Eden Street
Riverside Tasmania 7250
Telephone: (03) 6323 9300
Facsimile: (03) 6323 9349

West Tamar COUNCIL

## PLANNING APPLICATION FORM

Section 57 & 58

| OFFICE USE ONLY | | |
|---|---|---|
| | Application Number | PA2025101 |
| | Assess No: | |
| | PID No: | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Applicant Name:** | Tamar Canoe Club Inc | | | | | |
| **Applicant Contact Name** | | | | | | |
| **Postal Address:** | | | | | | |
| **Contact Phone:** | **Home** | | **Work** | | **Mobile** | |
| **Email Address:** | | | | | | |

# Planning Application Lodgement Checklist

**The following documents have been submitted to support the consideration of this application:**

1. A current copy of the property title text, folio plan and schedule of easements ☐
2. A completed application form including a detailed description of the proposal ☐
3. A complete plan set: ☐
   - a) **Floor plans** ☐
   - b) **Elevations** (from all orientations/sides and showing natural ground level and finished surface level) ☐
   - c) **Site Plan** showing: ☐

- Orientation
- All title boundaries
- Location of buildings and structure (both existing and proposed)
- Setbacks from all boundaries
- Native vegetation to be removed
- Onsite services, connections and drainage details (including sewer, water and stormwater)
- Cut and/or Fill
- Car parking and access details (including construction material of all trafficable areas)
- Fence details
- Contours

4. Other:

*If submitting plans in over the counter please ensure they are A3.*
*All plans must be to scale.*

# WEST TAMAR COUNCIL

Application Number: «Application Number»

## APPLICANT DETAILS

| | |
|---|---|
| **Applicant Name:** | Tamar Canoe Club Inc |

***Note:*** *Full name(s) of person(s) or company making the application and postal address for correspondence.*

## LAND DETAILS

| | |
|---|---|
| **Owner/Authority Name:** *(as per certificate of title)* | **Meander Valley Council** |
| **Location / Address:** | Blackstone Park Drive, Blackstone Park |
| **Title Reference:** | Volume/Folio: 183402/2, PID 9921401 |
| **Zone(s):** | **Environmental Management Zone** |

| | |
|---|---|
| **Existing Development/Use:** | Blackstone Park, Lake Trevallyn |
| **Existing Developed Area:** | NA |

| | |
|---|---|
| **Are any of the components in this Application seeking retrospective approval?**<br>**E.g. Use and/or development that has commenced without a Planning Permit.** | **YES** ☐<br>**NO** ☐– X |
| **(If yes please specify the relevant components):** | |

## DEVELOPMENT APPLICATION DETAILS

| | | | | |
|---|---|---|---|---|
| **Proposed Use:** | Residential: ☐ | Visitor Accommodation: ☐ | Commercial: ☐ | Other: ☐X |
| | Description of Use*:<br>Sports and Recreation<br>Creation of a primary canoe polo field and an adjacent 'multi use' space that can be used for canoe polo or canoe slalom<br>*Lake Trevallyn on water component only | | | |

| | | | | |
|---|---|---|---|---|
| **Development Type:** | Building work: ☐ | Demolition: ☐ | Subdivision: ☐ | Other: ☐X |
| | Description of development*:<br>Primary field: Installation of canoe polo goals and boundary lines. (removal, non-permanent)<br>Multi-use space: Occasional installation of floating canoe polo goals and boundary lines, or suspended slalom gates.<br>*Lake Trevallyn on water component only | | | |

| | | |
|---|---|---|
| **New or Additional Area:** | 2,000m$^2$ | |
| **Estimated construction cost of the proposed development:** | $200,000 | |
| **Building Materials:** | Wall Type: NA | Colour: |
| | Roof Type: NA | Colour: |

## VISITOR ACCOMMODATION ☐N/A

| | | | |
|---|---|---|---|
| **Gross Floor Area to be used per lot:** | | **Number of Bedrooms to be used:** | |
| **Number of Carparking Spaces:** | | **Maximum Number of Visitors at a time:** | |

## SUBDIVISION ☐N/A

Subdivision creating additional lots ☐

Boundary adjustment with no additional lots created ☐

| | | | |
|---|---|---|---|
| **Number of Lots (existing) :** | | **Number of Lots (proposed) :** | |
| **Description:** | | | |
| **If applying for a subdivision which creates a new road(s), please supply three proposed names for the road(s), in order of preference:** | | | |
| **1.** | | | |
| **2.** | | | |
| **3.** | | | |

## COMMERCIAL, INDUSTRIAL OR OTHER NON-RESIDENTIAL DEVELOPMENT/USE ☐N/A

| | | | | |
|---|---|---|---|---|
| **Hours of Operation:** | Monday / Friday: | | To | |
| | Saturday: | | To | |
| | Sunday: | | To | |

| | |
|---|---|
| **Existing Car Parking:** | 50+ spaces available in Blackstone Park |
| **Proposed Car Parking:** | No additional parking proposed |

| | |
|---|---|
| **Number of Employees:** ***(Existing)*** | NA |
| **Number of Employees:** ***(Proposed)*** | NA |

| | |
|---|---|
| **Type of Machinery installed:** | None |
| **Details of trade waste and method of disposal:** | None |

# WEST TAMAR COUNCIL

Application Number: «Application_Number»

## APPLICANT DECLARATION

**Owner:** *As the owner of the land, I declare that the information contained in this application is a true and accurate representation of the proposal and I consent to this application being submitted and for Council Officers to conduct inspections as required for the proposal,*

| Jonathan Harmey | | 14.4.25 |
|---|---|---|
| *Name (print)* | *Signed* | *Date* |

**Applicant:** *(if not the owner)* *As the applicant, I declare that I have notified the owner of my intention to make this application* and that *the information contained in this application is a true and accurate representation of the proposal,*

| John McCausland | | 15/4/2025 |
|---|---|---|
| *Name (print)* | *Signed* | *Date* |

*Please Note: If the application involves Crown Land you will need to provide a letter of consent and this form signed by the Minister, or a delegated officer of the Crown with a copy of the delegation.*

| **Crown Consent** *(if required)* | | | |
|---|---|---|---|
| | *Name (print)* | *Signed* | *Date* |

| **Chief Executive Officer** *(if required)* | | | |
|---|---|---|---|
| | *Name (print)* | *Signed* | *Date* |

*If the subject site is accessed via a right of way, the owner of the ROW must also be notified of the application.*

**Right of Way Owner:**

*As the applicant, I declare that I have notified the owner of the land encumbered by the Right Of Way, of my intent to lodge this application that will affect their land.*

| | | |
|---|---|---|
| *Name (print)* | *Signed* | *Date* |

OWNER
MEANDER VALLEY COUNCIL
MATTHEW ANTHONY SEEN

FOLIO REFERENCE
29894–12, 141734–8

GRANTEE
PART OF 500 ACRES GTD. TO PATRICK DALRYMPLE; PART OF 40 ACRES LOCATED TO CHARLES EDWARDS

## PLAN OF SURVEY

COHEN & ASSOCIATES PTY LTD, LAUNCESTON

BY SURVEYOR: A.R.FAIRFIELD

LOCATION LAND DISTRICT OF CORNWALL
PARISH OF LAUNCESTON

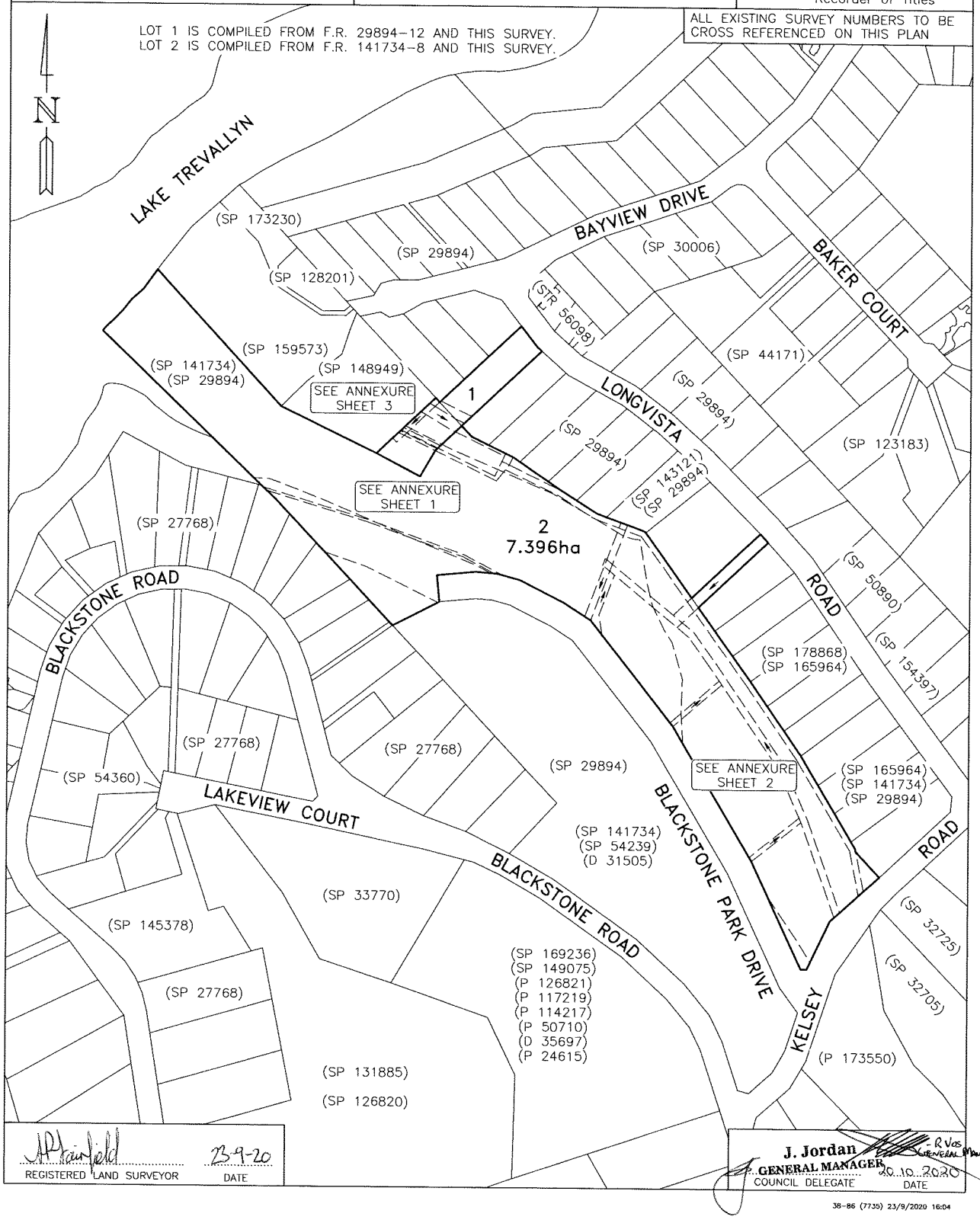
SCALE 1 : 3000 LENGTHS IN METRES

REGISTERED NUMBER
SP183402

APPROVED
EFFECTIVE FROM 27 OCT 2022
Recorder of Titles

LOT 1 IS COMPILED FROM F.R. 29894–12 AND THIS SURVEY.
LOT 2 IS COMPILED FROM F.R. 141734–8 AND THIS SURVEY.

ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN




REGISTERED LAND SURVEYOR — DATE 23-9-20

J. Jordan
GENERAL MANAGER
COUNCIL DELEGATE — DATE 20.10.2020

38–86 (7735) 23/9/2020 16:04

# PLAN OF SURVEY
## ANNEXURE SHEET
SHEET 1 OF 3 SHEETS

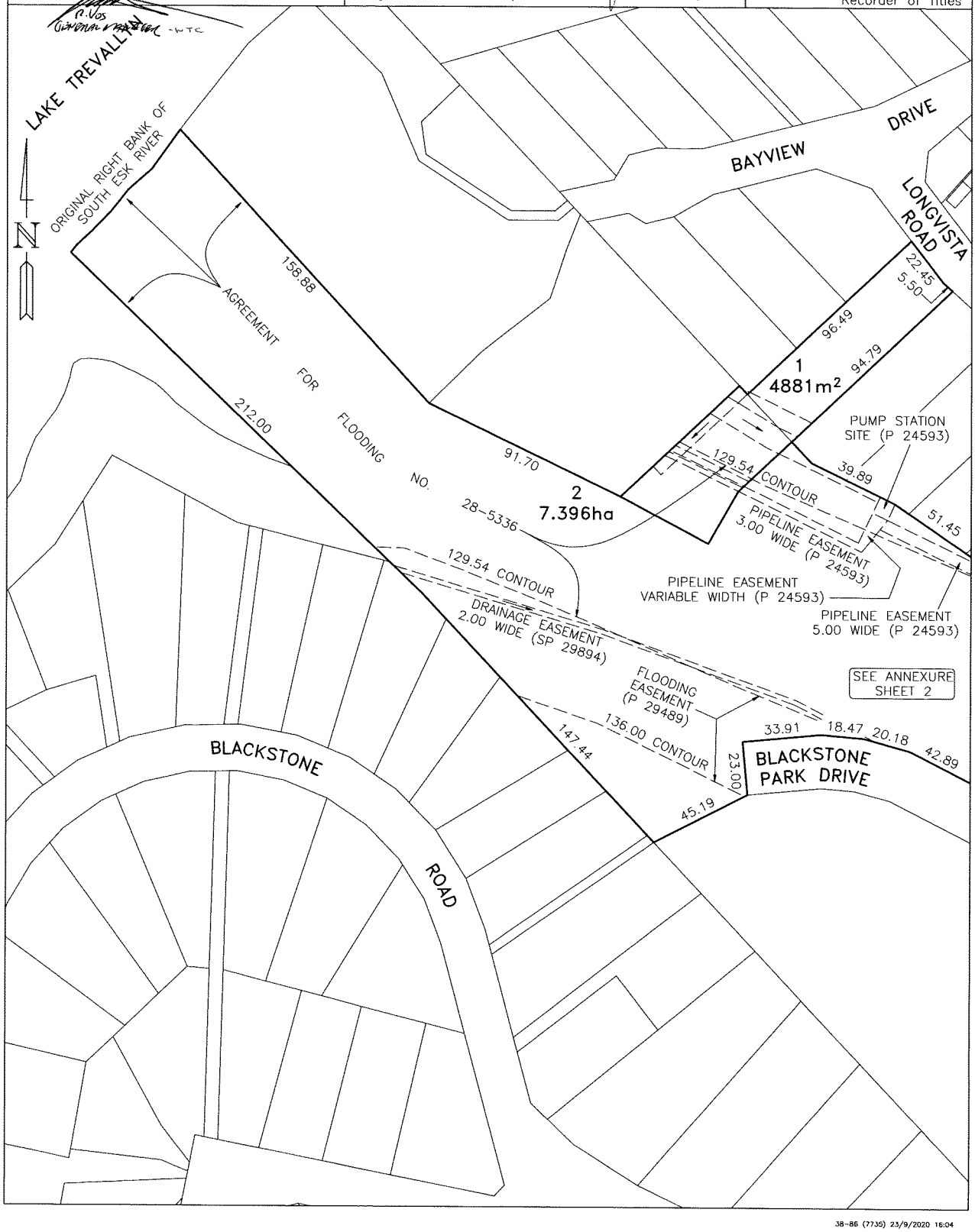
OWNER MEANDER VALLEY COUNCIL, M.A. SEEN
FOLIO REFERENCE 29894/12 141734/8
SCALE 1 : 1500 LENGTHS IN METRES

