiza inornata*	-
Animalia	BIRD	*Acanthorhynchus superciliosus*	-
Animalia	BIRD	*Accipiter cirrocephalus*	-
Animalia	BIRD	*Accipiter fasciatus*	-
Animalia	BIRD	*Acrocephalus australis*	-
Animalia	BIRD	*Actitis hypoleucos*	Migratory
Animalia	BIRD	*Anas castanea*	-
Animalia	BIRD	*Anas gracilis*	
Animalia	BIRD	*Anas platyrhynchos*	-
Animalia	BIRD	*Anas rhynchotis*	-
Animalia	BIRD	*Anas superciliosa*	-
Animalia	BIRD	*Anhinga melanogaster*	-
Animalia	BIRD	*Anhinga novaehollandiae*	-
Animalia	BIRD	*Anser anser*	-
Animalia	BIRD	*Anthochaera carunculata*	-
Animalia	BIRD	*Anthochaera lunulata*	
Animalia	BIRD	*Anthus australis*	-
Animalia	BIRD	*Aquila audax*	-
Animalia	BIRD	*Aquila morphnoides*	-
Animalia	BIRD	*Ardea alba*	
Animalia	BIRD	*Ardea alba* subsp. *modesta*	-
Animalia	BIRD	*Ardea garzetta* subsp. *nigripes*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Animalia	BIRD	*Ardea modesta*	-
Animalia	BIRD	*Ardea novaehollandiae*	-
Animalia	BIRD	*Ardea pacifica*	-
Animalia	BIRD	*Arenaria interpres*	Migratory
Animalia	BIRD	*Artamus cinereus*	-
Animalia	BIRD	*Artamus cyanopterus*	-
Animalia	BIRD	*Aythya australis*	-
Animalia	BIRD	*Barnardius zonarius*	-
Animalia	BIRD	*Biziura lobata*	-
Animalia	BIRD	*Cacatua pastinator*	-
Animalia	BIRD	*Cacatua roseicapilla*	
Animalia	BIRD	*Cacatua sanguinea*	-
Animalia	BIRD	*Cacatua tenuirostris*	-
Animalia	BIRD	*Cacomantis flabelliformis*	-
Animalia	BIRD	*Cacomantis pallidus*	-
Animalia	BIRD	*Calidris acuminata*	Migratory
Animalia	BIRD	*Calidris alba*	Migratory
Animalia	BIRD	*Calidris ferruginea*	-
Animalia	BIRD	*Calidris melanotos*	Migratory
Animalia	BIRD	*Calidris ruficollis*	Migratory
Animalia	BIRD	*Calidris subminuta*	Migratory
Animalia	BIRD	*Calidris tenuirostris*	-
Animalia	BIRD	*Calyptorhynchus banksii*	-
Animalia	BIRD	*Calyptorhynchus banksii naso*	-
Animalia	BIRD	*Calyptorhynchus* sp. 'white-tailed black cockatoo'	-
Animalia	BIRD	*Charadrius leschenaultii*	-
Animalia	BIRD	*Charadrius melanops*	-
Animalia	BIRD	*Charadrius ruficapillus*	-
Animalia	BIRD	*Chenonetta jubata*	-
Animalia	BIRD	*Chlidonias leucopterus*	Migratory
Animalia	BIRD	*Chroicocephalus novaehollandiae*	-
Animalia	BIRD	*Chrysococcyx basalis*	-
Animalia	BIRD	*Circus approximans*	-
Animalia	BIRD	*Circus assimilis*	-
Animalia	BIRD	*Cladorhynchus leucocephalus*	-
Animalia	BIRD	*Colluricincla harmonica*	-
Animalia	BIRD	*Columba livia*	-
Animalia	BIRD	*Coracina novaehollandiae*	-
Animalia	BIRD	*Corvus coronoides*	-
Animalia	BIRD	*Cracticus tibicen*	-
Animalia	BIRD	*Cracticus torquatus*	-
Animalia	BIRD	*Cygnus atratus*	-
Animalia	BIRD	*Dacelo novaeguineae*	-
Animalia	BIRD	*Daphoenositta chrysoptera*	-
Animalia	BIRD	*Dicaeum hirundinaceum*	-
Animalia	BIRD	*Diomedea chrysostoma*	-
Animalia	BIRD	*Dromaius novaehollandiae*	-
Animalia	BIRD	*Egretta garzetta*	-
Animalia	BIRD	*Egretta novaehollandiae*	-
Animalia	BIRD	*Elanus axillaris*	-
Animalia	BIRD	*Elanus caeruleus*	-
Animalia	BIRD	*Elanus caeruleus* subsp. *axillaris*	-
Animalia	BIRD	*Elseyornis melanops*	-
Animalia	BIRD	*Eolophus roseicapilla*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Animalia	BIRD	*Eopsaltria griseogularis*	-
Animalia	BIRD	*Epthianura albifrons*	-
Animalia	BIRD	*Erythrogonys cinctus*	-
Animalia	BIRD	*Falco berigora*	-
Animalia	BIRD	*Falco cenchroides*	-
Animalia	BIRD	*Falco longipennis*	-
Animalia	BIRD	*Fulica atra*	-
Animalia	BIRD	*Fulica atra* subsp. *australis*	-
Animalia	BIRD	*Gallinula tenebrosa*	-
Animalia	BIRD	*Gallinula tenebrosa* subsp. *tenebrosa*	-
Animalia	BIRD	*Gallinula ventralis*	-
Animalia	BIRD	*Gallirallus philippensis*	-
Animalia	BIRD	*Gerygone fusca*	-
Animalia	BIRD	*Grallina cyanoleuca*	-
Animalia	BIRD	*Haematopus longirostris*	-
Animalia	BIRD	*Haliaeetus leucogaster*	-
Animalia	BIRD	*Haliastur sphenurus*	-
Animalia	BIRD	*Halobaena caerulea*	-
Animalia	BIRD	*Hieraaetus morphnoides*	-
Animalia	BIRD	*Himantopus himantopus*	-
Animalia	BIRD	*Hirundo neoxena*	-
Animalia	BIRD	*Hirundo nigricans*	-
Animalia	BIRD	*Hydroprogne caspia*	Migratory
Animalia	BIRD	*Larus crassirostris*	-
Animalia	BIRD	*Larus novaehollandiae*	-
Animalia	BIRD	*Larus novaehollandiae* subsp. *novaehollandiae*	-
Animalia	BIRD	*Larus pacificus*	-
Animalia	BIRD	*Lichenostomus virescens*	-
Animalia	BIRD	*Lichmera indistincta*	-
Animalia	BIRD	*Lichmera indistincta* subsp. *indistincta*	-
Animalia	BIRD	*Limosa lapponica*	Migratory
Animalia	BIRD	*Limosa limosa*	Migratory
Animalia	BIRD	*Lophoictinia isura*	-
Animalia	BIRD	*Macronectes giganteus*	Migratory
Animalia	BIRD	*Macronectes halli*	Migratory
Animalia	BIRD	*Malacorhynchus membranaceus*	-
Animalia	BIRD	*Malurus splendens*	-
Animalia	BIRD	*Malurus splendens* subsp. *splendens*	-
Animalia	BIRD	*Megalurus gramineus*	-
Animalia	BIRD	*Merops ornatus*	-
Animalia	BIRD	*Microcarbo melanoleucos*	-
Animalia	BIRD	*Morus serrator*	-
Animalia	BIRD	*Neophema elegans*	-
Animalia	BIRD	*Ninox novaeseelandiae*	-
Animalia	BIRD	*Numenius madagascariensis*	-
Animalia	BIRD	*Numenius phaeopus*	Migratory
Animalia	BIRD	*Nycticorax caledonicus*	-
Animalia	BIRD	*Ocyphaps lophotes*	-
Animalia	BIRD	*Oxyura australis*	Priority 4
Animalia	BIRD	*Pachycephala pectoralis*	-
Animalia	BIRD	*Pachycephala rufiventris*	-
Animalia	BIRD	*Pachyptila belcheri*	-
Animalia	BIRD	*Pachyptila desolata*	-
Animalia	BIRD	*Pachyptila salvini*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Animalia	BIRD	*Pandion haliaetus*	Migratory
Animalia	BIRD	*Pardalotus punctatus*	-
Animalia	BIRD	*Pardalotus striatus*	-
Animalia	BIRD	*Pelecanus conspicillatus*	-
Animalia	BIRD	*Petrochelidon nigricans*	-
Animalia	BIRD	*Petroica boodang*	-
Animalia	BIRD	*Phalacrocorax carbo*	-
Animalia	BIRD	*Phalacrocorax melanoleucos*	-
Animalia	BIRD	*Phalacrocorax sulcirostris*	-
Animalia	BIRD	*Phalacrocorax varius*	-
Animalia	BIRD	*Phalacrocorax varius* subsp. *hypoleucos*	-
Animalia	BIRD	*Phaps chalcoptera*	-
Animalia	BIRD	*Phylidonyris nigra*	-
Animalia	BIRD	*Phylidonyris novaehollandiae*	-
Animalia	BIRD	*Platalea flavipes*	-
Animalia	BIRD	*Platycercus icterotis*	-
Animalia	BIRD	*Platycercus spurius*	-
Animalia	BIRD	*Platycercus zonarius*	-
Animalia	BIRD	*Platycercus zonarius* subsp. *semitorquatus*	-
Animalia	BIRD	*Plegadis falcinellus*	Migratory
Animalia	BIRD	*Pluvialis squatarola*	Migratory
Animalia	BIRD	*Podiceps cristatus*	-
Animalia	BIRD	*Poliocephalus poliocephalus*	-
Animalia	BIRD	*Polytelis anthopeplus*	-
Animalia	BIRD	*Porphyrio porphyrio*	-
Animalia	BIRD	*Porphyrio porphyrio* subsp. *bellus*	-
Animalia	BIRD	*Porzana fluminea*	-
Animalia	BIRD	*Porzana tabuensis*	-
Animalia	BIRD	*Pterodroma brevirostris*	-
Animalia	BIRD	*Pterodroma macroptera*	-
Animalia	BIRD	*Ptilotula ornatus*	-
Animalia	BIRD	*Puffinus assimilis* subsp. *assimilis*	-
Animalia	BIRD	*Purpureicephalus spurius*	-
Animalia	BIRD	*Pycnonotus jocosus* subsp. *jocosus*	-
Animalia	BIRD	*Recurvirostra novaehollandiae*	-
Animalia	BIRD	*Rhipidura albiscapa*	-
Animalia	BIRD	*Rhipidura fuliginosa*	-
Animalia	BIRD	*Rhipidura leucophrys*	-
Animalia	BIRD	*Rhipidura leucophrys* subsp. *leucophrys*	-
Animalia	BIRD	*Sericornis frontalis*	-
Animalia	BIRD	*Sericornis frontalis* subsp. *maculatus*	-
Animalia	BIRD	*Smicrornis brevirostris*	-
Animalia	BIRD	*Sterna anaethetus* subsp. *anaethetus*	-
Animalia	BIRD	*Sterna bergii*	-
Animalia	BIRD	*Sterna caspia*	-
Animalia	BIRD	*Sterna dougallii*	Migratory
Animalia	BIRD	*Sterna hybrida*	-
Animalia	BIRD	*Sterna paradisaea*	Migratory
Animalia	BIRD	*Sternula albifrons*	Migratory
Animalia	BIRD	*Sternula nereis*	-
Animalia	BIRD	*Stipiturus malachurus* subsp. *westernensis*	-
Animalia	BIRD	*Strepera versicolor*	-
Animalia	BIRD	*Streptopelia senegalensis*	-
Animalia	BIRD	*Sula serrator*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Animalia	BIRD	*Tachybaptus novaehollandiae*	-
Animalia	BIRD	*Tachybaptus novaehollandiae* subsp. *novaehollandiae*	-
Animalia	BIRD	*Tadorna tadornoides*	-
Animalia	BIRD	*Thalasseus bergii*	Migratory
Animalia	BIRD	*Thinornis rubricollis*	Priority 4
Animalia	BIRD	*Threskiornis molucca*	-
Animalia	BIRD	*Threskiornis spinicollis*	-
Animalia	BIRD	*Todiramphus sanctus*	-
Animalia	BIRD	*Trichoglossus haematodus*	-
Animalia	BIRD	*Tringa glareola*	Migratory
Animalia	BIRD	*Tringa hypoleucos*	-
Animalia	BIRD	*Tringa nebularia*	Migratory
Animalia	BIRD	*Tringa stagnatilis*	Migratory
Animalia	BIRD	*Turnix varius*	-
Animalia	BIRD	*Vanellus tricolor*	-
Animalia	BIRD	*Zanda latirostris*	Endangered
Animalia	BIRD	*Zosterops lateralis*	-
Animalia	FISH	*Acanthaluteres brownii*	-
Animalia	FISH	*Afurcagobius suppositus*	-
Animalia	FISH	*Allenichthys glauerti*	-
Animalia	FISH	*Anoplocapros amygdaloides*	-
Animalia	FISH	*Aplodactylus westralis*	-
Animalia	FISH	*Aptychotrema vincentiana*	-
Animalia	FISH	*Aracana aurita*	-
Animalia	FISH	*Atherinosoma presbyteroides*	-
Animalia	FISH	*Batrachomoeus rubricephalus*	-
Animalia	FISH	*Carcharias taurus*	Vulnerable
Animalia	FISH	*Carcharodon carcharias*	Vulnerable
Animalia	FISH	*Chaetodermis penicilligera*	-
Animalia	FISH	*Cleidopus gloriamaris*	-
Animalia	FISH	*Dactylophora nigricans*	-
Animalia	FISH	*Dactylopus dactylopus*	-
Animalia	FISH	*Dinolestes lewini*	-
Animalia	FISH	*Diodon nicthemerus*	-
Animalia	FISH	*Echeneis naucrates*	-
Animalia	FISH	*Eubalichthys caeruleoguttatus*	-
Animalia	FISH	*Eubalichthys cyanoura*	-
Animalia	FISH	*Eubalichthys mosaicus*	-
Animalia	FISH	*Euleptorhamphus viridis*	-
Animalia	FISH	*Furgaleus macki*	-
Animalia	FISH	*Galaxias occidentalis*	-
Animalia	FISH	*Gnathanacanthus goetzeei*	-
Animalia	FISH	*Gnathophis longicaudatus*	-
Animalia	FISH	*Gonorynchus greyi*	-
Animalia	FISH	*Gymnapistes marmoratus*	-
Animalia	FISH	*Gymnothorax woodwardi*	-
Animalia	FISH	*Heterodontus portusjacksoni*	-
Animalia	FISH	*Hexanchus nakamurai*	-
Animalia	FISH	*Hippocampus elongatus*	-
Animalia	FISH	*Histrio histrio*	-
Animalia	FISH	*Hypnos monopterygium*	-
Animalia	FISH	*Lagocephalus sceleratus*	-
Animalia	FISH	*Lotella rhacinus*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Animalia	FISH	*Mustelus antarcticus*	-
Animalia	FISH	*Myliobatis* sp.	-
Animalia	FISH	*Nannoperca vittata*	-
Animalia	FISH	*Ophisurus serpens*	-
Animalia	FISH	*Pegasus* sp.	-
Animalia	FISH	*Phyllichthys punctatus*	-
Animalia	FISH	*Phyllopteryx taeniolatus*	-
Animalia	FISH	*Pomatomus saltatrix*	-
Animalia	FISH	*Pterygotrigla polyommata*	-
Animalia	FISH	*Rachycentron canadum*	-
Animalia	FISH	*Rhycherus gloveri*	-
Animalia	FISH	*Rhynchobatus djiddensis*	-
Animalia	FISH	*Seriola hippos*	-
Animalia	FISH	*Sillago* sp.	-
Animalia	FISH	*Siphonognathus argyrophanes*	-
Animalia	FISH	*Siphonognathus radiatus*	-
Animalia	FISH	*Sphyraena obtusata*	-
Animalia	FISH	*Squatina australis*	-
Animalia	FISH	*Stigmatopora argus*	-
Animalia	FISH	*Sutorectus tentaculatus*	-
Animalia	FISH	*Tetrapturus angustirostris*	-
Animalia	FISH	*Thysanophrys cirronasus*	-
Animalia	FISH	*Trygonoptera mucosa*	-
Animalia	FISH	*Trygonoptera personata*	-
Animalia	FISH	*Trygonorrhina fasciata*	-
Animalia	FISH	*Urolophus lobatus*	-
Animalia	INVERT	*Allotrochosina karri*	-
Animalia	INVERT	*Aname mainae*	-
Animalia	INVERT	*Aname tepperi*	-
Animalia	INVERT	*Cherax destructor*	-
Animalia	INVERT	*Cherax quinquecarinatus*	-
Animalia	INVERT	*Dingosa serrata*	-
Animalia	INVERT	*Eriophora biapicata*	-
Animalia	INVERT	*Idiommata blackwalli*	-
Animalia	INVERT	*Idiosoma sigillatum*	Priority 3
Animalia	INVERT	*Isometroides vescus*	-
Animalia	INVERT	*Isopeda leishmanni*	-
Animalia	INVERT	*Jalmenus inous inous*	-
Animalia	INVERT	*Latrodectus hasseltii*	-
Animalia	INVERT	*Maratus pavonis*	-
Animalia	INVERT	*Missulena granulosa*	-
Animalia	INVERT	*Missulena hoggi*	-
Animalia	INVERT	*Missulena occatoria*	-
Animalia	INVERT	*Nicodamus mainae*	-
Animalia	INVERT	*Raveniella peckorum*	-
Animalia	INVERT	*Synemon gratiosa*	Priority 4
Animalia	INVERT	*Tetragnatha demissa*	-
Animalia	INVERT	*Tetralycosa oraria*	-
Animalia	INVERT	*Tuoba pallida*	-
Animalia	INVERT	*Urodacus novaehollandiae*	-
Animalia	INVERT	*Westralunio carteri*	Vulnerable
Animalia	MAMMAL	*Austronomus australis*	-
Animalia	MAMMAL	*Bettongia penicillata* subsp. *ogilbyi*	Critically Endangered