Registered Number
SP 183402

SIGNED FOR IDENTIFICATION PURPOSES
J. Jordan
GENERAL MANAGER
Council Delegate 20.10.2020 Date

THIS ANNEXURE SHEET FORMS PART OF THE ATTACHED INDEX PLAN.
Registered Land Surveyor J.M. Fairfield date 23-9-20

APPROVED
EFFECTIVE FROM 27 OCT 2022
Recorder of Titles




38-86 (7735) 23/9/2020 16:04

# PLAN OF SURVEY
## ANNEXURE SHEET
SHEET 2 OF 3 SHEETS

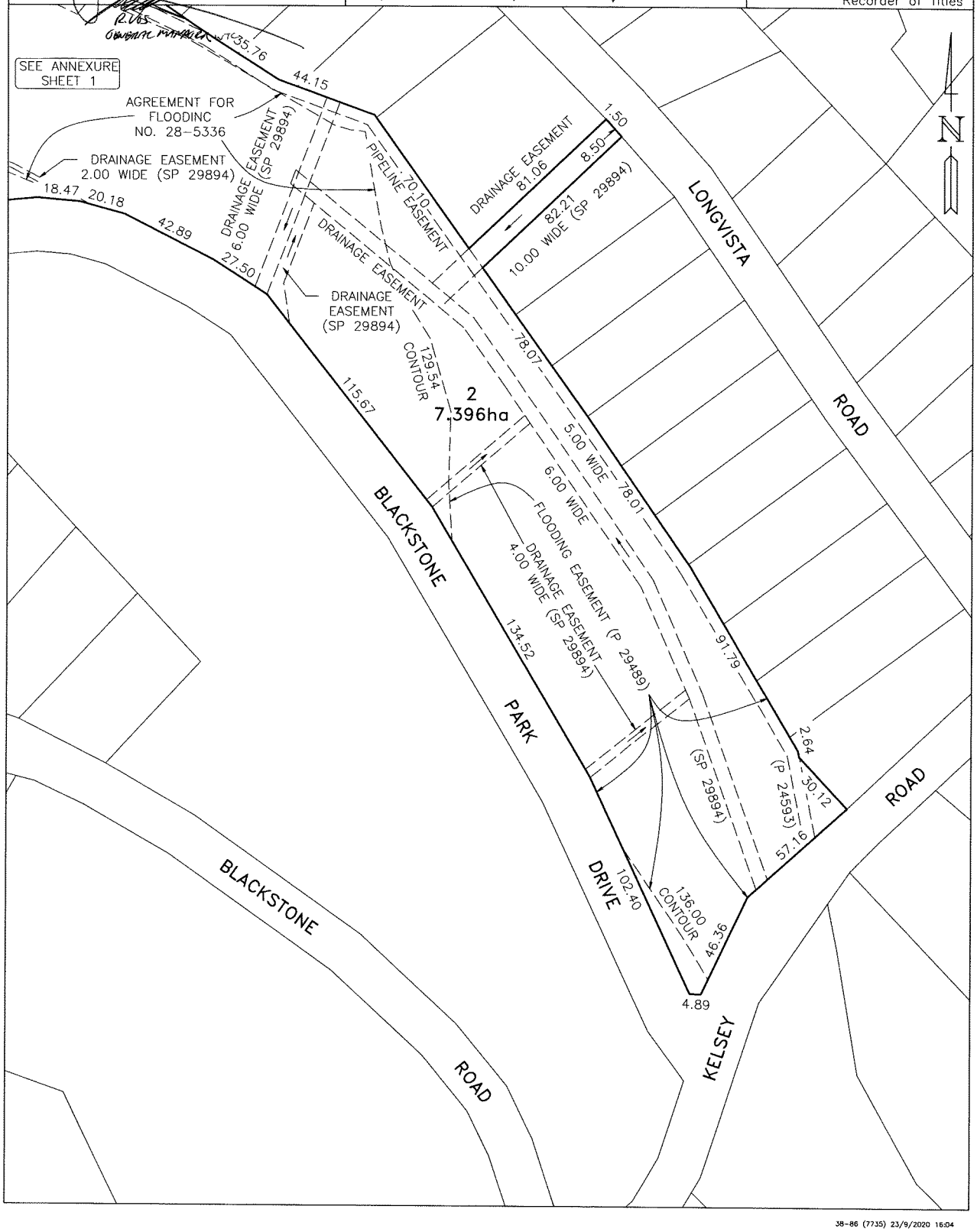
OWNER MEANDER VALLEY COUNCIL, M.A. SEEN
FOLIO REFERENCE 29894/12 141734/8
SCALE 1 : 1500 LENGTHS IN METRES

Registered Number
SP 183402

SIGNED FOR IDENTIFICATION PURPOSES
J. Jordan 20 10 2020
Council Delegate GENERAL MANAGER Date

THIS ANNEXURE SHEET FORMS PART OF THE ATTACHED INDEX PLAN.
Registered Land Surveyor ... date 23-9-20

APPROVED
EFFECTIVE FROM 27 OCT 2022
Recorder of Titles




38-86 (7735) 23/9/2020 16:04

## PLAN OF SURVEY
### ANNEXURE SHEET
SHEET 3 OF 3 SHEETS

OWNER MEANDER VALLEY COUNCIL, M.A. SEEN

FOLIO REFERENCE 29894/12 141734/8

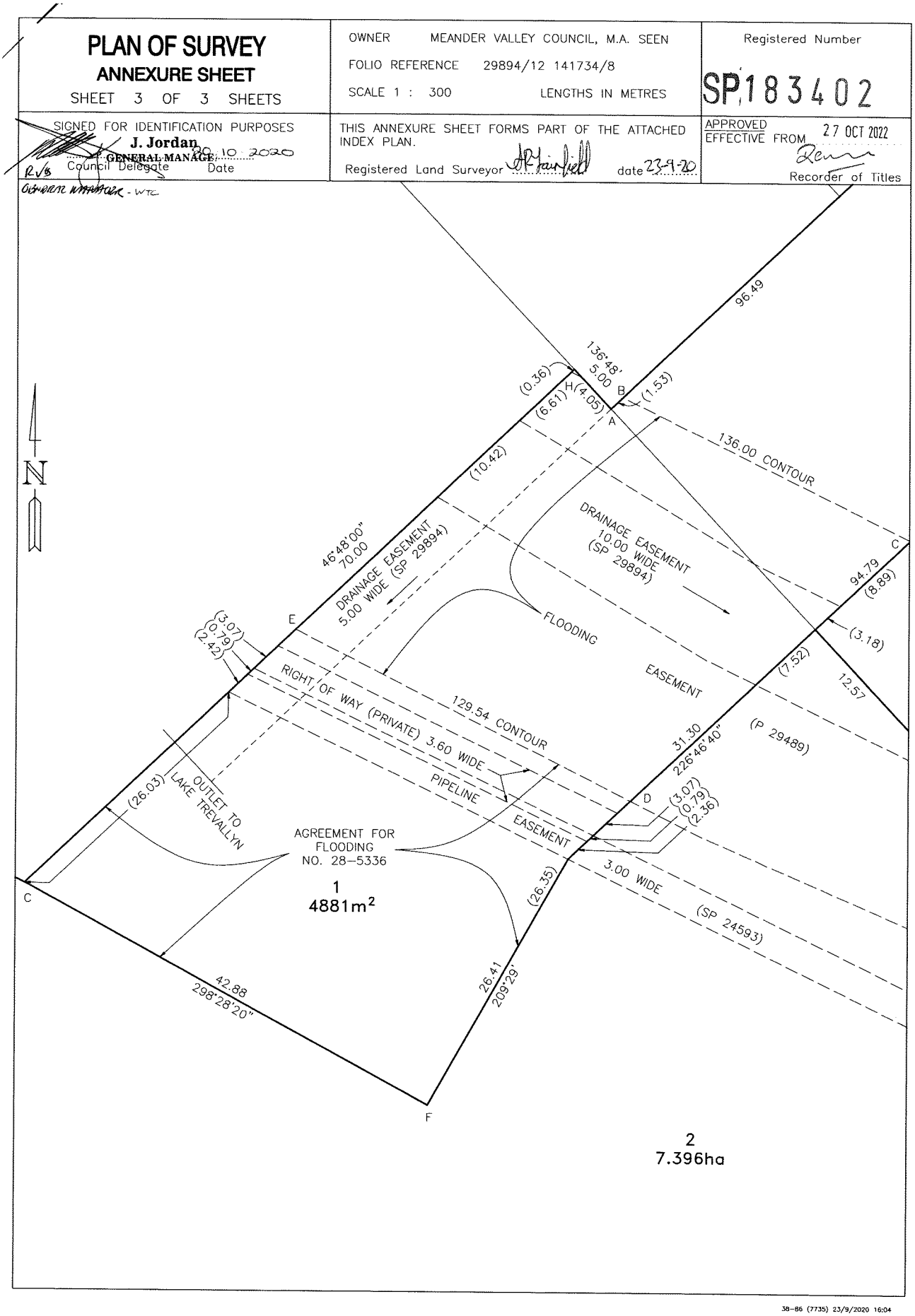
SCALE 1 : 300 LENGTHS IN METRES

Registered Number
SP 183402

SIGNED FOR IDENTIFICATION PURPOSES
J. Jordan
GENERAL MANAGER
20.10.2020
Council Delegate Date

THIS ANNEXURE SHEET FORMS PART OF THE ATTACHED INDEX PLAN.
Registered Land Surveyor ... date 23-9-20

APPROVED
EFFECTIVE FROM 27 OCT 2022
Recorder of Titles



# Blackstone Paddlesports Park

## Canoe Polo, Slalom and Water Access Improvements

## Planning Report

# 1 Table of Contents

# 2 Introduction

## 2.1 Purpose

This report provides detail of the development infrastructure and use, as well as addressing the performance criteria as required for the planning application.

## 2.2 Background

Tamar Canoe Club is proposing a new facility to be constructed in Blackstone Park, in Blackstone Heights, Launceston. The Blackstone Paddlesports Park will use Lake Trevallyn at the eastern end of the park inlet, a space that is currently not used or accessed due to the awkward narrow and steep banks, overgrown with willows and other vegetation. The site is heavily modified with signs of historic bulk earthworks and vegetation clearing, matching its suburban surrounds.

The Blackstone Paddlesports Park proposes to remove some trees and weeds (willows, woolly tea tree, wattles and hawthorn) and create lakeside park space and water access that will be available for the whole community. It includes canoe polo playing fields (23m x 35m) and a canoe slalom training space as well as goals, boundary lines and slalom gates. The works will construct new access paths, raised and grassed banks (incorporating umpiring space), water access ramps, as well as canoe and gear laydown space. The development will increase the utility of the park and generally facilitate safe access to Lake Trevallyn.

In addition to canoe polo and canoe slalom the development will facilitate kayaking, swimming, and stand up paddleboarding. By increasing accessibility and creating a safer, well-defined space, the project is expected to encourage greater community participation in non-motorised water sports and outdoor activities.

The outdoor setting means use of the development will be greater during the warmer months, and its distance from artificial lighting restrict its use to daylight hours.

# 3 Description of Infrastructure

## 3.1 Raised and grassed banks

- **Raised Banks:** Two bank sections each around 40m long will be constructed on the southern side of the inlet, with dolerite rock revetment up to a level of 126.3m AHD. The width of the grassed banks varies from around 5m to 12m, providing space for spectators, competitors, equipment laydown and general recreational use at Blackstone Park.
- **Water Access:** Evenly graded boat launch areas will be provided between, and either side of, the raised banks. These areas will accommodate launching kayaks, canoes, and stand-up paddleboards, as well as general water access for swimming and paddling.

## 3.2 Pedestrian and Vehicle Access Paths

- **Pedestrian Access**: A main walking path 1.5m wide will connect the main car park to the new bank space. The path will be at a maximum gradient of 1 in 14 to accommodate accessibility needs. Other minor paths will allow pedestrians easier access to different parts of the development.
- **Northern Bank Umpiring:** On the northern bank a path will be built just above the waterline for umpiring of the canoe polo field and access to the posts for hanging slalom gates.

- **Vehicle Access**: A designated vehicle access track from the eastern gate (adjacent the TasWater pump station) will be constructed for mowing and maintenance access.