KINGDOM	CLASS	TAXON	WA CONS. CODE
Animalia	MAMMAL	*Canis familiaris*	-
Animalia	MAMMAL	*Canis lupus*	-
Animalia	MAMMAL	*Canis lupus subsp. familiaris*	-
Animalia	MAMMAL	*Chalinolobus gouldii*	-
Animalia	MAMMAL	*Dasyurus geoffroii*	Vulnerable
Animalia	MAMMAL	*Eubalaena australis*	Vulnerable
Animalia	MAMMAL	*Felis catus*	-
Animalia	MAMMAL	*Globicephala macrorhynchus*	-
Animalia	MAMMAL	*Hydromys chrysogaster*	Priority 4
Animalia	MAMMAL	*Isoodon fusciventer*	Priority 4
Animalia	MAMMAL	*Isoodon obesulus*	-
Animalia	MAMMAL	*Isoodon obesulus* subsp. *fusciventer*	-
Animalia	MAMMAL	*Macropus fuliginosus*	-
Animalia	MAMMAL	*Macropus fuliginosus melanops*	-
Animalia	MAMMAL	*Mormopterus planiceps*	-
Animalia	MAMMAL	*Mus musculus*	-
Animalia	MAMMAL	*Nyctophilus geoffroyi*	-
Animalia	MAMMAL	*Oryctolagus cuniculus*	-
Animalia	MAMMAL	*Ozimops kitcheneri*	-
Animalia	MAMMAL	*Phascogale tapoatafa*	-
Animalia	MAMMAL	*Phascogale tapoatafa* subsp. *tapoatafa*	-
Animalia	MAMMAL	*Phascogale tapoatafa* subsp. *wambenger*	Conservation Dependent
Animalia	MAMMAL	*Rattus rattus*	-
Animalia	MAMMAL	*Stenella coeruleoalba*	-
Animalia	MAMMAL	*Tadarida australis*	-
Animalia	MAMMAL	*Trichosurus vulpecula*	-
Animalia	MAMMAL	*Trichosurus vulpecula hypoleucus*	-
Animalia	MAMMAL	*Trichosurus vulpecula* subsp. *vulpecula*	-
Animalia	MAMMAL	*Tursiops aduncus*	Migratory
Animalia	MAMMAL	*Vespadelus regulus*	-
Animalia	MAMMAL	*Vulpes vulpes*	-
Animalia	REPTILE	*Acritoscincus trilineatum*	-
Animalia	REPTILE	*Acritoscincus trilineatus*	-
Animalia	REPTILE	*Anilios australis*	-
Animalia	REPTILE	*Aprasia repens*	-
Animalia	REPTILE	*Brachyurophis semifasciata*	-
Animalia	REPTILE	*Brachyurophis semifasciatus*	-
Animalia	REPTILE	*Caretta caretta*	Endangered
Animalia	REPTILE	*Chelodina colliei*	-
Animalia	REPTILE	*Chelodina oblonga*	-
Animalia	REPTILE	*Christinus marmoratus*	-
Animalia	REPTILE	*Cryptoblepharus buchananii*	-
Animalia	REPTILE	*Cryptoblepharus plagiocephalus*	-
Animalia	REPTILE	*Ctenophorus adelaidensis*	-
Animalia	REPTILE	*Ctenotus australis*	-
Animalia	REPTILE	*Ctenotus fallens*	-
Animalia	REPTILE	*Ctenotus gemmula*	-
Animalia	REPTILE	*Delma fraseri*	-
Animalia	REPTILE	*Delma grayii*	-
Animalia	REPTILE	*Demansia psammophis*	-
Animalia	REPTILE	*Demansia psammophis* subsp. *reticulata*	-
Animalia	REPTILE	*Egernia kingii*	-
Animalia	REPTILE	*Elapognathus coronatus*	-

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Animalia	REPTILE	*Glaphyromorphus isolepis*	-
Animalia	REPTILE	*Hemidactylus frenatus*	-
Animalia	REPTILE	*Hemiergis quadrilineata*	-
Animalia	REPTILE	*Hydrophis elegans*	-
Animalia	REPTILE	*Hydrophis platurus*	-
Animalia	REPTILE	*Lerista elegans*	-
Animalia	REPTILE	*Lerista lineata*	Priority 3
Animalia	REPTILE	*Lerista lineopunctulata*	-
Animalia	REPTILE	*Lialis burtonis*	-
Animalia	REPTILE	*Menetia greyii*	-
Animalia	REPTILE	*Morelia spilota subsp. imbricata*	-
Animalia	REPTILE	*Morethia lineoocellata*	-
Animalia	REPTILE	*Natator depressus*	Vulnerable
Animalia	REPTILE	*Neelaps calonotos*	Priority 3
Animalia	REPTILE	*Notechis scutatus*	-
Animalia	REPTILE	*Parasuta gouldii*	-
Animalia	REPTILE	*Pletholax gracilis gracilis*	-
Animalia	REPTILE	*Pogona minor*	-
Animalia	REPTILE	*Pogona minor* subsp. *minor*	-
Animalia	REPTILE	*Pseudonaja affinis*	-
Animalia	REPTILE	*Pseudonaja affinis* subsp. *affinis*	-
Animalia	REPTILE	*Ramphotyphlops australis*	-
Animalia	REPTILE	*Rankinia adelaidensis* subsp. *adelaidensis*	-
Animalia	REPTILE	*Simoselaps bertholdi*	-
Animalia	REPTILE	*Strophurus spinigerus*	-
Animalia	REPTILE	*Strophurus spinigerus spinigerus*	-
Animalia	REPTILE	*Tiliqua occipitalis*	-
Animalia	REPTILE	*Tiliqua rugosa*	-
Animalia	REPTILE	*Tiliqua rugosa* subsp. *rugosa*	-
Animalia	REPTILE	*Varanus gouldii*	-
Animalia	REPTILE	*Varanus rosenbergi*	-
Animalia	REPTILE	*Varanus tristis subsp. tristis*	-
Fungi	FUNGUS	*Aleurodiscus sp.*	-
Fungi	FUNGUS	*Armillaria luteobubalina*	-
Fungi	FUNGUS	*Auriscalpium barbatum*	-
Fungi	FUNGUS	*Boletus* sp.	-
Fungi	FUNGUS	*Byssomerulius corium*	-
Fungi	FUNGUS	*Clavulina* sp.	-
Fungi	FUNGUS	*Clitocybe* sp.	-
Fungi	FUNGUS	*Fomitopsis lilacinogilva*	-
Fungi	FUNGUS	*Gymnopilus allantopus*	-
Fungi	FUNGUS	*Inocybe acaciae*	-
Fungi	FUNGUS	*Inocybe sabulosa*	-
Fungi	FUNGUS	*Inocybe* sp.	-
Fungi	FUNGUS	*Lyophyllum* sp.	-
Fungi	FUNGUS	*Macrolepiota clelandii*	-
Fungi	FUNGUS	*Megalocystidium* sp.	-
Fungi	FUNGUS	*Melanoleuca* sp.	-
Fungi	FUNGUS	*Mycena clarkeana*	-
Fungi	FUNGUS	*Mycena nargan*	-
Fungi	FUNGUS	*Mycena* sp.	-
Fungi	FUNGUS	*Omphalotus nidiformis*	-
Fungi	FUNGUS	*Phlebia rufa*	-
Fungi	FUNGUS	*Phlebia subceracea*	-