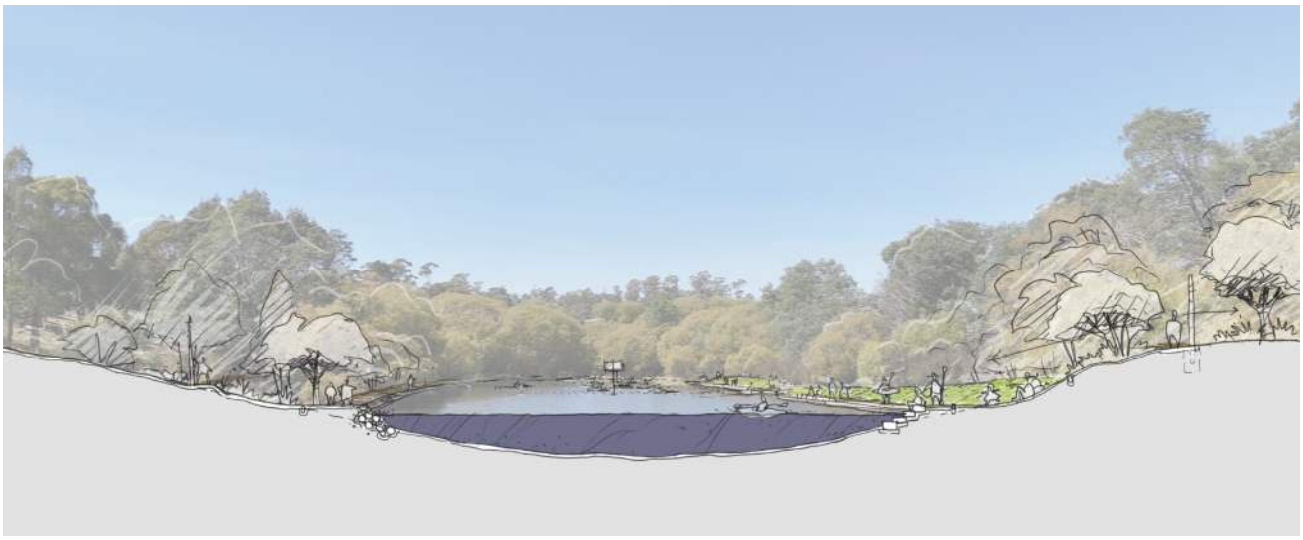
## 3.3 Primary Canoe Polo Field

- **Goals**: Goals will be installed at either end of the primary canoe polo field. These are placed on the lake bottom and are not permanent installations, they can be removed for maintenance if required.
- **Field Boundary Lines**: Floating markers or lane ropes will define the boundaries of the playing area, these will typically be installed for the summer season and removed over winter.

## 3.4 Multi-use Space (Canoe Slalom & Canoe Polo)

- **Canoe Slalom Practice:** Six 2.35 metre high posts will be installed on either bank adjacent the multi-use space. These will enable canoe slalom gates to be strung up over the waterway to allow for slalom training.
- **Canoe Polo Secondary Field:** For larger competitions the multi-use space will host a second canoe polo field. Lane ropes and floating goals will be brought in and installed for the period of the competition, typically two days over a weekend.

# 4 Description of Use



**Artist Impression: Blackstone Paddlesports Park**

## 4.1 Canoe Polo Use

The primary use of the site by Tamar Canoe Club will be for canoe polo, with activities expected for around half to three-quarters of the weeks between October and May. Regular training sessions and games are anticipated a couple of times per week, likely for an hour or two on a weeknight. Typically after work during daylight saving months and during the day on a weekend. Additionally, individuals and small groups may use the site for occasional informal practice outside of scheduled sessions.

Competitions and events are anticipated a few times per year, with some spanning a full day or weekend. For larger competitions, expected once per year, the second canoe polo field will be set up in the 'multi-use space' adjacent to the primary field, using Tamar Canoe Club's temporary line ropes and floating goals.

## 4.2 Canoe Slalom Use

Canoe slalom training will occur in the 'multi-use space' adjacent the primary canoe polo field. A slalom course will be set up by stringing temporary cross river lines from the posts and suspending slalom gates from the lines, a process taking approximately 15 minutes. Training sessions would typically last a couple of hours after which gates and ropes will be removed.

Training sessions could take place at any time of year, most likely as part of organised training programs. The Tasmanian Canoe Club and Derwent Canoe Club typically run weekly slalom training sessions in 2–3 month blocks, a similar arrangement is anticipated for Blackstone Paddlesports Park.

## 4.3 Swimming, Kayaking, Stand-Up Paddleboarding, and Active Recreation

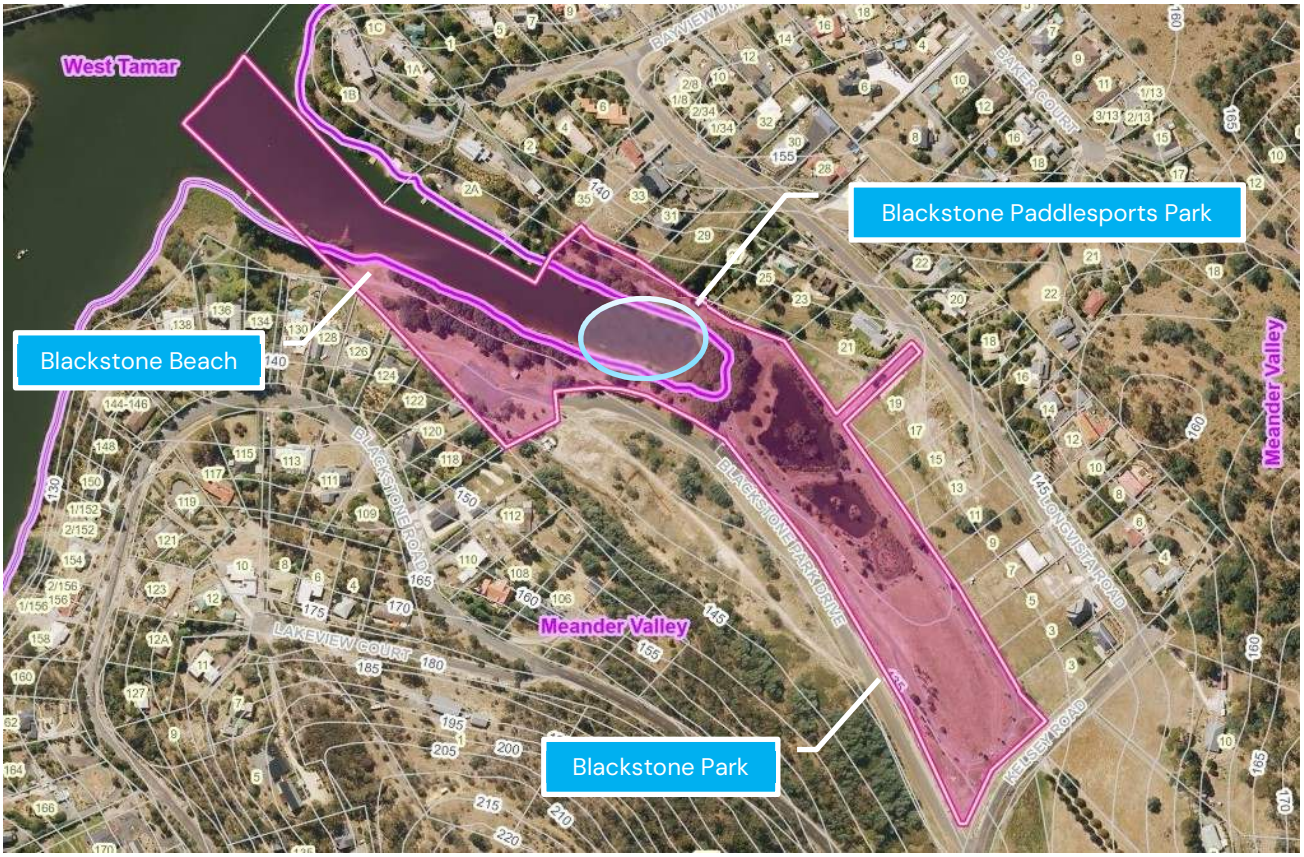
Beyond canoe polo and slalom, the improved site will support a range of water-based active recreational activities. The primary polo field is located at the eastern end of the inlet, leaving a 250m stretch of water between the playing area and Blackstone Park Beach, and an additional 50m to the mouth of the inlet. This space will be well-suited for:

- Open-water swim training, offering a safe, sheltered environment away from powerboats.
- Recreational kayaking and stand-up paddleboarding, benefiting from the improved access and launch areas.
- General active recreation, as the improved embankment and pathways will enhance amenity for a diverse range of users.

# 5 Description of site

## 5.1 Blackstone Park / Longbottom Creek

The site was originally Longbottom Creek, a small creek draining to the South Esk River. The lower end of the creek was flooded by the construction of Trevallyn Dam in 1955 and the small valley that was the bottom end of the creek became a narrow inlet off Lake Trevallyn. In the 1980's Blackstone Heights was developed as a residential subdivision. Anecdotally large earthmoving equipment was used to fill and level land to create housing lots. It is assumed that the Blackstone Park land was set aside at this time. It is not clear when clearing of native vegetation and the construction of a local dam/causeway on Longbottom Creek occurred, as this may have been part of earlier agricultural use. But development of the ornamental lakes, clearing of weeds, ornamental plantings and installation of play equipment within the park has occurred in recent decades.




**Location Plan: Blackstone Park and Blackstone Paddlesports Park**

At the inlet there is evidence of significant clearing and bulk earthworks. The project Design Report notes "*Above approximately RL126, on both the north and south banks, the ground surface is stepped in a series of filled benches. The fill appears to be comprised mostly of weathered dolerite in origin. Areas of minor erosion were observed, likely caused by the lake water, on both the north and south sides of the inlet, between approximately RL126 m and RL126.5 m*". The benches have been surfaced with gravel to form roads around the inlet for maintenance of the park and access to sewerage infrastructure and the rear of Longvista Rd properties.

**Photo: Blackstone Inlet, benching of southern bank**

The municipal boundary, between Meander Valley Council and West Tamar Council, looks to be around the 126.5m contour, this being the full Lake Trevallyn level (top of Trevallyn Dam). This means the area in the West Tamar Council is inundated regularly. Due to Hydro Tasmania's operation of the dam and Trevallyn Power Station water levels over 126m occur daily and levels over 126.3m occur very regularly. Water levels over 126.5m occur multiple times per year, particularly over winter when the dam spills due to high flows in the South Esk River.

## 5.2 Natural Values Atlas Report

A Natural Values Atlas Report has been produced (Attachment 2) which shows:

- No verified records of threatened flora within 500m.
- Verified records of five threatened fauna species within 500m.
    - Grey goshawk
    - Wedge-tailed eagle
    - White-bellied sea-eagle
    - Eastern barred bandicoot
    - Tasmanian devil
- One verified record of a declared weed species within 500m.
    - Ragwort
- Extremely low risk of acid sulphate soils within 1000m
- One threatened community within 1000m.
    - Riparian scrub
- No known biosecurity risks within 1000m.

The Natural Values Atlas Report shows the two vegetation communities present at the site, as per the TASVEG 4.0 classification system, are:

- Urban areas (FUR)
- Water, sea (OAQ)

## 5.3 Flora

The development site is within Meander Valley Council managed Blackstone Park, but due to the steep banks and restricted access is not actively managed, containing a mix of native and exotic vegetation. The vegetation on site has been heavily influenced by the previous clearing and the regular inundation from dam operation, demonstrated by the dominance of crack willows, woolly tea tree and non-native grasses in this zone.

**Table: Flora species identified on site:**

| Native | Non native |
|---|---|
| Woolly tea tree (Leptospermum lanigerum) | Willow (Salix × fragilis) |
| Blackwood (Acacia melanoxylon) | Hawthorn (Crataegus monogyna), |
| Narrow-leaved wattle (acacia mucronate) | Blackberry (Rubus fruticosus) |
| Silver wattle (Acacia dealbata) | Sweet briar (Rosa rubiginosa) |

| | |
|---|---|
| Tree everlasting (Ozothamnus ferrugineus) | Bugleherb (Ajuga reptans) |
| Speargrass | Cordyline |
| | Non-native grasses |

The native flora on site are not threatened species.

**Lake Trevallyn – Blackstone Inlet**
The water area of the site has also been heavily influenced by historic disruption. The site has been cleared and the creek bed and banks have been flooded by Lake Trevallyn. At the site Blackstone Inlet lake bed is "*…0.05 m to 0.15 m of soft alluvial clay/sandy clay, overlain in places with a thin layer of very soft organic clay. The soft clays were underlain by a variable depth of firm to stiff clay / sandy clay and loose sands, which were in turn underlain by weathered dolerite.*" There are some cobbles, particularly on the northern side of the inlet, but there are no larger rocks, fallen timbers or other features often present in a natural stream. There is some pond weed growing in the deeper areas of the inlet that is visible when the lake is drawn down.

**Photo: Blackstone Paddlesports Park site, looking east at low water level**

## 5.4 Fauna

Birds observed at the site are Native hen, Australian wood duck, Pacific black duck and Common blackbird. In other areas of Blackstone Park Masked lapwing, Scarlet robin, Superb fairy wren, Grey currawong, Black swan, Eurasian coot and introduced duck species have been observed.
No mammals have been observed at the project site but Red neck wallaby scats are present.

## 5.5 Surrounding Environment

The site is close to the South Esk River and around 1.5km west of the Trevallyn Nature Recreation Area where there are significant and threatened native flora species present. The riparian scrub threatened community within 1000m identified in the Natural Values Atlas Report is 700m west on the edge of Lake Trevallyn, beyond the urban areas and Eucalyptus delegatensis dry forest vegetation communities. The project site itself it is in a park and urban area which has been cleared and heavily modified, reducing the diversity of species present and the likelihood that the site has significant environmental values.

The scale of the development is small and involves earthworks that will not cause significant alteration to the site environment. The addition of the rock revetment will potentially increase the shelter and habitat available within the waterway area.

The proposed use for sport and active recreation will increase the human presence in the immediate area. But the activities are unpowered and limited to daylight hours, which will minimise these impacts. The increased accessibility to the site for Meander Valley Council operational staff is expected to result in a long-term reduction in weeds and rubbish.

# 6 Performance Criteria for the Environmental Management Zone

The Environmental Management Zone covers the waterway in this area of Lake Trevallyn and land up to approximately the 126.5m contour. The adjacent land area of Blackstone Park is Open Space Zone and falls under the planning jurisdiction of the Meander Valley Council. This document only addresses performance criteria for the components of the development that are in West Tamar Council area, in the Environmental Management Zone.

Under the Use Table 23.2 of the planning scheme, Sport and Recreation Use in the Environmental Management Zone is a discretionary activity. The proposed project at Blackstone Park aligns with the values and objectives of the Environmental Management Zone, ensuring that ecological, scientific, cultural, and scenic considerations are upheld while providing a valuable recreational facility.

## 6.1 Section 23.3 – Use Standards

Objective: That uses listed as Discretionary recognise and reflect the relevant values of the reserved land.

**Performance Criteria**

A use listed as Discretionary must be consistent with the values of the land, having regard to:

**(a) Significance of the Ecological, Scientific, Cultural, or Scenic Values**

The project site is on water and within a public park, in an area of suburban development. It has been modified in the past and use for sport and active recreation is an extension of current park activities that include the waterway. Its proposed use will not negatively impact Ecological, Scientific, Cultural, or Scenic Values or those of surrounding areas in the Environmental Management Zone that are less disturbed. The project will enhance community appreciation of the natural environment through improved access and sustainable use.