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Fungi	FUNGUS	*Phytophthora cinnamomi*	-
Fungi	FUNGUS	*Pleuroflammula praestans*	-
Fungi	FUNGUS	*Psathyrella* sp.	-
Fungi	FUNGUS	*Resupinatus cinerascens*	-
Fungi	FUNGUS	*Rickenella fibula*	-
Fungi	FUNGUS	*Volvariella media*	-
Fungi	FUNGUS	*Xerula* sp.	-
Fungi	FUNGUS	*Xylaria hypoxolon*	-
Fungi	Lichen	*Candelariella* sp.	-
Fungi	Lichen	*Rimelia reticulata*	-
Plantae	Dicot	*Acacia applanata*	-
Plantae	Dicot	*Acacia benthamii*	Priority 2
Plantae	Dicot	*Acacia cochlearis*	-
Plantae	Dicot	*Acacia cyclops*	-
Plantae	Dicot	*Acacia huegelii*	-
Plantae	Dicot	*Acacia lasiocarpa*	-
Plantae	Dicot	*Acacia lasiocarpa* var. *lasiocarpa*	-
Plantae	Dicot	*Acacia pulchella*	-
Plantae	Dicot	*Acacia pulchella* var. *glaberrima*	-
Plantae	Dicot	*Acacia pulchella* var. *goadbyi*	-
Plantae	Dicot	*Acacia rostellifera*	-
Plantae	Dicot	*Acacia saligna*	-
Plantae	Dicot	*Acacia* sp. Binningup (G. Cockerton et al. WB 37784)	Priority 1
Plantae	Dicot	*Acacia stenoptera*	-
Plantae	Dicot	*Acacia truncata*	-
Plantae	Dicot	*Acacia willdenowiana*	-
Plantae	Dicot	*Acacia saligna* subsp. Wheatbelt (B.R. Maslin 8602)	-
Plantae	Dicot	*Adriana quadripartita*	-
Plantae	Dicot	*Agonis flexuosa* var. *flexuosa*	-
Plantae	Dicot	*Allocasuarina fraseriana*	-
Plantae	Dicot	*Alyxia buxifolia*	-
Plantae	Dicot	*Ambrosia psilostachya*	-
Plantae	Dicot	*Ambrosia tenuifolia*	-
Plantae	Dicot	*Amperea simulans*	-
Plantae	Dicot	*Anthocercis littorea*	-
Plantae	Dicot	*Aotus gracillima*	-
Plantae	Dicot	*Apium annuum*	-
Plantae	Dicot	*Apium prostratum*	-
Plantae	Dicot	*Apium prostratum* subsp. *prostratum* var. *prostratum*	-
Plantae	Dicot	*Arctotheca calendula*	-
Plantae	Dicot	*Arctotheca calendula* x *populifolia*	-
Plantae	Dicot	*Arctotis stoechadifolia*	-
Plantae	Dicot	*Astartea affinis*	-
Plantae	Dicot	*Astartea scoparia*	-
Plantae	Dicot	*Asteridea pulverulenta*	-
Plantae	Dicot	*Atriplex prostrata*	-
Plantae	Dicot	*Atriplex suberecta*	-
Plantae	Dicot	*Banksia attenuata*	-
Plantae	Dicot	*Banksia grandis*	-
Plantae	Dicot	*Banksia ilicifolia*	-
Plantae	Dicot	*Banksia littoralis*	-
Plantae	Dicot	*Banksia menziesii*	-
Plantae	Dicot	*Banksia nivea*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Dicot	*Banksia nivea*	-
Plantae	Dicot	*Banksia sessilis* var. *cygnorum*	-
Plantae	Dicot	*Banksia sessilis* var. *sessilis*	-
Plantae	Dicot	*Bellardia trixago*	-
Plantae	Dicot	*Bellardia viscosa*	-
Plantae	Dicot	*Bellardia viscosa*	-
Plantae	Dicot	*Beyeria cinerea* subsp. *cinerea*	Priority 3
Plantae	Dicot	*Bossiaea eriocarpa*	-
Plantae	Dicot	*Brachyloma preissii*	-
Plantae	Dicot	*Brachyscome iberidifolia*	-
Plantae	Dicot	*Brassica tournefortii*	-
Plantae	Dicot	*Brassica* x *napus*	-
Plantae	Dicot	*Cakile maritima*	-
Plantae	Dicot	*Calandrinia brevipedata*	-
Plantae	Dicot	*Calandrinia corrigioloides*	-
Plantae	Dicot	*Calandrinia granulifera*	-
Plantae	Dicot	*Calandrinia liniflora*	-
Plantae	Dicot	*Calandrinia oraria*	Priority 3
Plantae	Dicot	*Calandrinia tholiformis*	-
Plantae	Dicot	*Calothamnus lateralis*	-
Plantae	Dicot	*Calytrix angulata*	-
Plantae	Dicot	*Calytrix flavescens*	-
Plantae	Dicot	*Cardamine hirsuta*	-
Plantae	Dicot	*Cardamine paucijuga*	Priority 2
Plantae	Dicot	*Carpobrotus virescens*	-
Plantae	Dicot	*Cassytha flava*	-
Plantae	Dicot	*Cassytha racemosa*	-
Plantae	Dicot	*Cassytha racemosa* forma *racemosa*	-
Plantae	Dicot	*Casuarina obesa*	-
Plantae	Dicot	*Centaurea melitensis*	-
Plantae	Dicot	*Centaurium tenuiflorum*	-
Plantae	Dicot	*Centella asiatica*	-
Plantae	Dicot	*Centranthus ruber* subsp. *ruber*	-
Plantae	Dicot	*Cerastium glomeratum*	-
Plantae	Dicot	*Chenopodium album*	-
Plantae	Dicot	*Chenopodium glaucum*	-
Plantae	Dicot	*Chenopodium murale*	-
Plantae	Dicot	*Cirsium vulgare*	-
Plantae	Dicot	*Clematis linearifolia*	-
Plantae	Dicot	*Comesperma calymega*	-
Plantae	Dicot	*Comesperma confertum*	-
Plantae	Dicot	*Comesperma integerrimum*	-
Plantae	Dicot	*Comesperma virgatum*	-
Plantae	Dicot	*Conium maculatum*	-
Plantae	Dicot	*Conospermum capitatum* subsp. *glabratum*	-
Plantae	Dicot	*Conospermum triplinervium*	-
Plantae	Dicot	*Conostephium preissii*	-
Plantae	Dicot	*Corymbia calophylla*	-
Plantae	Dicot	*Cotula coronopifolia*	-
Plantae	Dicot	*Craspedia* sp. Yalgorup National Park (G.J. Keighery 14449)	-
Plantae	Dicot	*Crassula colorata*	-
Plantae	Dicot	*Crassula colorata* var. *acuminata*	-
Plantae	Dicot	*Crassula colorata* var. *colorata*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Dicot	*Crassula glomerata*	-
Plantae	Dicot	*Crassula natans* var. *minor*	-
Plantae	Dicot	*Cryptandra mutila*	-
Plantae	Dicot	*Cuscuta epithymum*	-
Plantae	Dicot	*Cuscuta planiflora*	-
Plantae	Dicot	*Cymbalaria muralis* subsp. *muralis*	-
Plantae	Dicot	*Dampiera linearis*	-
Plantae	Dicot	*Dampiera trigona*	-
Plantae	Dicot	*Darwinia neildiana*	-
Plantae	Dicot	*Daucus glochidiatus*	-
Plantae	Dicot	*Daviesia incrassata* subsp. *incrassata*	-
Plantae	Dicot	*Daviesia physodes*	-
Plantae	Dicot	*Daviesia triflora*	-
Plantae	Dicot	*Dillwynia dillwynioides*	Priority 3
Plantae	Dicot	*Diplolaena dampieri*	-
Plantae	Dicot	*Diplopeltis huegelii* subsp. *huegelii*	-
Plantae	Dicot	*Diplotaxis muralis*	-
Plantae	Dicot	*Dischisma arenarium*	-
Plantae	Dicot	*Dischisma capitatum*	-
Plantae	Dicot	*Drosera drummondii*	-
Plantae	Dicot	*Drosera erythrorhiza*	-
Plantae	Dicot	*Drosera geniculata*	-
Plantae	Dicot	*Drosera gigantea*	-
Plantae	Dicot	*Drosera glanduligera*	-
Plantae	Dicot	*Drosera macrantha*	-
Plantae	Dicot	*Drosera menziesii*	-
Plantae	Dicot	*Drosera neesii*	-
Plantae	Dicot	*Drosera nitidula*	-
Plantae	Dicot	*Drosera pallida*	-
Plantae	Dicot	*Drosera* sp. Branched styles (S.C. Coffey 193)	-
Plantae	Dicot	*Drosera stolonifera*	-
Plantae	Dicot	*Epilobium billardiereanum*	-
Plantae	Dicot	*Epilobium billardiereanum* subsp. *intermedium*	-
Plantae	Dicot	*Epilobium hirtigerum*	-
Plantae	Dicot	*Epilobium tetragonum* subsp. *tetragonum*	-
Plantae	Dicot	*Eremophila glabra* subsp. *albicans*	-
Plantae	Dicot	*Erigeron sumatrensis*	-
Plantae	Dicot	*Erodium botrys*	-
Plantae	Dicot	*Erodium cicutarium*	-
Plantae	Dicot	*Eryngium pinnatifidum* subsp. *pinnatifidum*	-
Plantae	Dicot	*Eucalyptus foecunda*	-
Plantae	Dicot	*Eucalyptus gomphocephala*	-
Plantae	Dicot	*Eucalyptus marginata*	-
Plantae	Dicot	*Eucalyptus marginata* subsp. *marginata*	-
Plantae	Dicot	*Eucalyptus petiolaris*	-
Plantae	Dicot	*Eucalyptus rudis*	-
Plantae	Dicot	*Euphorbia paralias*	-
Plantae	Dicot	*Euphorbia terracina*	-
Plantae	Dicot	*Eutaxia virgata*	-
Plantae	Dicot	*Exocarpos sparteus*	-
Plantae	Dicot	*Gastrolobium capitatum*	-
Plantae	Dicot	*Gastrolobium ebracteolatum*	-
Plantae	Dicot	*Gastrolobium nervosum*	-
Plantae	Dicot	*Gastrolobium nervosum*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Dicot	*Gaudium laevigatum*	-
Plantae	Dicot	*Geranium molle*	-
Plantae	Dicot	*Geranium retrorsum*	-
Plantae	Dicot	*Geranium solanderi*	-
Plantae	Dicot	*Gompholobium confertum*	-
Plantae	Dicot	*Gompholobium tomentosum*	-
Plantae	Dicot	*Goodenia pulchella*	-
Plantae	Dicot	*Grevillea crithmifolia*	-
Plantae	Dicot	*Grevillea glabrilimba*	-
Plantae	Dicot	*Grevillea vestita* subsp. *vestita*	-
Plantae	Dicot	*Hakea lissocarpha*	-
Plantae	Dicot	*Hakea prostrata*	-
Plantae	Dicot	*Hakea varia*	-
Plantae	Dicot	*Hardenbergia comptoniana*	-
Plantae	Dicot	*Heliophila pusilla*	-
Plantae	Dicot	*Hemiandra glabra*	-
Plantae	Dicot	*Hemiandra pungens*	-
Plantae	Dicot	*Hibbertia cuneiformis*	-
Plantae	Dicot	*Hibbertia hypericoides*	-
Plantae	Dicot	*Hibbertia hypericoides* subsp. *hypericoides*	-
Plantae	Dicot	*Hibbertia racemosa*	-
Plantae	Dicot	*Hibbertia stellaris*	-
Plantae	Dicot	*Hibbertia vaginata*	-
Plantae	Dicot	*Homalosciadium homalocarpum*	-
Plantae	Dicot	*Hovea trisperma*	-
Plantae	Dicot	*Hovea trisperma* var. *trisperma*	-
Plantae	Dicot	*Hydrocotyle diantha*	-
Plantae	Dicot	*Hydrocotyle hispidula*	-
Plantae	Dicot	*Hydrocotyle intertexta*	-
Plantae	Dicot	*Hydrocotyle scutellifera*	-
Plantae	Dicot	*Hydrocotyle tetragonocarpa*	-
Plantae	Dicot	*Hypocalymma angustifolium*	-
Plantae	Dicot	*Hypocalymma balbakiae*	-
Plantae	Dicot	*Hypocalymma robustum*	-
Plantae	Dicot	*Hypochaeris glabra*	-
Plantae	Dicot	*Hypochaeris radicata*	-
Plantae	Dicot	*Isotropis cuneifolia*	-
Plantae	Dicot	*Isotropis cuneifolia* subsp. *cuneifolia*	-
Plantae	Dicot	*Ixiolaena viscosa*	-
Plantae	Dicot	*Jacksonia furcellata*	-
Plantae	Dicot	*Jacksonia sericea*	Priority 4
Plantae	Dicot	*Kennedia coccinea*	-
Plantae	Dicot	*Kennedia prostrata*	-
Plantae	Dicot	*Kunzea ericifolia*	-
Plantae	Dicot	*Kunzea glabrescens*	-
Plantae	Dicot	*Lagenophora huegelii*	-
Plantae	Dicot	*Lasiopetalum membranaceum*	Priority 3
Plantae	Dicot	*Lechenaultia expansa*	-
Plantae	Dicot	*Leontodon rhagadioloides*	-
Plantae	Dicot	*Leptomeria empetriformis*	-
Plantae	Dicot	*Leptomeria preissiana*	-
Plantae	Dicot	*Leptorhynchos scaber*	-
Plantae	Dicot	*Leucopogon australis*	-
Plantae	Dicot	*Leucopogon parviflorus*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Dicot	*Levenhookia stipitata*	-
Plantae	Dicot	*Linaria maroccana*	-
Plantae	Dicot	*Linum marginale*	-
Plantae	Dicot	*Liparophyllum capitatum*	-
Plantae	Dicot	*Liparophyllum violifolium*	-
Plantae	Dicot	*Lobelia anceps*	-
Plantae	Dicot	*Lobelia anceps*	-
Plantae	Dicot	*Lobelia tenuior*	-
Plantae	Dicot	*Logania vaginalis*	-
Plantae	Dicot	*Lotus subbiflorus*	-
Plantae	Dicot	*Lotus subbiflorus*	-
Plantae	Dicot	*Lysiandra calycina*	-
Plantae	Dicot	*Lysimachia arvensis*	-
Plantae	Dicot	*Lysimachia arvensis*	-
Plantae	Dicot	*Macarthuria australis*	-
Plantae	Dicot	*Malva arborea*	-
Plantae	Dicot	*Malva parviflora*	-
Plantae	Dicot	*Malva preissiana*	-
Plantae	Dicot	*Malva pseudolavatera*	-
Plantae	Dicot	*Medicago polymorpha*	-
Plantae	Dicot	*Meionectes brownii*	-
Plantae	Dicot	*Melaleuca incana*	-
Plantae	Dicot	*Melaleuca incana* subsp. *incana*	-
Plantae	Dicot	*Melaleuca lateritia*	-
Plantae	Dicot	*Melaleuca preissiana*	-
Plantae	Dicot	*Melaleuca rhaphiophylla*	-
Plantae	Dicot	*Melaleuca systena*	-
Plantae	Dicot	*Melaleuca systena*	-
Plantae	Dicot	*Melaleuca teretifolia*	-
Plantae	Dicot	*Melaleuca thymoides*	-
Plantae	Dicot	*Melaleuca viminea*	-
Plantae	Dicot	*Melaleuca viminea* subsp. *viminea*	-
Plantae	Dicot	*Melilotus indicus*	-
Plantae	Dicot	*Mentha x piperita*	-
Plantae	Dicot	*Millotia myosotidifolia*	-
Plantae	Dicot	*Minuartia mediterranea*	-
Plantae	Dicot	*Misopates orontium*	-
Plantae	Dicot	*Monopsis debilis*	-
Plantae	Dicot	*Monopsis debilis* var. *depressa*	-
Plantae	Dicot	*Muehlenbeckia adpressa*	-
Plantae	Dicot	*Myoporum caprarioides*	-
Plantae	Dicot	*Myoporum insulare*	-
Plantae	Dicot	*Nerium oleander*	-
Plantae	Dicot	*Nuytsia floribunda*	-
Plantae	Dicot	*Oenothera drummondii* subsp. *drummondii*	-
Plantae	Dicot	*Oenothera lindheimeri*	-
Plantae	Dicot	*Olearia axillaris*	-
Plantae	Dicot	*Opercularia hispidula*	-
Plantae	Dicot	*Opercularia vaginata*	-
Plantae	Dicot	*Ornduffia albiflora*	-
Plantae	Dicot	*Ornithopus compressus*	-
Plantae	Dicot	*Orobanche minor*	-
Plantae	Dicot	*Oxalis exilis*	-
Plantae	Dicot	*Oxalis perennans*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Dicot	*Parentucellia latifolia*	-
Plantae	Dicot	*Parietaria debilis*	-
Plantae	Dicot	*Parietaria judaica*	-
Plantae	Dicot	*Parsonsia diaphanophleba*	Priority 4
Plantae	Dicot	*Pelargonium capitatum*	-
Plantae	Dicot	*Pelargonium littorale*	-
Plantae	Dicot	*Pericalymma ellipticum*	-
Plantae	Dicot	*Pericalymma ellipticum* var. *floridum*	-
Plantae	Dicot	*Petrophile axillaris*	-
Plantae	Dicot	*Petrophile linearis*	-
Plantae	Dicot	*Petrorhagia dubia*	-
Plantae	Dicot	*Philotheca spicata*	-
Plantae	Dicot	*Phyla nodiflora* var. *nodiflora*	-
Plantae	Dicot	*Phyllangium paradoxum*	-
Plantae	Dicot	*Physalis peruviana*	-
Plantae	Dicot	*Picris angustifolia* subsp. *angustifolia*	-
Plantae	Dicot	*Pigea calycina*	-
Plantae	Dicot	*Pigea debilissima*	-
Plantae	Dicot	*Pimelea calcicola*	Priority 3
Plantae	Dicot	*Pimelea lanata*	-
Plantae	Dicot	*Pimelea rosea*	-
Plantae	Dicot	*Pimelea rosea* subsp. *rosea*	-
Plantae	Dicot	*Pithocarpa cordata*	-
Plantae	Dicot	*Plantago lanceolata*	-
Plantae	Dicot	*Podolepis gracilis*	-
Plantae	Dicot	*Podotheca angustifolia*	-
Plantae	Dicot	*Podotheca chrysantha*	-
Plantae	Dicot	*Podotheca gnaphalioides*	-
Plantae	Dicot	*Pseudognaphalium luteoalbum*	-
Plantae	Dicot	*Ptilotus drummondii*	-
Plantae	Dicot	*Ptilotus polystachyus*	-
Plantae	Dicot	*Ptilotus sericostachyus*	-
Plantae	Dicot	*Ptilotus sericostachyus* subsp. *sericostachyus*	-
Plantae	Dicot	*Quinetia urvillei*	-
Plantae	Dicot	*Ranunculus pumilio*	-
Plantae	Dicot	*Ranunculus sessiliflorus* var. *sessiliflorus*	-
Plantae	Dicot	*Ranunculus trilobus*	-
Plantae	Dicot	*Raphanus raphanistrum*	-
Plantae	Dicot	*Retama raetam*	-
Plantae	Dicot	*Rhagodia baccata* subsp. *baccata*	-
Plantae	Dicot	*Rhagodia baccata* subsp. *dioica*	-
Plantae	Dicot	*Rhodanthe citrina*	-
Plantae	Dicot	*Rorippa nasturtium-aquaticum*	-
Plantae	Dicot	*Rumex crispus*	-
Plantae	Dicot	*Rumex pulcher*	-
Plantae	Dicot	*Salicornia quinqueflora*	-
Plantae	Dicot	*Salicornia quinqueflora* subsp. *quinqueflora*	-
Plantae	Dicot	*Samolus junceus*	-
Plantae	Dicot	*Samolus repens*	-
Plantae	Dicot	*Samolus repens* var. *paucifolius*	-
Plantae	Dicot	*Scaevola anchusifolia*	-
Plantae	Dicot	*Scaevola canescens*	-
Plantae	Dicot	*Scaevola crassifolia*	-
Plantae	Dicot	*Scaevola globulifera*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Dicot	*Scaevola nitida*	-
Plantae	Dicot	*Scaevola repens* var. *repens*	-
Plantae	Dicot	*Scaevola thesioides* subsp. *thesioides*	-
Plantae	Dicot	*Schinus terebinthifolia*	-
Plantae	Dicot	*Scholtzia involucrata*	-
Plantae	Dicot	*Senecio condylus*	-
Plantae	Dicot	*Senecio pinnatifolius*	-
Plantae	Dicot	*Senecio pinnatifolius* var. *maritimus*	-
Plantae	Dicot	*Senecio ramosissimus*	-
Plantae	Dicot	*Senecio spanomerus*	-
Plantae	Dicot	*Silene gallica*	-
Plantae	Dicot	*Siloxerus filifolius*	-
Plantae	Dicot	*Siloxerus humifusus*	-
Plantae	Dicot	*Siloxerus multiflorus*	-
Plantae	Dicot	*Sixalix atropurpurea*	-
Plantae	Dicot	*Solanum nigrum*	-
Plantae	Dicot	*Solanum symonii*	-
Plantae	Dicot	*Sonchus asper*	-
Plantae	Dicot	*Sonchus hydrophilus*	-
Plantae	Dicot	*Sonchus oleraceus*	-
Plantae	Dicot	*Sphaerolobium calcicola*	Priority 3
Plantae	Dicot	*Spyridium globulosum*	-
Plantae	Dicot	*Spyridium globulosum*	-
Plantae	Dicot	*Stackhousia huegelii*	-
Plantae	Dicot	*Stackhousia monogyna*	-
Plantae	Dicot	*Stellaria media*	-
Plantae	Dicot	*Stellaria pallida*	-
Plantae	Dicot	*Stirlingia latifolia*	-
Plantae	Dicot	*Stylidium brunonianum*	-
Plantae	Dicot	*Stylidium calcaratum*	-
Plantae	Dicot	*Stylidium despectum*	-
Plantae	Dicot	*Stylidium dichotomum*	-
Plantae	Dicot	*Stylidium divaricatum*	-
Plantae	Dicot	*Stylidium longitubum*	Priority 4
Plantae	Dicot	*Stylidium neurophyllum*	-
Plantae	Dicot	*Stylidium piliferum*	-
Plantae	Dicot	*Stylidium recurvum*	-
Plantae	Dicot	*Stylidium repens*	-
Plantae	Dicot	*Stylidium schoenoides*	-
Plantae	Dicot	*Stylidium utricularioides*	-
Plantae	Dicot	*Styphelia conostephioides*	-
Plantae	Dicot	*Styphelia propinqua*	-
Plantae	Dicot	*Styphelia pallida*	-
Plantae	Dicot	*Suaeda australis*	-
Plantae	Dicot	*Symphyotrichum squamatum*	-
Plantae	Dicot	*Synaphea spinulosa*	-
Plantae	Dicot	*Tamarix aphylla*	-
Plantae	Dicot	*Taxandria linearifolia*	-
Plantae	Dicot	*Templetonia retusa*	-
Plantae	Dicot	*Tetragonia decumbens*	-
Plantae	Dicot	*Thomasia cognata*	-
Plantae	Dicot	*Threlkeldia diffusa*	-
Plantae	Dicot	*Trachymene coerulea*	-
Plantae	Dicot	*Trachymene coerulea* subsp. *coerulea*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Dicot	*Trachymene pilosa*	-
Plantae	Dicot	*Trifolium arvense*	-
Plantae	Dicot	*Trifolium campestre*	-
Plantae	Dicot	*Trifolium dubium*	-
Plantae	Dicot	*Trifolium glomeratum*	-
Plantae	Dicot	*Trifolium subterraneum*	-
Plantae	Dicot	*Trymalium ledifolium* var. *ledifolium*	-
Plantae	Dicot	*Ursinia anthemoides*	-
Plantae	Dicot	*Ursinia anthemoides* subsp. *anthemoides*	-
Plantae	Dicot	*Vellereophyton dealbatum*	-
Plantae	Dicot	*Verbascum virgatum*	-
Plantae	Dicot	*Verbesina encelioides*	-
Plantae	Dicot	*Viminaria juncea*	-
Plantae	Dicot	*Wahlenbergia preissii*	-
Plantae	Dicot	*Waitzia nitida*	-
Plantae	Dicot	*Westringia dampieri*	-
Plantae	Dicot	*Wilsonia backhousei*	-
Plantae	Dicot	*Xanthosia huegelii*	-
Plantae	FERN	*Histiopteris incisa*	-
Plantae	FERN	*Phylloglossum drummondii*	-
Plantae	FERN	*Selaginella gracillima*	-
Plantae	GYMNO	*Macrozamia riedlei*	-
Plantae	GYMNO	*Pinus pinaster*	-
Plantae	Monocot	*Acanthocarpus preissii*	-
Plantae	Monocot	*Aira caryophyllea*	-
Plantae	Monocot	*Aira cupaniana*	-
Plantae	Monocot	*Ammophila arenaria subsp. arenaria*	-
Plantae	Monocot	*Ammothryon grandiflorum*	-
Plantae	Monocot	*Anigozanthos humilis*	-
Plantae	Monocot	*Anigozanthos manglesii*	-
Plantae	Monocot	*Anthoxanthum odoratum*	-
Plantae	Monocot	*Aphelia cyperoides*	-
Plantae	Monocot	*Arundo donax*	-
Plantae	Monocot	*Asparagus asparagoides*	-
Plantae	Monocot	*Asphodelus fistulosus*	-
Plantae	Monocot	*Austrostipa compressa*	-
Plantae	Monocot	*Austrostipa compressa*	-
Plantae	Monocot	*Austrostipa exilis*	-
Plantae	Monocot	*Austrostipa flavescens*	-
Plantae	Monocot	*Austrostipa flavescens*	-
Plantae	Monocot	*Avena barbata*	-
Plantae	Monocot	*Avena fatua*	-
Plantae	Monocot	*Bolboschoenus caldwellii*	-
Plantae	Monocot	*Brachypodium distachyon*	-
Plantae	Monocot	*Briza maxima*	-
Plantae	Monocot	*Briza minor*	-
Plantae	Monocot	*Bromus arenarius*	-
Plantae	Monocot	*Bromus diandrus*	-
Plantae	Monocot	*Bromus hordeaceus*	-
Plantae	Monocot	*Burchardia bairdiae*	-
Plantae	Monocot	*Burchardia congesta*	-
Plantae	Monocot	*Burchardia multiflora*	-
Plantae	Monocot	*Caesia micrantha*	-
Plantae	Monocot	*Caladenia arenicola*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Monocot	*Caladenia flava*	-
Plantae	Monocot	*Caladenia incensum*	-
Plantae	Monocot	*Caladenia latifolia*	-
Plantae	Monocot	*Caladenia longicauda* subsp. *calcigena*	-
Plantae	Monocot	*Caladenia occidentalis*	-
Plantae	Monocot	*Carex thecata*	-
Plantae	Monocot	*Carex thecata*	-
Plantae	Monocot	*Cartonema philydroides*	-
Plantae	Monocot	*Cenchrus echinatus*	-
Plantae	Monocot	*Centrolepis alepyroides*	-
Plantae	Monocot	*Centrolepis aristata*	-
Plantae	Monocot	*Centrolepis drummondiana*	-
Plantae	Monocot	*Centrolepis glabra*	-
Plantae	Monocot	*Chaetospora curvifolia*	-
Plantae	Monocot	*Chamaescilla corymbosa*	-
Plantae	Monocot	*Chloris gayana*	-
Plantae	Monocot	*Chorizandra enodis*	-
Plantae	Monocot	*Conostylis aculeata*	-
Plantae	Monocot	*Conostylis aculeata* subsp. *aculeata*	-
Plantae	Monocot	*Conostylis candicans*	-
Plantae	Monocot	*Conostylis candicans* subsp. *calcicola*	-
Plantae	Monocot	*Conostylis juncea*	-
Plantae	Monocot	*Conostylis pauciflora*	-
Plantae	Monocot	*Conostylis pauciflora* subsp. *pauciflora*	Priority 4
Plantae	Monocot	*Corynotheca micrantha*	-
Plantae	Monocot	*Cyathochaeta avenacea*	-
Plantae	Monocot	*Cycnogeton lineare*	-
Plantae	Monocot	*Cynodon dactylon*	-
Plantae	Monocot	*Cynosurus echinatus*	-
Plantae	Monocot	*Cyperus congestus*	-
Plantae	Monocot	*Cyperus tenuiflorus*	-
Plantae	Monocot	*Cyrtostylis huegelii*	-
Plantae	Monocot	*Dasypogon bromeliifolius*	-
Plantae	Monocot	*Desmocladus asper*	-
Plantae	Monocot	*Desmocladus fasciculatus*	-
Plantae	Monocot	*Desmocladus flexuosus*	-
Plantae	Monocot	*Desmocladus flexuosus*	-
Plantae	Monocot	*Deyeuxia quadriseta*	-
Plantae	Monocot	*Dianella revoluta*	-
Plantae	Monocot	*Dichelachne crinita*	-
Plantae	Monocot	*Dichopogon capillipes*	-
Plantae	Monocot	*Dielsia stenostachya*	-
Plantae	Monocot	*Disa bracteata*	-
Plantae	Monocot	*Diuris drummondii*	Vulnerable
Plantae	Monocot	*Diuris longifolia*	-
Plantae	Monocot	*Drakaea elastica*	Critically Endangered
Plantae	Monocot	*Drakaea livida*	-
Plantae	Monocot	*Ehrharta calycina*	-
Plantae	Monocot	*Eriochilus dilatatus* subsp. *dilatatus*	-
Plantae	Monocot	*Ficinia nodosa*	-
Plantae	Monocot	*Ficinia nodosa*	-
Plantae	Monocot	*Gahnia trifida*	-
Plantae	Monocot	*Gladiolus angustus*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Monocot	*Gladiolus caryophyllaceus*	-
Plantae	Monocot	*Haemodorum laxum*	-
Plantae	Monocot	*Haemodorum simplex*	-
Plantae	Monocot	*Holcus setiger*	-
Plantae	Monocot	*Hyparrhenia hirta*	-
Plantae	Monocot	*Hypolaena exsulca*	-
Plantae	Monocot	*Hypolaena pubescens*	-
Plantae	Monocot	*Hypolaena pubescens*	-
Plantae	Monocot	*Isolepis cernua*	-
Plantae	Monocot	*Isolepis cernua* var. *cernua*	-
Plantae	Monocot	*Isolepis cernua* var. *setiformis*	-
Plantae	Monocot	*Isolepis marginata*	-
Plantae	Monocot	*Isolepis oldfieldiana*	-
Plantae	Monocot	*Isolepis producta*	-
Plantae	Monocot	*Juncus acutus* subsp. *acutus*	-
Plantae	Monocot	*Juncus bufonius*	-
Plantae	Monocot	*Juncus kraussii*	-
Plantae	Monocot	*Juncus kraussii* subsp. *australiensis*	-
Plantae	Monocot	*Juncus pallidus*	-
Plantae	Monocot	*Lachenalia flava*	-
Plantae	Monocot	*Lachenalia reflexa*	-
Plantae	Monocot	*Lachnagrostis filiformis*	-
Plantae	Monocot	*Lagurus ovatus*	-
Plantae	Monocot	*Laxmannia squarrosa*	-
Plantae	Monocot	*Lepidosperma angustatum*	-
Plantae	Monocot	*Lepidosperma calcicola*	-
Plantae	Monocot	*Lepidosperma effusum*	-
Plantae	Monocot	*Lepidosperma gladiatum*	-
Plantae	Monocot	*Lepidosperma longitudinale*	-
Plantae	Monocot	*Lepidosperma pubisquameum*	-
Plantae	Monocot	*Lepidosperma scabrum*	-
Plantae	Monocot	*Lepidosperma squamatum*	-
Plantae	Monocot	*Leporella fimbriata*	-
Plantae	Monocot	*Leptocarpus coangustatus*	-
Plantae	Monocot	*Leptocarpus decipiens*	-
Plantae	Monocot	*Leptocarpus roycei*	-
Plantae	Monocot	*Leptocarpus scariosus*	-
Plantae	Monocot	*Lepyrodia glauca*	-
Plantae	Monocot	*Lepyrodia muirii*	-
Plantae	Monocot	*Lolium perenne*	-
Plantae	Monocot	*Lolium rigidum*	-
Plantae	Monocot	*Lolium* x *hybridum*	-
Plantae	Monocot	*Lomandra caespitosa*	-
Plantae	Monocot	*Lomandra hermaphrodita*	-
Plantae	Monocot	*Lomandra maritima*	-
Plantae	Monocot	*Lomandra micrantha*	-
Plantae	Monocot	*Lomandra micrantha* subsp. *micrantha*	-
Plantae	Monocot	*Lomandra preissii*	-
Plantae	Monocot	*Lomandra sericea*	-
Plantae	Monocot	*Lomandra suaveolens*	-
Plantae	Monocot	*Luzula meridionalis*	-
Plantae	Monocot	*Lyginia barbata*	-
Plantae	Monocot	*Lyginia imberbis*	-
Plantae	Monocot	*Machaerina articulata*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Monocot	*Machaerina juncea*	-
Plantae	Monocot	*Machaerina laxa*	-
Plantae	Monocot	*Machaerina vaginalis*	-
Plantae	Monocot	*Mesomelaena pseudostygia*	-
Plantae	Monocot	*Mesomelaena tetragona*	-
Plantae	Monocot	*Microlaena stipoides*	-
Plantae	Monocot	*Microtis media* subsp. *media*	-
Plantae	Monocot	*Microtis orbicularis*	-
Plantae	Monocot	*Morelotia octandra*	-
Plantae	Monocot	*Parapholis incurva*	-
Plantae	Monocot	*Patersonia occidentalis*	-
Plantae	Monocot	*Patersonia occidentalis* var. *angustifolia*	-
Plantae	Monocot	*Phalaris aquatica*	-
Plantae	Monocot	*Phlebocarya ciliata*	-
Plantae	Monocot	*Poa annua*	-
Plantae	Monocot	*Poa drummondiana*	-
Plantae	Monocot	*Poa poiformis*	-
Plantae	Monocot	*Poa porphyroclados*	-
Plantae	Monocot	*Polypogon monspeliensis*	-
Plantae	Monocot	*Potamogeton ochreatus*	-
Plantae	Monocot	*Prasophyllum brownii*	-
Plantae	Monocot	*Prasophyllum drummondii*	-
Plantae	Monocot	*Prasophyllum fimbria*	-
Plantae	Monocot	*Prasophyllum giganteum*	-
Plantae	Monocot	*Pterostylis barbata*	-
Plantae	Monocot	*Pterostylis brevisepala*	-
Plantae	Monocot	*Pterostylis orbiculata*	-
Plantae	Monocot	*Pterostylis pyramidalis*	-
Plantae	Monocot	*Pterostylis sanguinea*	-
Plantae	Monocot	*Pyrorchis nigricans*	-
Plantae	Monocot	*Romulea rosea*	-
Plantae	Monocot	*Rytidosperma occidentale*	-
Plantae	Monocot	*Rytidosperma occidentale*	-
Plantae	Monocot	*Schoenoplectus tabernaemontani*	-
Plantae	Monocot	*Schoenus asperocarpus*	-
Plantae	Monocot	*Schoenus brevisetis*	-
Plantae	Monocot	*Schoenus capillifolius*	Priority 3
Plantae	Monocot	*Schoenus efoliatus*	-
Plantae	Monocot	*Schoenus efoliatus*	-
Plantae	Monocot	*Schoenus nitens*	-
Plantae	Monocot	*Schoenus odontocarpus*	-
Plantae	Monocot	*Schoenus subfascicularis*	-
Plantae	Monocot	*Secale cereale*	-
Plantae	Monocot	*Sowerbaea laxiflora*	-
Plantae	Monocot	*Spinifex hirsutus*	-
Plantae	Monocot	*Spinifex longifolius*	-
Plantae	Monocot	*Sporobolus africanus*	-
Plantae	Monocot	*Sporobolus virginicus*	-
Plantae	Monocot	*Thelymitra antennifera*	-
Plantae	Monocot	*Thelymitra benthamiana*	-
Plantae	Monocot	*Thelymitra crinita*	-
Plantae	Monocot	*Thelymitra flexuosa*	-
Plantae	Monocot	*Thelymitra fuscolutea*	-
Plantae	Monocot	*Thelymitra paludosa*	-