**(b) Protection, Conservation, and Management of the Values**

The land around the Environmental Management Zone site is heavily modified with significant historic bulk earthworks. There is a narrow strip of vegetation around the edge of the waterway. Due to the historic earthworks and inundation schedule from the operation of Trevallyn Dam, the diversity of vegetation in this zone is low, consisting primarily of the willow (Salix × fragilis) and the common native bush woolly tea tree (Leptospermum lanigerum). Other species identified are the weeds hawthorn (Crataegus monogyna), blackberry (Rubus fruticosus), sweet briar (Rosa rubiginosa), and grasses.

The development will remove willows, blackberry, sweet briar and hawthorn. The blackwoods will be retained, as will some of the wattles and woolly tea tree where their removal can be avoided by the construction work.

**(c) Specific Requirements of the Use to Operate**

Canoe polo and associated water-based activities require calm, sheltered waters with safe and accessible water entry points. The project's design ensures that these needs are met without significant alterations to the landscape or water body.

**(d) Location, Intensity, and Scale of the Use**

The project is low-intensity and low-impact, it does not involve significant infrastructure development beyond the embankments, placement of the goals and boundary lines for the primary field, and occasional temporary installation of boundary lines, secondary field floating goals, and slalom gates.

**(e) Characteristics and Type of the Use**

The use is for sport and recreation, consisting of non-motorised water activities. The project complements existing low-impact uses such as kayaking, stand-up paddleboarding, and swimming that occur elsewhere on the inlet and other parts of Lake Trevallyn.

**(f) Traffic and Parking Generation**

The project is expected to generate modest increases in traffic, primarily during training sessions and game days. On these days up to 20 additional vehicles can be expected into Blackstone Park. However the existing traffic in the area is low and parking infrastructure, currently catering for in excess of 50 vehicles at Blackstone Park, is more than sufficient to accommodate the anticipated demand. Blackstone Park Rd, Kelsey Rd and Blackstone Rd have carriageways of 6.0m - 7.0m without kerb and channel and road reserve widths of 20m or more. No traffic congestion or parking problems are expected.

**(g) Emissions and Waste Produced by the Use**

As non-motorised activities, canoe polo and slalom do not generate emissions. No waste production is expected. While some generation of litter is possible, Meander Valley Council and regular users of the site will manage this resulting in overall decrease is rubbish at the site, improving the site from its current state.

**(h) Measures to Minimise or Mitigate Impacts**

Use of natural rock and earth materials for the embankments, and the minimal on-water and in-water sport infrastructure, all of which is non-permanent and removable, and the restriction of use to daylight hours all minimise the impact of the proposed use on the values of the area.

**(i) Storage and Handling of Goods, Materials, and Waste**

No materials will be stored in the waterway or on the surrounding land by the use. Waste generated by users will be removed by users or disposed of through existing council waste bins available in the park.

**(j) Proximity of Any Sensitive Uses**

The area surrounding Blackstone Park is suburban. The closest house is approximately 70m away from the development and there are five houses within 100m. The inlet that Blackstone Paddlesports Park is in is a local valley. The site is around 15 metres lower than the closest houses and screened from houses by trees on both banks. Lake Trevallyn and Blackstone Park are already public recreation areas and the proposed use aligns with existing activities. Local noise and activity levels may increase but are expected to remain low. Use is restricted to daylight hours.

## 6.2 Section 23.4 - Development Standards for Building and Works

The on-water components of Blackstone Paddlesports Park are non-permanent installation of goals, line ropes and slalom gates to enable games of canoe polo and slalom training to occur.

**23.4.1 Development area**

The development includes goals, line ropes and slalom gates to enable games of canoe polo and slalom training to occur. This canoe polo and canoe slalom use will utilise approximately 3000 $m^2$ of the inlet, with the southern embankments and revetment covering approximately 1000 $m^2$. The inlet has an area of around 25,000 $m^2$, Trevallyn Dam has a surface area of 1.48 $km^2$.

**23.4.2 Building height, setback and siting**

The two canoe polo goals to be installed for the primary field will be fabricated off site and lifted into place. While they are expected to remain in-situ long term they are not permanent structures and can be lifted out and removed. The top of the canoe polo goals will be 3m above the water surface, the lake bed at the goal locations is at 123.5 & 124m, making the goals 5m & 5.5m high, above the lake bed.

For the adjacent multi-use space, floating canoe polo goals or slalom gates will be installed temporarily as required. The floating goals are 3m high. The slalom gates are 2m high and are suspended just above the water when required.

The area surrounding the on-water portion of the development is Blackstone Park, zoned Open Space. Beyond Blackstone Park the land is zoned Low Density Residential. The development will not negatively impact values of the site and surrounding area. The playing fields are at water level in the inlet, surrounded by park trees and other vegetation. The site is not obvious or easily observable from roads or surrounding residences or public places and, being surrounded by a public park, the scale and appearance of the development is in keeping with the character of the area.

**23.4.3 Exterior finish**

The goals for the primary canoe polo field are hot-dip galvanised steel. The floating goals for the multi-use space are unpainted aluminium.

**23.4.4 Vegetation management**

There is no vegetation in the waterway where the goals are being placed. The embankments and access paths will include removal of trees, particularly willows, silver wattle and woolly tea tree. This is shown on the attached tree removal plan.

**23.5 Development Standards for Subdivision**

No subdivision is occurring for this development.

## 6.3 C7.0 – Natural Assets Code

**C7.4 Use or Development Exempt from this Code**

Removal of native vegetation is minimal. There is also some exemption as this development is in a public park.

> *C7.4.1 The following use or development is exempt from this code*
>
> ...
>
> *(c) clearance of native vegetation within a priority vegetation area, (i) on existing pasture or crop production land; or (ii) if the vegetation is within a private garden, public garden or park, national park, or within State-reserved land or a council reserve,*
>
> ...

**C7.6 Development Standards for Buildings and Works**

C7.6.1 Buildings and works within a waterway and coastal protection area or a future coastal refugia area. Objective: That buildings and works within a waterway and coastal protection area or future coastal refugia area will not have an unnecessary or unacceptable impact on natural assets.

Performance Criteria Buildings and works within a waterway and coastal protection area must avoid or minimise adverse impacts on natural assets, having regard to:

**(a) impacts caused by erosion, siltation, sedimentation and runoff;**

Ultimately the development is expected to reduce erosion, siltation, sedimentation and runoff. Currently large areas of bank are bare earth and impacts are exacerbated by the constantly fluctuating water levels. Construction of the grassed embankment and rock revetment will reduce erosion and siltation. The placement of goal structure will not have an impact. The areas beside the embankments are

gravelled or otherwise surfaced so that during use people moving in and out of the water will cause minimal disturbance of mud and silt.

During construction the water level will be lowered by Hydro Tasmania. Standard construction erosion control measures will reduce the impacts during this phase.

**(b) impacts on riparian or littoral vegetation;**

Vegetation removal is primarily removal of willow, as well as some woolly tea tree and silver wattle.

**(c) maintaining natural streambank and streambed condition, where it exists;**

There is minimal impact on streambed condition, just the placement of the goals. There is also some 200$m^2$ area, the south eastern quarter of the primary canoe polo field, where 0 - 800mm depth of excavation of lake bed is proposed (60$m^3$). This is to ensure a safe depth of water for canoe polo at the range of water levels the field is designed to operate over.

**(d) impacts on in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;**

There are currently no fallen logs or bank overhangs in the development area. It is planned that some of the cobbles and small boulders on the northern bank are reclaimed and used to build the path on the northern side, some of these could be sourced from within the waterway. Due to the heavily modified nature of the waterway at this location it expected that this will have little impact, and will be offset somewhat by the rock revetment on the southern bank.

**(e) the need to avoid significantly impeding natural flow and drainage;**

There is no impediment to natural flow in the waterway created by the development

**(f) the need to maintain fish passage, where known to exist;**

No fish passage exists. Longbotom Creek has previously been dammed 50m east of the proposed development.

**(g) the need to avoid land filling of wetlands;**

The waterway is not a wetland

**(h) the need to group new facilities with existing facilities, where reasonably practical;**

The new facility is grouped with existing facilities. It is in the public Blackstone Park which incorporates sports and recreation activities including walking tracks, children's play equipment, a zip line, basketball court, picnic tables and barbeques, public toilets and the (artificially created) Blackstone Beach. Lake Trevallyn beyond the inlet is a popular water-skiing area in summer.

**Photo: Blackstone Park**

**(i) minimising cut and fill;**

Minimal cut is proposed to enable safe use of the canoe polo field, see item (c) above

**(j) building design that responds to the particular size, shape, contours or slope of the land;**

No building as part of the development, apart from the placement of the primary field goals.

**(k) minimising impacts on coastal processes, including sand movement and wave action;**

Development is not on the coast

**(l) minimising the need for future works for the protection of natural assets, infrastructure and property;**

Extent of development is minimal and will not cause a need for future protection works

**(m) the environmental best practice guidelines in the Wetlands and Waterways Works Manual; and**

Construction is to be undertaken by Meander Valley Council who will manage the works in accordance with the environmental best practice guidelines in the Wetlands and Waterways Works Manual