KINGDOM	CLASS	TAXON	WA CONS. CODE
Plantae	Monocot	*Thysanotus arbuscula*	-
Plantae	Monocot	*Thysanotus arenarius*	-
Plantae	Monocot	*Thysanotus manglesianus*	-
Plantae	Monocot	*Thysanotus multiflorus*	-
Plantae	Monocot	*Thysanotus patersonii*	-
Plantae	Monocot	*Thysanotus sparteus*	-
Plantae	Monocot	*Thysanotus tenellus*	-
Plantae	Monocot	*Trachyandra divaricata*	-
Plantae	Monocot	*Tribonanthes australis*	-
Plantae	Monocot	*Tricoryne elatior*	-
Plantae	Monocot	*Tricoryne tenella*	-
Plantae	Monocot	*Triglochin mucronata*	-
Plantae	Monocot	*Triglochin striata*	-
Plantae	Monocot	*Triglochin trichophora*	-
Plantae	Monocot	*Typha orientalis*	-
Plantae	Monocot	*Vulpia bromoides*	-
Plantae	Monocot	*Vulpia fasciculata*	-
Plantae	Monocot	*Vulpia myuros*	-
Plantae	Monocot	*Vulpia myuros* forma *myuros*	-
Plantae	Monocot	*Wurmbea monantha*	-
Plantae	Monocot	*Xanthorrhoea preissii*	-
Plantae	Monocot	*Zantedeschia aethiopica*	-
Plantae	MOSS	*Sematophyllum homomallum*	-
Plantae	MOSS	*Tortula muralis*	-
Plantae	MOSS	*Zygodon menziesii*	-

APPENDIX B - EPBC PROTECTED MATTERS SEARCH REPORT

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 07-Dec-2023

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	58
Listed Migratory Species:	56

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	202
Commonwealth Heritage Places:	None
Listed Marine Species:	88
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	9
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	48
Key Ecological Features (Marine):	None
Biologically Important Areas:	11
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity
Becher point wetlands	Within Ramsar site
Peel-yalgorup system	Within 10km of Ramsar site

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Empodisma peatlands of southwestern Australia	Endangered	Community may occur within area
Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion	Critically Endangered	Community may occur within area
Sedgelands in Holocene dune swales of the southern Swan Coastal Plain	Endangered	Community known to occur within area
Thrombolite (microbial) community of coastal freshwater lakes of the Swan Coastal Plain (Lake Richmond)	Endangered	Community known to occur within area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta		
Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Zanda baudinii listed as Calyptorhynchus baudinii		
Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Species or species habitat likely to occur within area
Zanda latirostris listed as Calyptorhynchus latirostris		
Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area
FISH		
Thunnus maccoyii		
Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Bettongia penicillata ogilbyi		
Woylie [66844]	Endangered	Species or species habitat known to occur within area
Dasyurus geoffroii		
Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
[Neophoca cinerea](#) Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
[Pseudocheirus occidentalis](#) Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat likely to occur within area
OTHER		
[Westralunio carteri](#) Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area
PLANT		
[Andersonia gracilis](#) Slender Andersonia [14470]	Endangered	Species or species habitat likely to occur within area
[Banksia mimica](#) Summer Honeypot [82765]	Endangered	Species or species habitat may occur within area
[Caladenia huegelii](#) King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat likely to occur within area
[Diuris drummondii](#) Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat known to occur within area
[Diuris micrantha](#) Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
[Diuris purdiei](#) Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat likely to occur within area
[Drakaea elastica](#) Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area
[Drakaea micrantha](#) Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eucalyptus x balanites		
Cadda Road Mallee, Cadda Mallee [87816]	Endangered	Species or species habitat may occur within area
Synaphea sp. Fairbridge Farm (D.Papenfus 696)		
Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area
Synaphea sp. Pinjarra Plain (A.S.George 17182)		
[86878]	Endangered	Species or species habitat may occur within area
Synaphea sp. Serpentine (G.R.Brand 103)		
[86879]	Critically Endangered	Species or species habitat known to occur within area
REPTILE		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
SHARK		
Carcharias taurus (west coast population)		
Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pristis pristis		
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sphyrna lewini		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna grisea		
Sooty Shearwater [82651]		Species or species habitat may occur within area
Diomedea amsterdamensis		
Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena		
Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora		
Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata		
Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharhinus longimanus		
Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		

Scientific Name	Threatened Category	Presence Text
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris subminuta Long-toed Stint [861]		Species or species habitat known to occur within area
Charadrius dubius Little Ringed Plover [896]		Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Species or species habitat known to occur within area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Defence	
Defence - ROCKINGHAM - NAVY CPSO [50135]	WA
Unknown	
Commonwealth Land - [50457]	WA
Commonwealth Land - [50454]	WA
Commonwealth Land - [50529]	WA
Commonwealth Land - [50578]	WA
Commonwealth Land - [50619]	WA
Commonwealth Land - [50521]	WA

Commonwealth Land Name	State
Commonwealth Land - [50618]	WA
Commonwealth Land - [50528]	WA
Commonwealth Land - [50568]	WA
Commonwealth Land - [50451]	WA
Commonwealth Land - [50565]	WA
Commonwealth Land - [50456]	WA
Commonwealth Land - [50564]	WA
Commonwealth Land - [50452]	WA
Commonwealth Land - [50567]	WA
Commonwealth Land - [50450]	WA
Commonwealth Land - [50566]	WA
Commonwealth Land - [50497]	WA
Commonwealth Land - [50629]	WA
Commonwealth Land - [50634]	WA
Commonwealth Land - [50501]	WA
Commonwealth Land - [50503]	WA
Commonwealth Land - [50537]	WA
Commonwealth Land - [50453]	WA
Commonwealth Land - [50458]	WA
Commonwealth Land - [50581]	WA
Commonwealth Land - [50459]	WA
Commonwealth Land - [50621]	WA
Commonwealth Land - [50620]	WA
Commonwealth Land - [50616]	WA
Commonwealth Land - [50504]	WA
Commonwealth Land - [50623]	WA
Commonwealth Land - [50615]	WA

Commonwealth Land Name	State
Commonwealth Land - [50506]	WA
Commonwealth Land - [50622]	WA
Commonwealth Land - [50580]	WA
Commonwealth Land - [50507]	WA
Commonwealth Land - [50624]	WA
Commonwealth Land - [50617]	WA
Commonwealth Land - [50577]	WA
Commonwealth Land - [50627]	WA
Commonwealth Land - [50611]	WA
Commonwealth Land - [50612]	WA
Commonwealth Land - [50613]	WA
Commonwealth Land - [50614]	WA
Commonwealth Land - [50455]	WA
Commonwealth Land - [50610]	WA
Commonwealth Land - [50479]	WA
Commonwealth Land - [50573]	WA
Commonwealth Land - [50478]	WA
Commonwealth Land - [50475]	WA
Commonwealth Land - [50551]	WA
Commonwealth Land - [50476]	WA
Commonwealth Land - [50550]	WA
Commonwealth Land - [50572]	WA
Commonwealth Land - [50556]	WA
Commonwealth Land - [50474]	WA
Commonwealth Land - [50555]	WA
Commonwealth Land - [50446]	WA
Commonwealth Land - [50472]	WA

Commonwealth Land Name	State
Commonwealth Land - [50558]	WA
Commonwealth Land - [50447]	WA
Commonwealth Land - [50557]	WA
Commonwealth Land - [50444]	WA
Commonwealth Land - [50477]	WA
Commonwealth Land - [50486]	WA
Commonwealth Land - [50438]	WA
Commonwealth Land - [50471]	WA
Commonwealth Land - [50488]	WA
Commonwealth Land - [50485]	WA
Commonwealth Land - [50487]	WA
Commonwealth Land - [50662]	WA
Commonwealth Land - [50536]	WA
Commonwealth Land - [50434]	WA
Commonwealth Land - [50437]	WA
Commonwealth Land - [50432]	WA
Commonwealth Land - [50433]	WA
Commonwealth Land - [50473]	WA
Commonwealth Land - [50609]	WA
Commonwealth Land - [50603]	WA
Commonwealth Land - [50602]	WA
Commonwealth Land - [50601]	WA
Commonwealth Land - [50522]	WA
Commonwealth Land - [50600]	WA
Commonwealth Land - [50523]	WA
Commonwealth Land - [50605]	WA
Commonwealth Land - [50520]	WA

Commonwealth Land Name	State
Commonwealth Land - [50604]	WA
Commonwealth Land - [50653]	WA
Commonwealth Land - [50591]	WA
Commonwealth Land - [50526]	WA
Commonwealth Land - [50652]	WA
Commonwealth Land - [50590]	WA
Commonwealth Land - [50527]	WA
Commonwealth Land - [50524]	WA
Commonwealth Land - [50658]	WA
Commonwealth Land - [50525]	WA
Commonwealth Land - [50431]	WA
Commonwealth Land - [50571]	WA
Commonwealth Land - [50570]	WA
Commonwealth Land - [50443]	WA
Commonwealth Land - [50442]	WA
Commonwealth Land - [50449]	WA
Commonwealth Land - [50654]	WA
Commonwealth Land - [50655]	WA
Commonwealth Land - [50656]	WA
Commonwealth Land - [50657]	WA
Commonwealth Land - [50418]	WA
Commonwealth Land - [50505]	WA
Commonwealth Land - [50419]	WA
Commonwealth Land - [50493]	WA
Commonwealth Land - [50317]	WA
Commonwealth Land - [50481]	WA
Commonwealth Land - [50491]	WA

Commonwealth Land Name	State
Commonwealth Land - [50483]	WA
Commonwealth Land - [50480]	WA
Commonwealth Land - [50482]	WA
Commonwealth Land - [50530]	WA
Commonwealth Land - [50531]	WA
Commonwealth Land - [50532]	WA
Commonwealth Land - [50533]	WA
Commonwealth Land - [50569]	WA
Commonwealth Land - [50659]	WA
Commonwealth Land - [50538]	WA
Commonwealth Land - [50539]	WA
Commonwealth Land - [50535]	WA
Commonwealth Land - [50534]	WA
Commonwealth Land - [50466]	WA
Commonwealth Land - [50468]	WA
Commonwealth Land - [50461]	WA
Commonwealth Land - [50462]	WA
Commonwealth Land - [50463]	WA
Commonwealth Land - [50464]	WA
Commonwealth Land - [50639]	WA
Commonwealth Land - [50636]	WA
Commonwealth Land - [50460]	WA
Commonwealth Land - [50589]	WA
Commonwealth Land - [50465]	WA
Commonwealth Land - [50512]	WA
Commonwealth Land - [50513]	WA
Commonwealth Land - [50515]	WA

Commonwealth Land Name	State
Commonwealth Land - [50510]	WA
Commonwealth Land - [50514]	WA
Commonwealth Land - [50519]	WA
Commonwealth Land - [50518]	WA
Commonwealth Land - [50638]	WA
Commonwealth Land - [50469]	WA
Commonwealth Land - [50631]	WA
Commonwealth Land - [50633]	WA
Commonwealth Land - [50470]	WA
Commonwealth Land - [51436]	WA
Commonwealth Land - [50637]	WA
Commonwealth Land - [50632]	WA
Commonwealth Land - [50635]	WA
Commonwealth Land - [50416]	WA
Commonwealth Land - [50500]	WA
Commonwealth Land - [50415]	WA
Commonwealth Land - [50646]	WA
Commonwealth Land - [50642]	WA
Commonwealth Land - [50643]	WA
Commonwealth Land - [50644]	WA
Commonwealth Land - [50645]	WA
Commonwealth Land - [50499]	WA
Commonwealth Land - [50498]	WA
Commonwealth Land - [50420]	WA
Commonwealth Land - [50640]	WA
Commonwealth Land - [50597]	WA
Commonwealth Land - [50428]	WA

Commonwealth Land Name	State
Commonwealth Land - [50595]	WA
Commonwealth Land - [50596]	WA
Commonwealth Land - [50484]	WA
Commonwealth Land - [50661]	WA
Commonwealth Land - [50423]	WA
Commonwealth Land - [50511]	WA
Commonwealth Land - [50421]	WA
Commonwealth Land - [50422]	WA
Commonwealth Land - [50541]	WA
Commonwealth Land - [50542]	WA
Commonwealth Land - [50547]	WA
Commonwealth Land - [50540]	WA
Commonwealth Land - [51117]	WA
Commonwealth Land - [50579]	WA
Commonwealth Land - [50552]	WA
Commonwealth Land - [50554]	WA
Commonwealth Land - [50417]	WA
Commonwealth Land - [50543]	WA
Commonwealth Land - [50496]	WA
Commonwealth Land - [50495]	WA
Commonwealth Land - [50492]	WA
Commonwealth Land - [50628]	WA
Commonwealth Land - [50608]	WA
Commonwealth Land - [50467]	WA
Commonwealth Land - [50445]	WA
Commonwealth Land - [50599]	WA
Commonwealth Land - [50545]	WA

Commonwealth Land Name	State
Commonwealth Land - [50544]	WA
Commonwealth Land - [50546]	WA
Commonwealth Land - [50425]	WA
Commonwealth Land - [50490]	WA
Commonwealth Land - [50549]	WA
Commonwealth Land - [50548]	WA

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat may occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area
Calidris subminuta Long-toed Stint [861]		Species or species habitat known to occur within area overfly marine area
Charadrius dubius Little Ringed Plover [896]		Species or species habitat known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding known to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Philomachus pugnax Ruff (Reeve) [850]		Species or species habitat known to occur within area overfly marine area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus assimilis Little Shearwater [59363]		Breeding known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area overfly marine area
Fish		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Neophoca cinerea		
Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Hydrophis kingii as Disteira kingii		
Spectacled Sea Snake [93511]		Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata		
Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Penguin Island	Conservation Park	WA
Port Kennedy Scientific Park	Nature Reserve	WA
Shoalwater Bay Islands	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Shoalwater Islands	Marine Park	WA
Unnamed WA43903	Nature Reserve	WA
Unnamed WA44004	Nature Reserve	WA
Unnamed WA44986	Nature Reserve	WA
Unnamed WA51784	Nature Reserve	WA
Unnamed WA51945	5(1)(h) Reserve	WA