**(n) the guidelines in the Tasmanian Coastal Works Manual.**

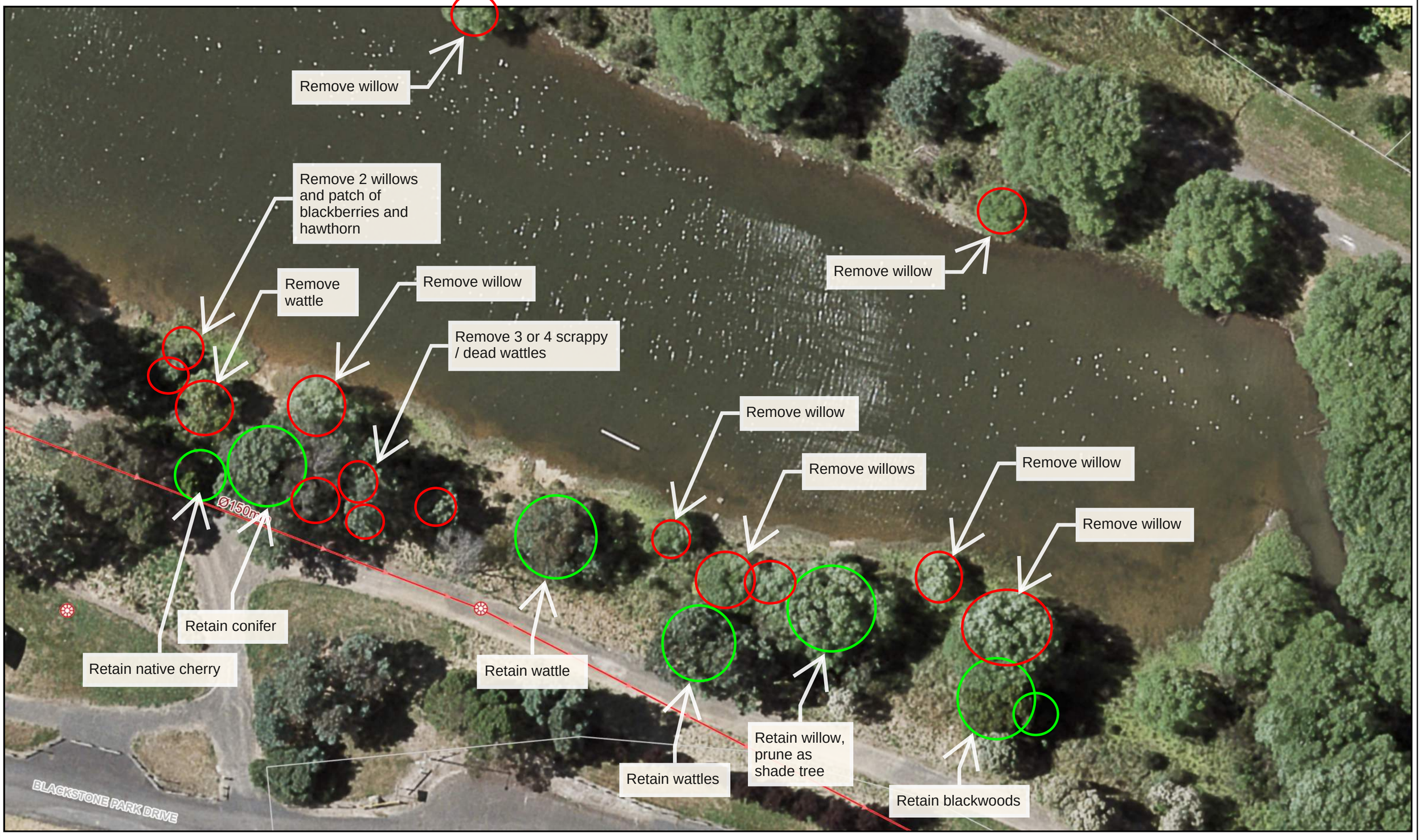
Development is not on the coast

# 7 Attachments

## 7.1 Attachment 1 – Tree Removal Plan

## 7.2 Attachment 2 – Natural Values Atlas Report

# Attachment 1 - Blackstone Paddlesports Park - Tree Removal Plan




1: 500

Note: Trees not marked are to be retained

25.40 Meters 0 12.70 25.40

Attachment 2

# Natural Values Atlas Report

*Authoritative, comprehensive information on Tasmania's natural values.*

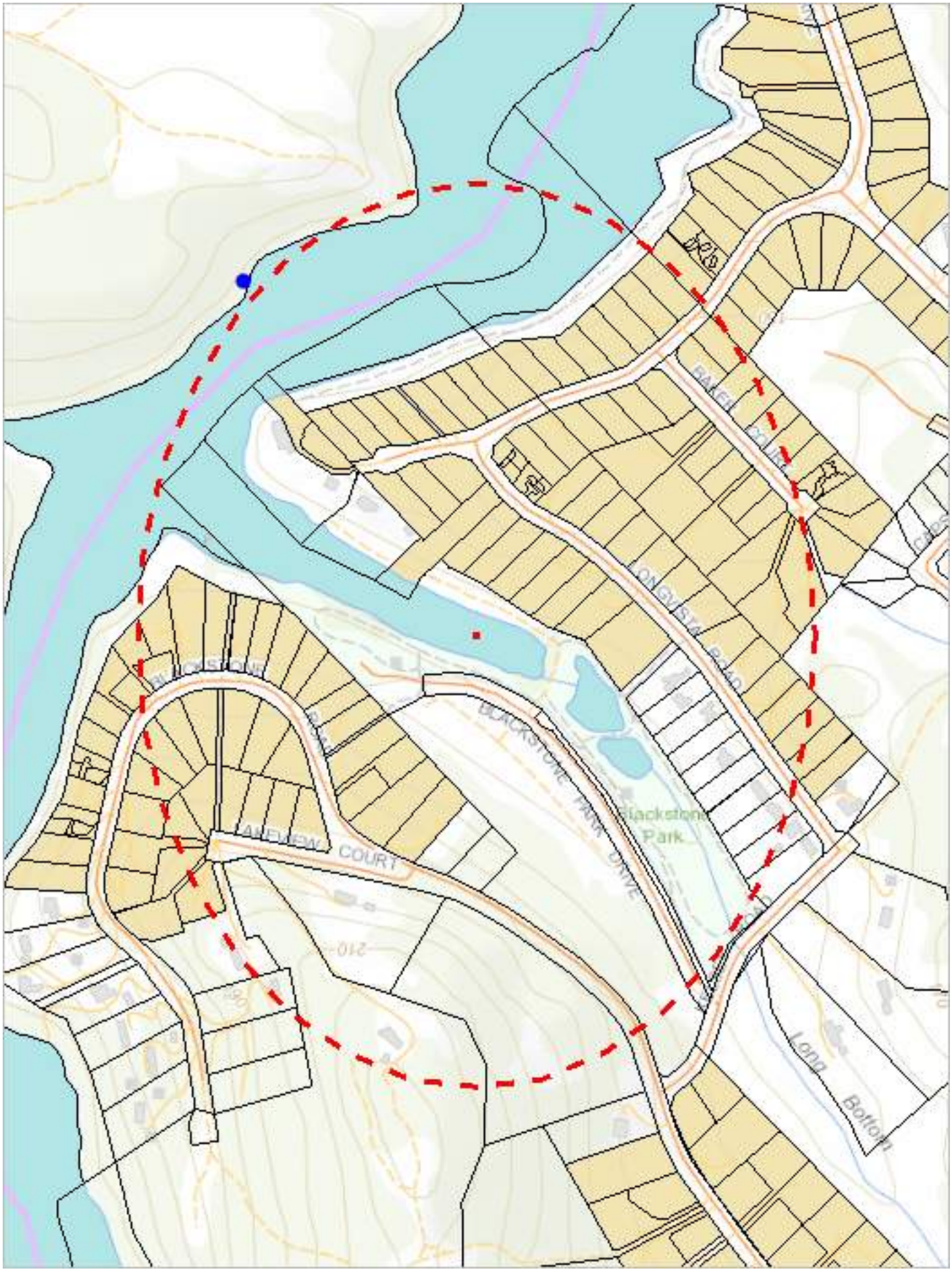
| | |
|---|---|
| Reference: | |
| Requested For: | |
| Report Type: | Summary Report |
| Timestamp: | 12:10:25 PM Wednesday 16 April 2025 |
| Threatened Flora: | buffers Min: 500m Max: 5000m |
| Threatened Fauna: | buffers Min: 500m Max: 5000m |
| Raptors: | buffers Min: 500m Max: 5000m |
| Tasmanian Weed Management Act Weeds: | buffers Min: 500m Max: 5000m |
| Priority Weeds: | buffers Min: 500m Max: 5000m |
| Geoconservation: | buffer 1000m |
| Acid Sulfate Soils: | buffer 1000m |
| TASVEG: | buffer 1000m |
| Threatened Communities: | buffer 1000m |
| Fire History: | buffer 1000m |
| Tasmanian Reserve Estate: | buffer 1000m |
| Biosecurity Risks: | buffer 1000m |


The centroid for this query GDA94: 506017.0, 5410580.0 falls within:

Property: 9921401

# Threatened flora within 500 metres

506544, 5411280




505490, 5409880

Please note that some layers may not display at all requested map scales

# Threatened flora within 500 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Threatened flora within 500 metres

## Verified Records

| Species | Common Name | SS | NS | Bio | Observation Count | Last Recorded |
|---|---|---|---|---|---|---|
| Prostanthera rotundifolia | roundleaf mintbush | v | | n | 1 | 07-Nov-2010 |

## Unverified Records

No unverified records were found!

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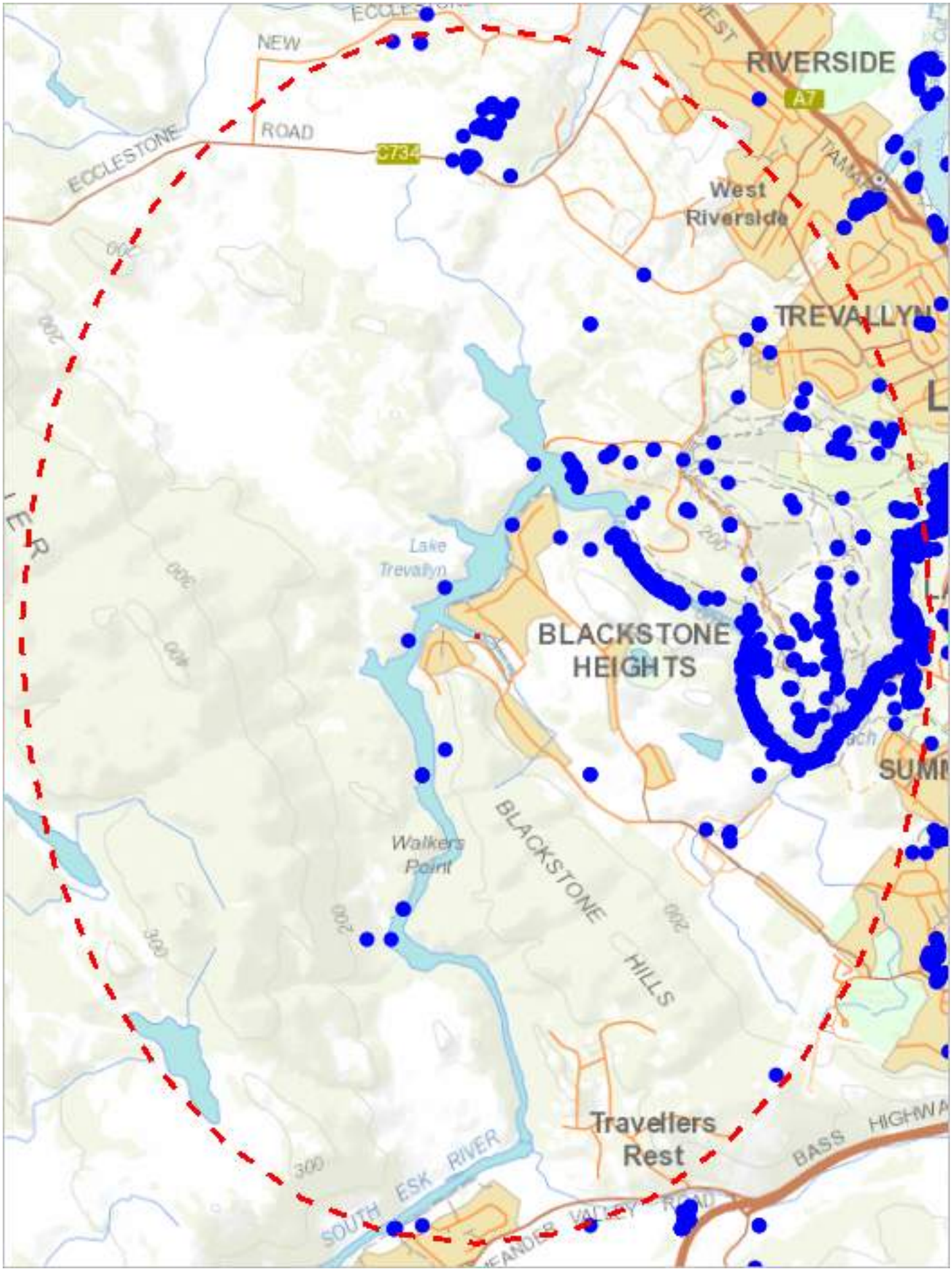
Telephone: 1300 368 550
Email: ThreatenedSpecies.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

# Threatened flora within 5000 metres

509934, 5415780




502105, 5405378

Please note that some layers may not display at all requested map scales

# Threatened flora within 5000 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Threatened flora within 5000 metres

## Verified Records

| Species | Common Name | SS | NS | Bio | Observation Count | Last Recorded |
|---|---|---|---|---|---|---|
| Alternanthera denticulata | lesser joyweed | e | | n | 438 | 10-Jan-2024 |
| Anogramma leptophylla | annual fern | v | | n | 7 | 19-Oct-1984 |
| Aphelia gracilis | slender fanwort | r | | n | 23 | 27-Nov-2021 |
| Aphelia pumilio | dwarf fanwort | r | | n | 35 | 08-Nov-2024 |
| Asperula subsimplex | water woodruff | r | | n | 1 | 18-Jul-2006 |
| Blechnum spinulosum | small raspfern | e | | n | 29 | 26-Feb-2018 |
| Bolboschoenus caldwellii | sea clubsedge | r | | n | 1 | 03-Jan-1990 |
| Boronia gunnii | river boronia | v | VU | e | 20 | 28-Oct-1961 |
| Brunonia australis | blue pincushion | r | | n | 106 | 05-Dec-2024 |
| Caesia calliantha | blue grasslily | r | | n | 48 | 16-Dec-2024 |
| Caladenia patersonii | patersons spider-orchid | v | | n | 2 | 03-Oct-2007 |
| Callitris oblonga subsp. oblonga | south esk pine | v | EN | e | 23 | 02-Nov-2022 |
| Calochilus campestris | copper beard-orchid | e | | n | 1 | 12-Nov-2012 |
| Calystegia sepium subsp. sepium | swamp bindweed | r | | n | 10 | 15-May-2023 |
| Carex gunniana | mountain sedge | r | | n | 1 | 15-Dec-2009 |
| Carex longebrachiata | drooping sedge | r | | n | 3 | 18-Jul-2006 |
| Centipeda cunninghamii | erect sneezeweed | r | | n | 9 | 14-Feb-2018 |
| Corunastylis nuda | tiny midge-orchid | r | | n | 1 | 01-Mar-1945 |
| Craspedia paludicola | swamp billybuttons | ?r | | n | 1 | 01-Jan-1911 |
| Dianella amoena | grassland flaxlily | r | EN | n | 55 | 17-Dec-2024 |
| Discaria pubescens | spiky anchorplant | e | | n | 1 | 01-Jan-1912 |
| Epacris exserta | south esk heath | e | PEN | e | 41 | 18-Mar-2010 |
| Glossostigma elatinoides | small mudmat | r | | n | 1 | 31-Dec-1920 |
| Goodenia paradoxa | spur velleia | v | | n | 3 | 04-Jan-1992 |
| Gratiola pubescens | hairy brooklime | r | | n | 2 | 11-Feb-2011 |
| Gynatrix pulchella | fragrant hempbush | r | | n | 1 | 30-Nov-1921 |
| Gyrostemon thesioides | broom wheelfruit | r | | n | 13 | 16-Dec-2022 |
| Haloragis heterophylla | variable raspwort | r | | n | 7 | 14-Jan-2022 |
| Hovea tasmanica | rockfield purplepea | r | | e | 7 | 14-Jan-2021 |
| Isoetes elatior | tall quillwort | r | | e | 1 | 15-Mar-1842 |
| Isoetes humilior | veiled quillwort | r | | e | 1 | 31-Mar-1849 |
| Lachnagrostis semibarbata var. semibarbata | bristle blowngrass | r | | n | 1 | 18-Dec-1986 |
| Lycopus australis | australian gypsywort | e | | n | 7 | 15-Feb-2015 |
| Lythrum salicaria | purple loosestrife | v | | n | 90 | 10-Jan-2024 |
| Mentha australis | river mint | e | | n | 63 | 14-Dec-2024 |
| Muehlenbeckia axillaris | matted lignum | r | | n | 2 | 02-Apr-1980 |
| Myriophyllum integrifolium | tiny watermilfoil | v | | n | 1 | 18-Nov-1991 |
| Paraprasophyllum robustum | robust leek-orchid | e | CR | e | 5 | 04-Nov-2020 |
| Parietaria debilis | shade pellitory | r | | n | 1 | 03-Nov-1992 |
| Persicaria decipiens | slender waterpepper | v | | n | 65 | 23-Mar-2023 |
| Persicaria subsessilis | bristly waterpepper | e | | n | 202 | 18-Feb-2023 |
| Phyllangium divergens | wiry mitrewort | v | | n | 1 | 07-Nov-1949 |
| Poa mollis | soft tussockgrass | r | | e | 121 | 05-Dec-2020 |
| Pomaderris intermedia | lemon dogwood | r | | n | 1 | 14-Aug-2024 |
| Prostanthera rotundifolia | roundleaf mintbush | v | | n | 57 | 05-Oct-2023 |
| Pterostylis grandiflora | superb greenhood | r | | n | 1 | 01-May-1938 |
| Ranunculus pumilio var. pumilio | ferny buttercup | r | | n | 2 | 01-Jan-2000 |
| Schoenoplectus tabernaemontani | river clubsedge | r | | n | 2 | 14-Feb-2018 |
| Scutellaria humilis | dwarf skullcap | r | | n | 18 | 05-Dec-2020 |
| Senecio campylocarpus | bulging fireweed | v | | n | 19 | 26-Feb-2018 |
| Senecio squarrosus | leafy fireweed | r | | n | 26 | 19-Oct-2020 |
| Siloxerus multiflorus | small wrinklewort | r | | n | 29 | 23-Oct-2024 |
| Spyridium eriocephalum | MacGillivray spiridium | e | | n | 4 | 20-Oct-1880 |
| Spyridium vexilliferum var. vexilliferum | helicopter bush | r | | n | 13 | 09-Dec-2023 |
| Stylidium despectum | small triggerplant | r | | n | 5 | 24-Nov-2021 |
| Teucrium corymbosum | forest germander | r | | n | 1 | 01-Jan-1911 |
| Triptilodiscus pygmaeus | dwarf sunray | v | | n | 3 | 08-Oct-2015 |
| Utricularia australis | yellow bladderwort | r | | n | 9 | 15-Apr-2024 |
| Veronica plebeia | trailing speedwell | r | | n | 39 | 14-Dec-2024 |
| Viola caleyana | swamp violet | r | | n | 1 | 18-Jan-1993 |
| Xerochrysum bicolor | eastcoast paperdaisy | r | | n | 9 | 26-Dec-2022 |

# Threatened flora within 5000 metres

## Unverified Records

No unverified records were found!

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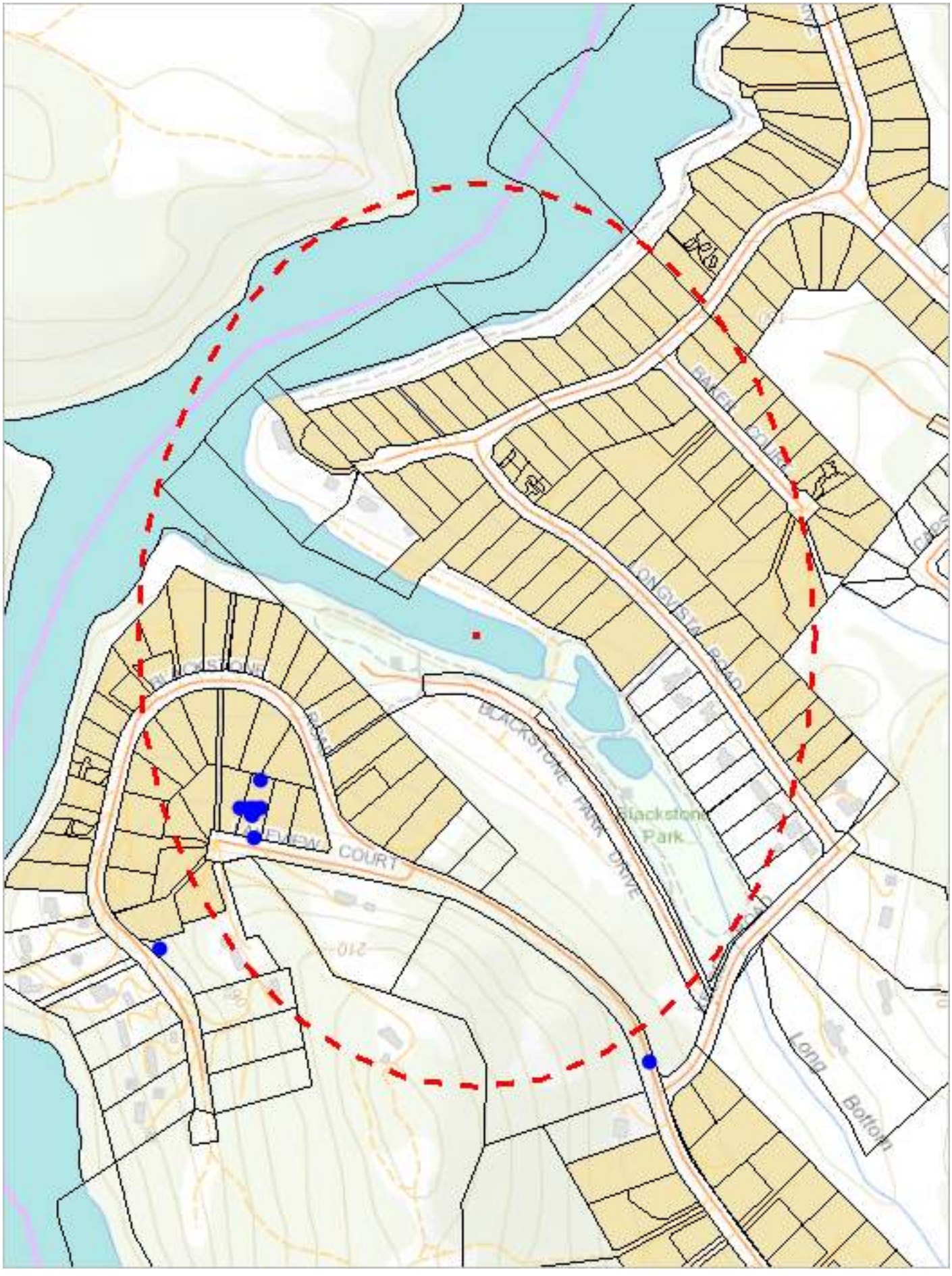
Email: ThreatenedSpecies.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

# Threatened fauna within 500 metres

506544, 5411280




505490, 5409880

Please note that some layers may not display at all requested map scales

# Threatened fauna within 500 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Threatened fauna within 500 metres

## Verified Records

| Species | Common Name | SS | NS | Bio | Observation Count | Last Recorded |
|---|---|---|---|---|---|---|
| Accipiter novaehollandiae | grey goshawk | e | | n | 2 | 02-Dec-2023 |
| Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | e | EN | e | 3 | 02-Oct-2020 |
| Haliaeetus leucogaster | white-bellied sea-eagle | v | | n | 4 | 31-Jul-2020 |
| Perameles gunnii | eastern barred bandicoot | | VU | n | 4 | 17-Jul-2022 |
| Sarcophilus harrisii | tasmanian devil | e | EN | e | 1 | 15-Jul-2022 |

## Unverified Records

No unverified records were found!

# Threatened fauna within 500 metres

## (based on Range Boundaries)

| Species | Common Name | SS | NS | BO | Potential | Known | Core |
|---|---|---|---|---|---|---|---|
| Pasmaditta jungermanniae | Cataract Gorge Pinhead Snail | v | | e | 1 | 0 | 0 |
| Litoria raniformis | green and gold frog | v | VU | n | 1 | 0 | 1 |
| Prototroctes maraena | australian grayling | v | VU | ae | 1 | 0 | 0 |
| Pseudemoia pagenstecheri | tussock skink | v | | n | 1 | 0 | 0 |
| Haliaeetus leucogaster | white-bellied sea-eagle | v | | n | 2 | 0 | 0 |
| Galaxias fontanus | swan galaxias | e | EN | e | 1 | 0 | 0 |
| Tyto novaehollandiae subsp. castanops | masked owl (Tasmanian) | e | VU | e | 1 | 0 | 1 |
| Dasyurus maculatus subsp. maculatus | spotted-tailed quoll | r | VU | n | 1 | 0 | 0 |
| Catadromus lacordairei | Green-lined ground beetle | v | | n | 1 | 0 | 0 |
| Accipiter novaehollandiae | grey goshawk | e | | n | 1 | 0 | 0 |
| Sarcophilus harrisii | tasmanian devil | e | EN | e | 1 | 0 | 0 |
| Perameles gunnii | eastern barred bandicoot | | VU | n | 1 | 0 | 1 |
| Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | e | EN | e | 1 | 0 | 0 |
| Dasyurus viverrinus | eastern quoll | | EN | n | 0 | 0 | 1 |

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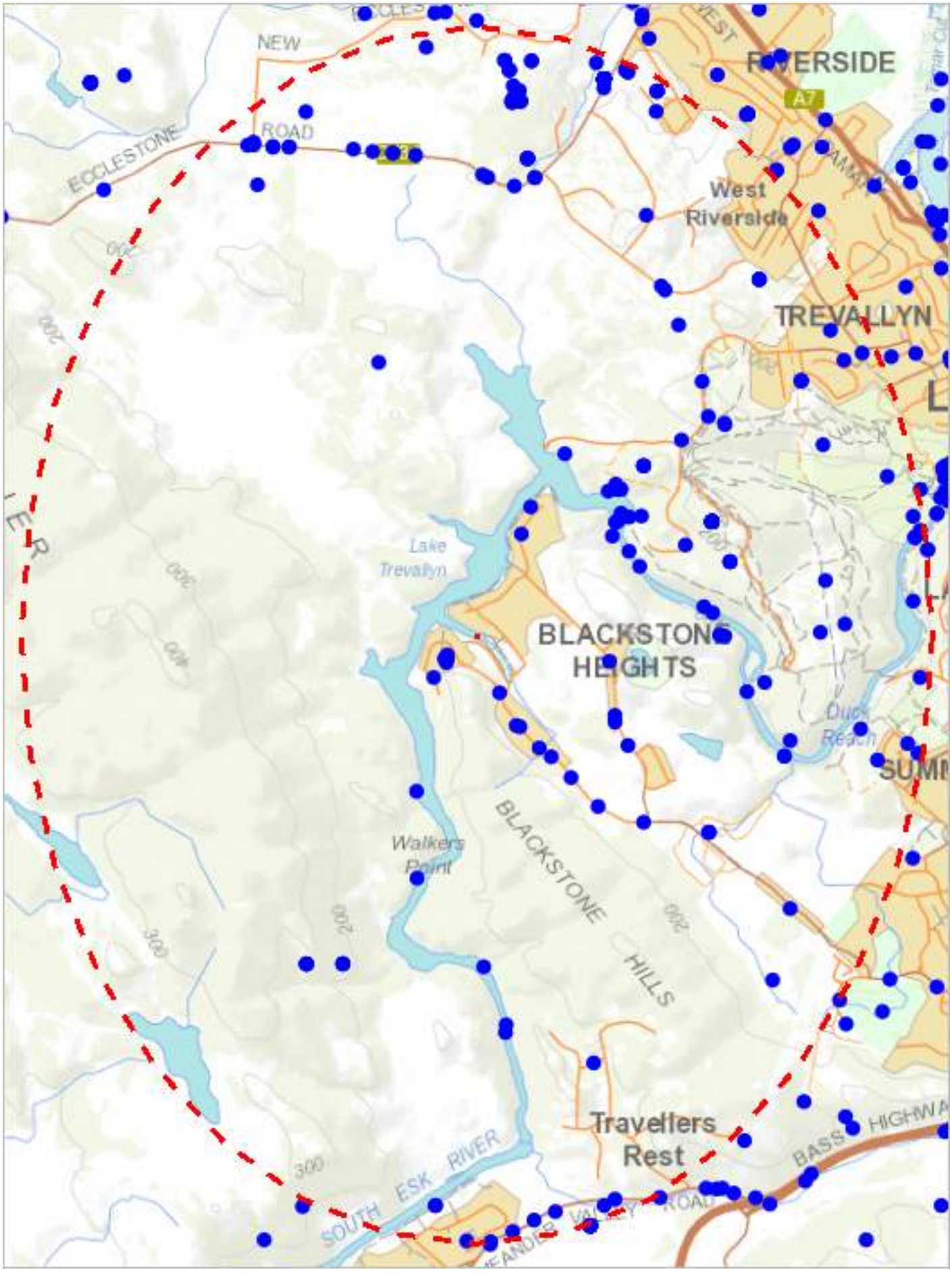
# Threatened fauna within 5000 metres

509934, 5415780




502105, 5405378

Please note that some layers may not display at all requested map scales

# Threatened fauna within 5000 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Threatened fauna within 5000 metres

## Verified Records

| Species | Common Name | SS | NS | Bio | Observation Count | Last Recorded |
|---|---|---|---|---|---|---|
| Accipiter novaehollandiae | grey goshawk | e | | n | 38 | 14-Dec-2024 |
| Aquila audax | wedge-tailed eagle | pe | PEN | n | 28 | 24-Sep-2022 |
| Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | e | EN | e | 26 | 18-Aug-2024 |
| Beddomeia launcestonensis | hydrobiid snail (cataract gorge) | e | | eH | 22 | 01-Jan-2001 |
| Botaurus poiciloptilus | australasian bittern | | EN | n | 8 | 12-Dec-1981 |
| Calidris acuminata | sharp-tailed sandpiper | | VU | n | 7 | 11-Jan-2025 |
| Dasyurus maculatus | spotted-tailed quoll | r | VU | n | 14 | 05-Jun-2021 |
| Dasyurus maculatus subsp. maculatus | spotted-tailed quoll | r | VU | n | 7 | 01-Aug-2021 |
| Dasyurus viverrinus | eastern quoll | | EN | n | 6 | 01-Mar-2024 |
| Gallinago hardwickii | lathams snipe | | VU | n | 1 | 31-Aug-1980 |
| Haliaeetus leucogaster | white-bellied sea-eagle | v | | n | 26 | 06-Apr-2022 |
| Hirundapus caudacutus | white-throated needletail | | VU | n | 18 | 07-Mar-2015 |
| Lathamus discolor | swift parrot | e | CR | mbe | 20 | 10-Nov-2023 |
| Litoria raniformis | green and gold frog | v | VU | n | 10 | 21-Oct-2022 |
| Migas plomleyi | Plomley's trapdoor spider or spider (cataract gorge) | e | | e | 7 | 05-Sep-2005 |
| Neophema chrysostoma | blue-winged parrot | | VU | n | 14 | 21-Dec-2018 |
| Pasmaditta jungermanniae | Cataract Gorge Pinhead Snail | v | | e | 26 | 09-Apr-2024 |
| Perameles gunnii | eastern barred bandicoot | | VU | n | 49 | 12-May-2024 |
| Poliocephalus cristatus subsp. australis | great crested grebe | pv | | | 8 | 31-Aug-1980 |
| Prototroctes maraena | australian grayling | v | VU | ae | 8 | 09-Feb-2016 |
| Pseudemoia rawlinsoni | glossy grass skink | r | | n | 1 | 25-Mar-2020 |
| Sarcophilus harrisii | tasmanian devil | e | EN | e | 71 | 15-Nov-2023 |
| Tyto novaehollandiae | masked owl | pe | PVU | n | 14 | 02-Nov-2021 |
| Tyto novaehollandiae subsp. castanops | masked owl (Tasmanian) | e | VU | e | 1 | 06-Sep-2012 |

## Unverified Records

No unverified records were found!