Nationally Important Wetlands

[Resource Information]

Wetland Name	State
Becher Point Wetlands	WA

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Lot 1401 Fifty Road, Baldivis	2020/8620		Approval
Controlled action			
'Lakelands East' residential development, Mandurah, WA	2013/7048	Controlled Action	Post-Approval
Baldivis Residential development on lots 98, 323,529 and 530	2010/5733	Controlled Action	Post-Approval
Clearing of 12.8ha of native vegetation on Lots 19 and 20, Sixty Eight Road, Baldivis, WA	2016/7661	Controlled Action	Post-Approval
Clearing of 18.80 ha of vegatation ahead of quarrying operations	2010/5650	Controlled Action	Completed
Construction of New Perth Bunbury Highway project	2005/2193	Controlled Action	Post-Approval
Extend a section of Mundijong Road	2011/5971	Controlled Action	Post-Approval
Natural Gas Pipeline Expansion	2006/2813	Controlled Action	Post-Approval
Residential Development Lot 518 Stock Road, Stakehill, WA	2019/8483	Controlled Action	Assessment Approach
Residential development of Lot 105 Stock Road, Lakelands, WA	2017/8041	Controlled Action	Post-Approval
Residential development of Lots 635, 739 and 740 on Deposited Plan 202751, Baldivis Road, Baldivis,	2018/8361	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Sand extraction, Lot 810, Yangedi Rd, Hopeland, WA	2015/7429	Controlled Action	Post-Approval
Sand Mining	2010/5522	Controlled Action	Completed
Spatial Property Group Ltd - Residential Development	2021/9006	Controlled Action	Assessment Approach
Not controlled action			
'Looping 10' gas transmission pipeline from Kwinana to Hopelands	2005/2212	Not Controlled Action	Completed
Baldivis District Sporting Complex, Baldivis, WA	2018/8323	Not Controlled Action	Completed
Clear native vegetation to undertake a residential development, Baldivis, Wa	2013/6779	Not Controlled Action	Completed
Construction of Secret Harbour High School	2004/1489	Not Controlled Action	Completed
Continuation of quarrying sand and limestone, Lot 800 Kerosene Lane, Baldivis, WA	2013/6832	Not Controlled Action	Completed
Eradication of the European House Borer, Perth metropolitan area, WA	2009/5027	Not Controlled Action	Completed
Expansion of Lifestyle Village development, Lots 1, 3, 700 and 703 Mandurah Rd, Baldivis, WA	2016/7850	Not Controlled Action	Completed
Gas-fired Power Station	2005/2213	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Karnup Sand Mining Project, Stakehill Road, Baldivis, WA	2015/7533	Not Controlled Action	Completed
Kennedy Bay urban development, Port Kennedy, WA	2014/7122	Not Controlled Action	Completed
Kennedy Park Estate Residential Development	2003/1044	Not Controlled Action	Completed
Kwinana Gas-Fired Power Station	2005/2101	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Lot 101 Mandurah Road, Madora Bay, WA	2012/6466	Not Controlled Action	Completed
Lot 384 Karnup Road, Hopeland Residential Development	2020/8682	Not Controlled Action	Completed
Lots 569 & 1263, Baldivis Road and Lot 21, Sixty Eight Road, Baldivis, WA	2012/6526	Not Controlled Action	Completed
Montessori School Lot 11 and 700 Karnup Rd, Karnup, WA	2017/8034	Not Controlled Action	Completed
Residential development, part of Lot 601, Mandurah Road, West Baldivis, WA	2013/6871	Not Controlled Action	Completed
Residential Development, Serpentine and Baldivis Roads	2020/8700	Not Controlled Action	Completed
Residential development of Lot 9501 Muzzlewood Street, Baldivis, WA	2016/7775	Not Controlled Action	Completed
Residential Subdivision on Baldivis Road, Sabrina Road & Zig Zag Road	2012/6613	Not Controlled Action	Completed
Residential Subdivision on Lots 921 & 922 Baldivis Road and Lot 3 Key Close, Baldivis, WA	2012/6601	Not Controlled Action	Completed
Subdivision development on Fifty Rd & Eighty Rd Baldivis	2011/6195	Not Controlled Action	Completed
Urban development, Lot 805 Mandurah Road, Karnup, WA	2015/7481	Not Controlled Action	Completed
Not controlled action (particular manner)			
Construction of Mandurah Entrance Road	2009/4692	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Multipurpose development stage 1 within 340ha	2004/1913	Not Controlled Action (Particular Manner)	Post-Approval
South West Metropolitan Railway Project	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner) Referral decision			
Kennedy Bay Urban Development,PortKennedy,Rockingh	2013/7022	Referral Decision	Completed
Lakelands Station	2020/8718	Referral Decision	Completed
Lot 877 Stakehill Road, Karnup	2021/8887	Referral Decision	Completed
Lots 569 & 1263, Baldivis Road and Lot 21, Sixty Eight Road, Baldivis, WA	2012/6491	Referral Decision	Completed
Mundijong Road Ext Realignment Project Baldivis WA	2011/5864	Referral Decision	Completed

Biologically Important Areas		
Scientific Name	Behaviour	Presence
Seabirds		
Ardenna carneipes Flesh-footed Shearwater [82404]	Aggregation	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging (in high numbers)	Known to occur
Eudyptula minor Little Penguin [1085]	Foraging (provisioning young)	Known to occur
Hydroprogne caspia Caspian Tern [808]	Foraging (provisioning young)	Known to occur
Larus pacificus Pacific Gull [811]	Foraging (in high numbers)	Former Range
Onychoprion anaethetus Bridled Tern [82845]	Foraging (in high numbers)	Known to occur
Puffinus assimilis tunneyi Little Shearwater [59363]	Foraging (in high numbers)	Known to occur

Scientific Name	Behaviour	Presence
Sterna dougallii Roseate Tern [817]	Foraging	Known to occur
Sternula nereis Fairy Tern [82949]	Foraging (in high numbers)	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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APPENDIX C – FLORA SPECIES BY VEGETATION UNIT AND RELEVÉ

*denotes introduced (weed) species

Family	Species	Vegetation Unit		
		ArMs		TdFc
		Opportunistic	RT03r	RT06r
Aizoaceae	**Carpobrotus edulis*	+		
Asparagaceae	*Acanthocarpus preissii*	+		
Asphodelaceae	**Asphodelus fistulosus*	+		+
Asteraceae	**Arctotheca calendula*			+
Asteraceae	*Olearia axillaris*	+		+
Asteraceae	**Osteospermum ecklonis*	+		
Asteraceae	**Senecio condylus*	+		+
Asteraceae	**Sonchus asper*	+		
Boraginaceae	**Echium plantagineum* (Declared Pest - s(22))	+		+
Brassicaceae	*Brassica sp.*	+		
Caprifoliaceae	**Sixalix atropurpurea*	+		
Cyperaceae	**Cyperus congestus*			+
Cyperaceae	*Ficinia nodosa*			+
Euphorbiaceae	**Euphorbia terracina*	+	+	+
Fabaceae	*Acacia rostellifera*		+	
Fabaceae	*Jacksonia furcellata*	+		
Fabaceae	*Kennedia prostrata*	+		+
Fabaceae	*Medicago* sp.	+		
Geraniaceae	**Pelargonium capitatum*	+	+	+
Haemodoraceae	*Conostylis aculeata*		+	
Haemodoraceae	*Conostylis aculeata* subsp. *Preissii*	+		
Haemodoraceae	*Phlebocarya ciliata*	+		
Lamiaceae	*Hemiandra ? pungens*	+		
Myrtaceae	**Chamelaucium uncinatum*	+		
Myrtaceae	*Melaleuca systena*	+		
Oleaceae	**Olea europaea*	+		

Family	Species	Vegetation Unit		
		ArMs		TdFc
		Opportunistic	RT03r	RT06r
Onagraceae	**Oenothera drummondii*	+		
Poaceae	*Austrostipa flavescens*	+		
Poaceae	**Avena barbata*	+		
Poaceae	**Bromus diandrus*	+	+	
Poaceae	**Cynodon dactylon*	+		+
Poaceae	**Ehrharta calycina*	+	+	+
Poaceae	**Eragrostis curvula*	+	+	
Poaceae	**Lagurus ovatus*	+	+	+
Poaceae	**Lolium rigidum*	+		+
Polygonaceae	*Muehlenbeckia adpressa*	+		+
Primulaceae	**Lysimachia arvensis*	+		
Rubiaceae	*Opercularia vaginata*	+		
Typhaceae	*Typha domingensis*			+

APPENDIX D – QUADRAT AND RELEVÉ DATA

Site RT03r

Date	12/10/2023
Botanist	Flávia dos Santos Pereira and Megan Gray
Quadrat Size	Relevé
NW Corner Coordinates	384232 mE 6416607 mN
Vegetation Unit	ArMs – *Acacia rostellifera* and *Melaleuca systena* low shrubland over **Eragrostis curvula*, **Bromus diandrus,* and **Euphorbia terracina* grassland
Slope	Flat
Landform	Plain
Soil Colour	Pale yellow
Soil Type	Sand
Litter	4%
Bare Ground	30%
Fire Age	>10 Years
Vegetation Condition	Degraded
Disturbances/Impacts	Snails, rabbits, weeds and historic clearing

Species	Height (m)	% Cover
Acacia rostellifera	1.2	3
**Eragrostis curvula*	0.8	5
**Euphorbia terracina*	0.5	4
**Bromus diandrus*	0.3	4
Conostylis aculeata		+
**Ehrharta calycina*		+
**Lagurus ovatus*		+
**Pelargonium capitatum*		+

Site RT06r

Date	12/10/2023
Botanist	Flávia dos Santos Pereira and Megan Gray
Quadrat Size	Relevé
NW Corner Coordinates	384059 mE 6416725 mN
Vegetation Unit	TdFc - *Typha domingensis* tall open rushland over *Ficinia nodosa* and **Cyperus congestus* sparse sedgeland
Slope	Moderate
Landform	Swale
Soil Colour	Pale yellow
Soil Type	Sand
Litter	1%
Bare Ground	50%
Fire Age	>10 Years
Vegetation Condition	Good
Disturbances/Impacts	Weeds, historic disturbance

Species	Height (m)	% Cover
Typha domingensis	1.5	8
Olearia axillaris	1.2	3
Ficinia nodosa	0.8	4
**Cyperus congestus*	0.6	2
**Arctotheca calendula*		+
**Asphodelus fistulosus*		+
**Cynodon dactylon*		+
**Ehrharta calycina*		+
**Euphorbia terracina*		+
Kennedia prostrata		+
**Lagurus ovatus*		+
**Lolium rigidum*		+
Muehlenbeckia adpressa		+
**Pelargonium capitatum*		+
**Senecio condylus*		+

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