# Threatened fauna within 5000 metres

## (based on Range Boundaries)

| Species | Common Name | SS | NS | BO | Potential | Known | Core |
|---|---|---|---|---|---|---|---|
| Pasmaditta jungermanniae | Cataract Gorge Pinhead Snail | v | | e | 1 | 1 | 0 |
| Litoria raniformis | green and gold frog | v | VU | n | 1 | 0 | 1 |
| Prototroctes maraena | australian grayling | v | VU | ae | 1 | 0 | 0 |
| Antipodia chaostola | chaostola skipper | e | EN | ae | 1 | 0 | 0 |
| Pseudemoia pagenstecheri | tussock skink | v | | n | 1 | 0 | 0 |
| Haliaeetus leucogaster | white-bellied sea-eagle | v | | n | 2 | 0 | 0 |
| Galaxias fontanus | swan galaxias | e | EN | e | 1 | 0 | 0 |
| Limnodynastes peroni | striped marsh frog | e | | n | 1 | 0 | 0 |
| Tyto novaehollandiae subsp. castanops | masked owl (Tasmanian) | e | VU | e | 1 | 0 | 1 |
| Migas plomleyi | Plomley's trapdoor spider or spider (cataract gorge) | e | | e | 2 | 0 | 0 |
| Galaxiella pusilla | eastern dwarf galaxias | v | VU | n | 1 | 0 | 0 |
| Dasyurus maculatus subsp. maculatus | spotted-tailed quoll | r | VU | n | 1 | 0 | 0 |
| Catadromus lacordairei | Green-lined ground beetle | v | | n | 1 | 0 | 0 |
| Beddomeia launcestonensis | hydrobiid snail (cataract gorge) | e | | eH | 0 | 1 | 0 |
| Accipiter novaehollandiae | grey goshawk | e | | n | 1 | 0 | 0 |
| Sarcophilus harrisii | tasmanian devil | e | EN | e | 1 | 0 | 0 |
| Perameles gunnii | eastern barred bandicoot | | VU | n | 1 | 0 | 1 |
| Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | e | EN | e | 1 | 0 | 0 |
| Dasyurus viverrinus | eastern quoll | | EN | n | 0 | 0 | 1 |

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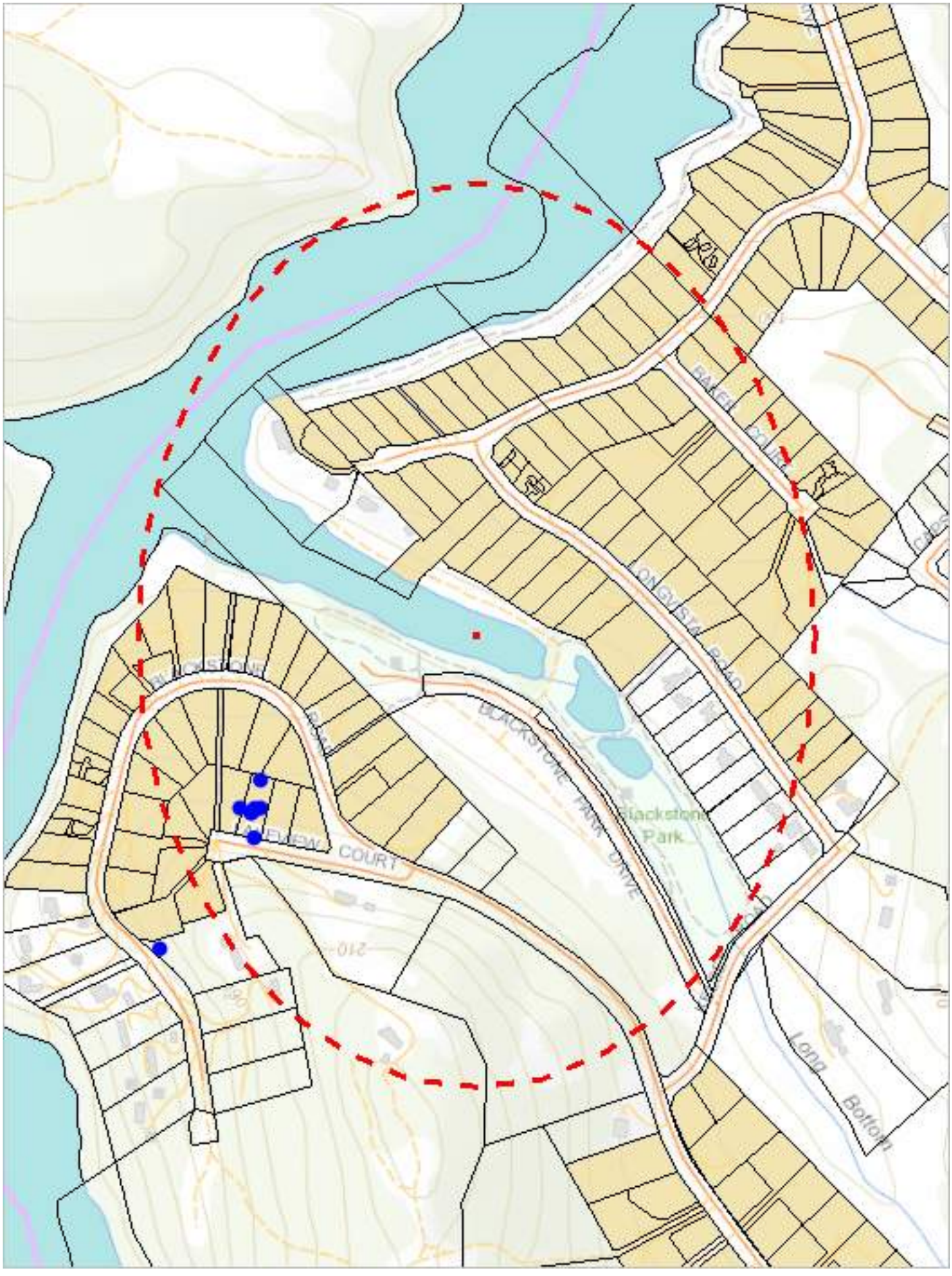
# Raptor nests and sightings within 500 metres

506544, 5411280




505490, 5409880

Please note that some layers may not display at all requested map scales

# Raptor nests and sightings within 500 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Raptor nests and sightings within 500 metres

## Verified Records

| Nest Id/Location Foreign Id | Species | Common Name | Obs Type | Observation Count | Last Recorded |
|---|---|---|---|---|---|
| | Accipiter novaehollandiae | grey goshawk | Sighting | 2 | 02-Dec-2023 |
| | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Sighting | 3 | 02-Oct-2020 |
| | Haliaeetus leucogaster | white-bellied sea-eagle | Sighting | 4 | 31-Jul-2020 |

## Unverified Records

No unverified records were found!

# Raptor nests and sightings within 500 metres

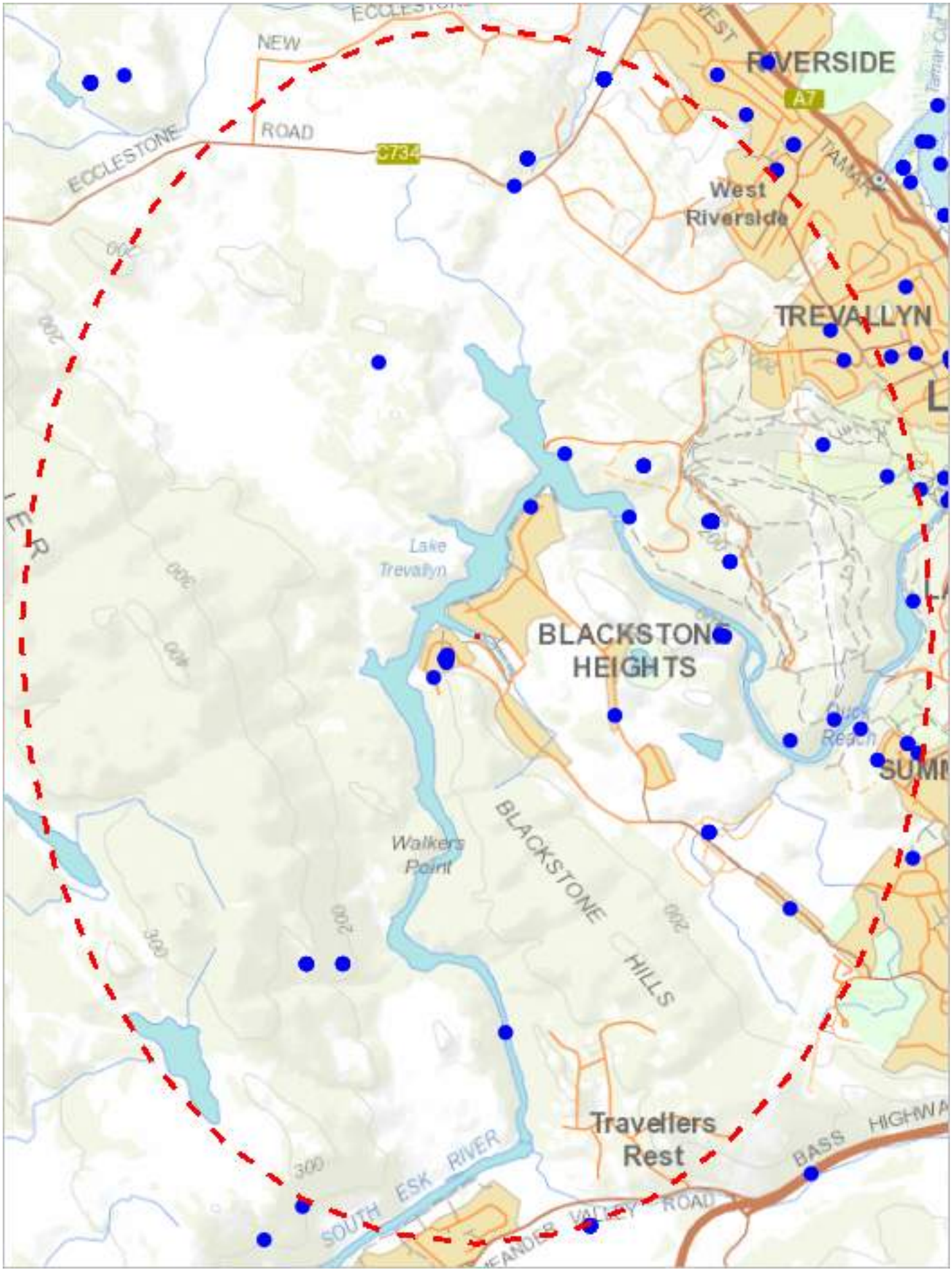
(based on Range Boundaries)

| Species | Common Name | SS | NS | Potential | Known | Core |
|---|---|---|---|---|---|---|
| Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | e | EN | 1 | 0 | 0 |
| Accipiter novaehollandiae | grey goshawk | e | | 1 | 0 | 0 |
| Haliaeetus leucogaster | white-bellied sea-eagle | v | | 2 | 0 | 0 |

For more information about raptor nests, please contact Threatened Species Enquiries.
Telephone: 1300 368 550
Email: ThreatenedSpecies.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

# Raptor nests and sightings within 5000 metres

509934, 5415780




502105, 5405378

Please note that some layers may not display at all requested map scales

# Raptor nests and sightings within 5000 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Raptor nests and sightings within 5000 metres

## Verified Records

| Nest Id/Location Foreign Id | Species | Common Name | Obs Type | Observation Count | Last Recorded |
|---|---|---|---|---|---|
| 1109 | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Nest | 1 | 20-Nov-2002 |
| 114 | Falco peregrinus | peregrine falcon | Nest | 1 | 01-Jan-1985 |
| 145 | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Nest | 4 | 20-Dec-2000 |
| 1913 | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Nest | 2 | 12-Nov-2010 |
| 2219 | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Nest | 1 | 26-Jun-2015 |
| 2329 | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Nest | 1 | 09-Nov-2016 |
| 2702 | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Nest | 4 | 06-Jul-2020 |
| 2774 | Accipiter cirrocephalus subsp. cirrocephalus | collared sparrowhawk | Nest | 1 | 08-Feb-2020 |
| 732 | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Nest | 3 | 20-Nov-2002 |
| | Accipiter novaehollandiae | grey goshawk | Carcass | 1 | 15-Nov-2015 |
| | Accipiter novaehollandiae | grey goshawk | Not Recorded | 7 | 10-Feb-2017 |
| | Accipiter novaehollandiae | grey goshawk | Sighting | 30 | 14-Dec-2024 |
| | Aquila audax | wedge-tailed eagle | Not Recorded | 12 | 11-Nov-2017 |
| | Aquila audax | wedge-tailed eagle | Sighting | 16 | 24-Sep-2022 |
| | Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | Sighting | 10 | 18-Aug-2024 |
| | Falco longipennis | australian hobby | Sighting | 5 | 12-May-2024 |
| | Falco peregrinus | peregrine falcon | Not Recorded | 3 | 15-Apr-2014 |
| | Falco peregrinus | peregrine falcon | Sighting | 1 | 17-Mar-2021 |
| | Haliaeetus leucogaster | white-bellied sea-eagle | Not Recorded | 4 | 27-Dec-2017 |
| | Haliaeetus leucogaster | white-bellied sea-eagle | Sighting | 22 | 06-Apr-2022 |
| | Tyto novaehollandiae | masked owl | Audible | 3 | 08-Mar-2020 |
| | Tyto novaehollandiae | masked owl | Not Recorded | 6 | 01-Dec-2016 |
| | Tyto novaehollandiae | masked owl | Sighting | 5 | 02-Nov-2021 |

## Unverified Records

No unverified records were found!

# Raptor nests and sightings within 5000 metres

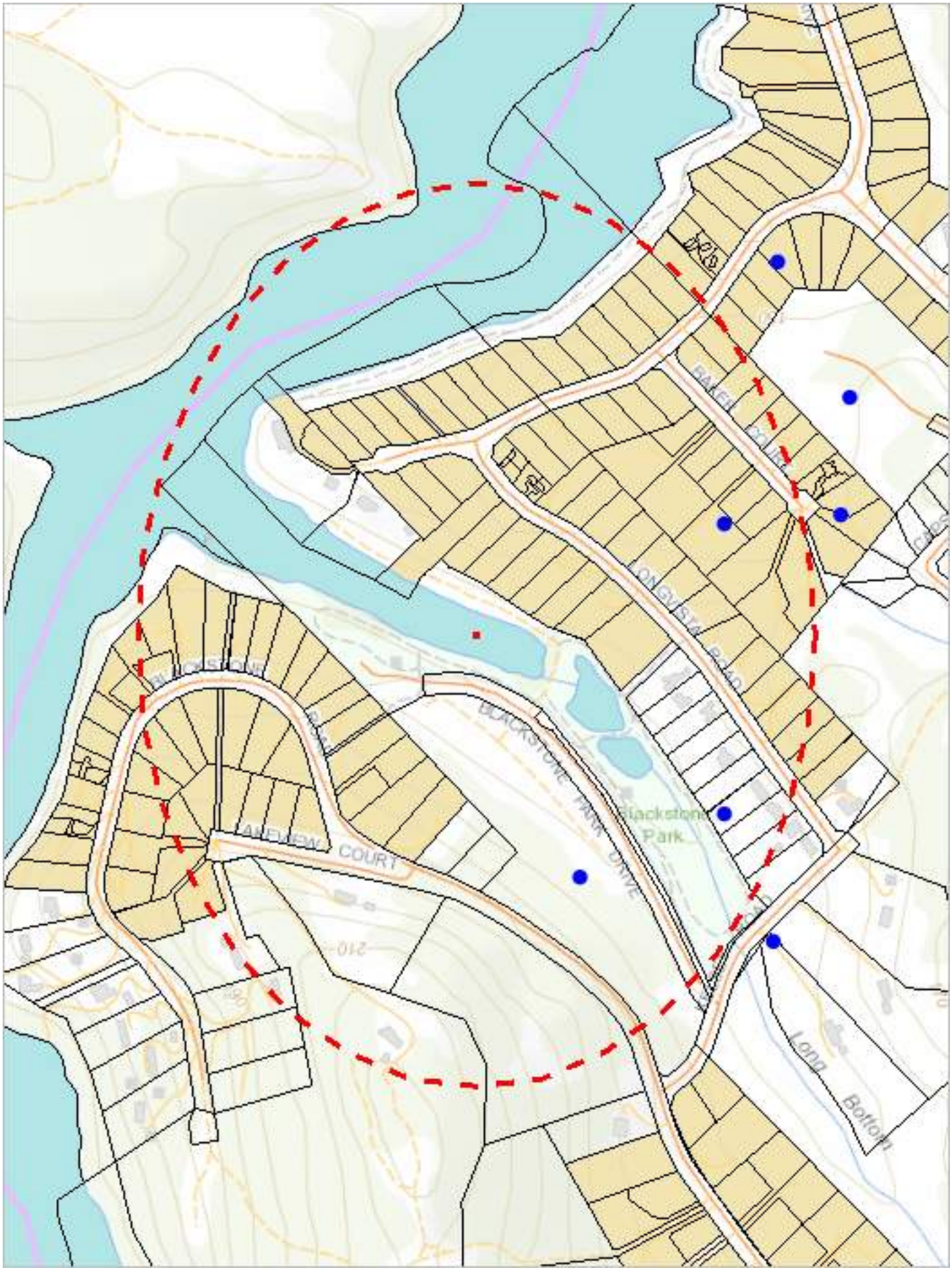
## (based on Range Boundaries)

| Species | Common Name | SS | NS | Potential | Known | Core |
|---|---|---|---|---|---|---|
| Aquila audax subsp. fleayi | tasmanian wedge-tailed eagle | e | EN | 1 | 0 | 0 |
| Accipiter novaehollandiae | grey goshawk | e | | 1 | 0 | 0 |
| Haliaeetus leucogaster | white-bellied sea-eagle | v | | 2 | 0 | 0 |

For more information about raptor nests, please contact Threatened Species Enquiries.
Telephone: 1300 368 550
Email: ThreatenedSpecies.Enquiries@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

# Tas Management Act Weeds within 500 m

506544, 5411280




505490, 5409880

Please note that some layers may not display at all requested map scales

# Tas Management Act Weeds within 500 m

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Tas Management Act Weeds within 500 m

## Verified Records

| Species | Common Name | Observation Count | Last Recorded |
|---|---|---|---|
| Senecio jacobaea | ragwort | 6 | 04-Mar-2021 |

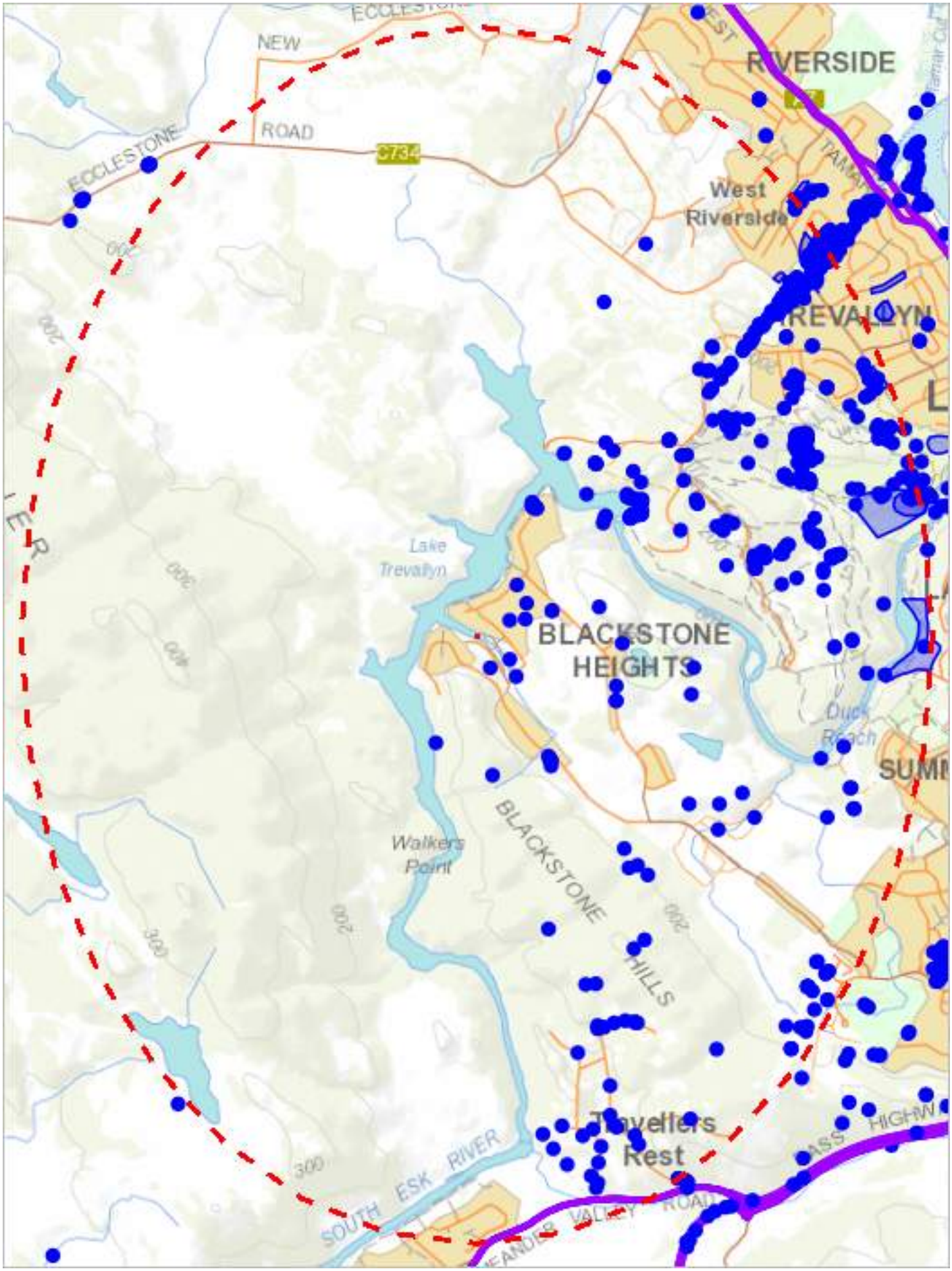
## Unverified Records

For more information about introduced weed species, please visit the following URL for contact details in your area:

https://www.nre.tas.gov.au/invasive-species/weeds

# Tas Management Act Weeds within 5000 m

509934, 5415780




502105, 5405378

Please note that some layers may not display at all requested map scales

# Tas Management Act Weeds within 5000 m

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Tas Management Act Weeds within 5000 m

## Verified Records

| Species | Common Name | Observation Count | Last Recorded |
|---|---|---|---|
| Asparagus asparagoides | bridal creeper | 25 | 11-May-2019 |
| Carduus pycnocephalus | slender thistle | 26 | 15-Dec-2013 |
| Carduus tenuiflorus | winged thistle | 1 | 30-Mar-1996 |
| Cenchrus longisetus | feathertop | 1 | 28-Apr-2020 |
| Chrysanthemoides monilifera subsp. monilifera | boneseed | 89 | 27-Sep-2024 |
| Cirsium arvense var. arvense | creeping thistle | 4 | 09-Oct-2020 |
| Cortaderia jubata | pink pampasgrass | 1 | 01-Feb-1988 |
| Cortaderia selloana | silver pampasgrass | 3 | 28-Mar-1988 |
| Cortaderia sp. | pampas grass | 2 | 16-Mar-2015 |
| Cytisus scoparius | english broom | 4 | 18-Nov-2024 |
| Digitalis purpurea | foxglove | 1 | 25-Nov-2022 |
| Echium plantagineum | patersons curse | 38 | 07-Dec-2015 |
| Echium vulgare | vipers bugloss | 1 | 18-Nov-2019 |
| Elodea canadensis | canadian pondweed | 2 | 25-Jan-2020 |
| Erica cinerea | bell heather | 1 | 07-Feb-2024 |
| Erica lusitanica | spanish heath | 141 | 17-Dec-2024 |
| Erica scoparia | twig heath | 7 | 16-Jul-2014 |
| Genista monspessulana | montpellier broom or canary broom | 4 | 04-Oct-2022 |
| Ilex aquifolium | holly | 19 | 09-Apr-2022 |
| Leycesteria formosa | himalayan honeysuckle | 2 | 11-Dec-2021 |
| Onopordum acanthium | scotch thistle | 1 | 01-Feb-2024 |
| Rubus fruticosus | blackberry | 77 | 07-Aug-2023 |
| Salix alba var. vitellina | golden willow | 2 | 01-Nov-2003 |
| Salix x fragilis nothovar. fragilis | crack willow | 7 | 01-Nov-2015 |
| Senecio jacobaea | ragwort | 25 | 04-Mar-2021 |
| Ulex europaeus | gorse | 211 | 17-Dec-2024 |
| Xanthium spinosum | bathurst burr | 4 | 16-Jul-2014 |

## Unverified Records

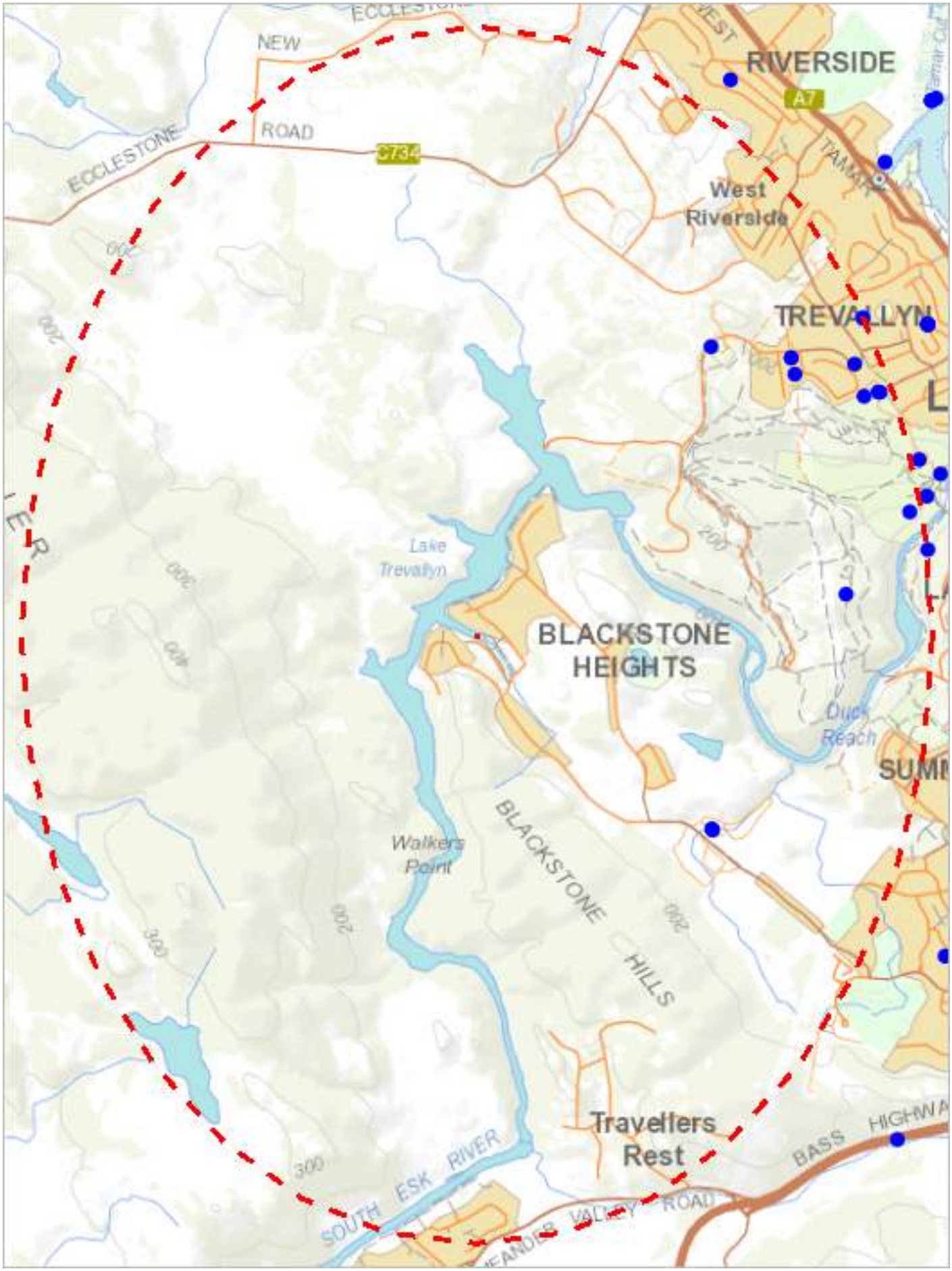
For more information about introduced weed species, please visit the following URL for contact details in your area:

https://www.nre.tas.gov.au/invasive-species/weeds

*** No Priority Weeds found within 500 metres ***

# Priority Weeds within 5000 m

509934, 5415780




502105, 5405378

Please note that some layers may not display at all requested map scales

# Priority Weeds within 5000 m

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels

# Priority Weeds within 5000 m

## Verified Records

| Species | Common Name | Observation Count | Last Recorded |
|---|---|---|---|
| Acacia baileyana | cootamundra wattle | 2 | 20-Mar-2023 |
| Acacia howittii | sticky wattle | 1 | 12-Sep-2024 |
| Billardiera heterophylla | bluebell creeper | 1 | 25-Jul-2023 |
| Dipsacus fullonum | wild teasel | 2 | 31-Jul-2019 |
| Gomphocarpus fruticosus subsp. fruticosus | swanplant | 1 | 08-Feb-2024 |
| Grevillea rosmarinifolia | rosemary grevillea | 2 | 25-Jul-2023 |
| Iris pseudacorus | yellow flag iris | 1 | 14-Dec-2010 |
| Pittosporum undulatum | sweet pittosporum | 5 | 23-Sep-2023 |
| Prunus laurocerasus | cherry laurel | 8 | 17-Jun-2023 |
| Reseda luteola | weld | 1 | 18-Jan-2020 |
| Rumex obtusifolius | broadleaf dock | 1 | 14-Jan-2023 |
| Sporobolus anglicus | common cordgrass | 3 | 13-Feb-2009 |
| Tradescantia fluminensis | wandering creeper | 2 | 25-Dec-2022 |
| Watsonia meriana var. bulbillifera | bulbil watsonia | 3 | 18-Nov-2024 |

## Unverified Records

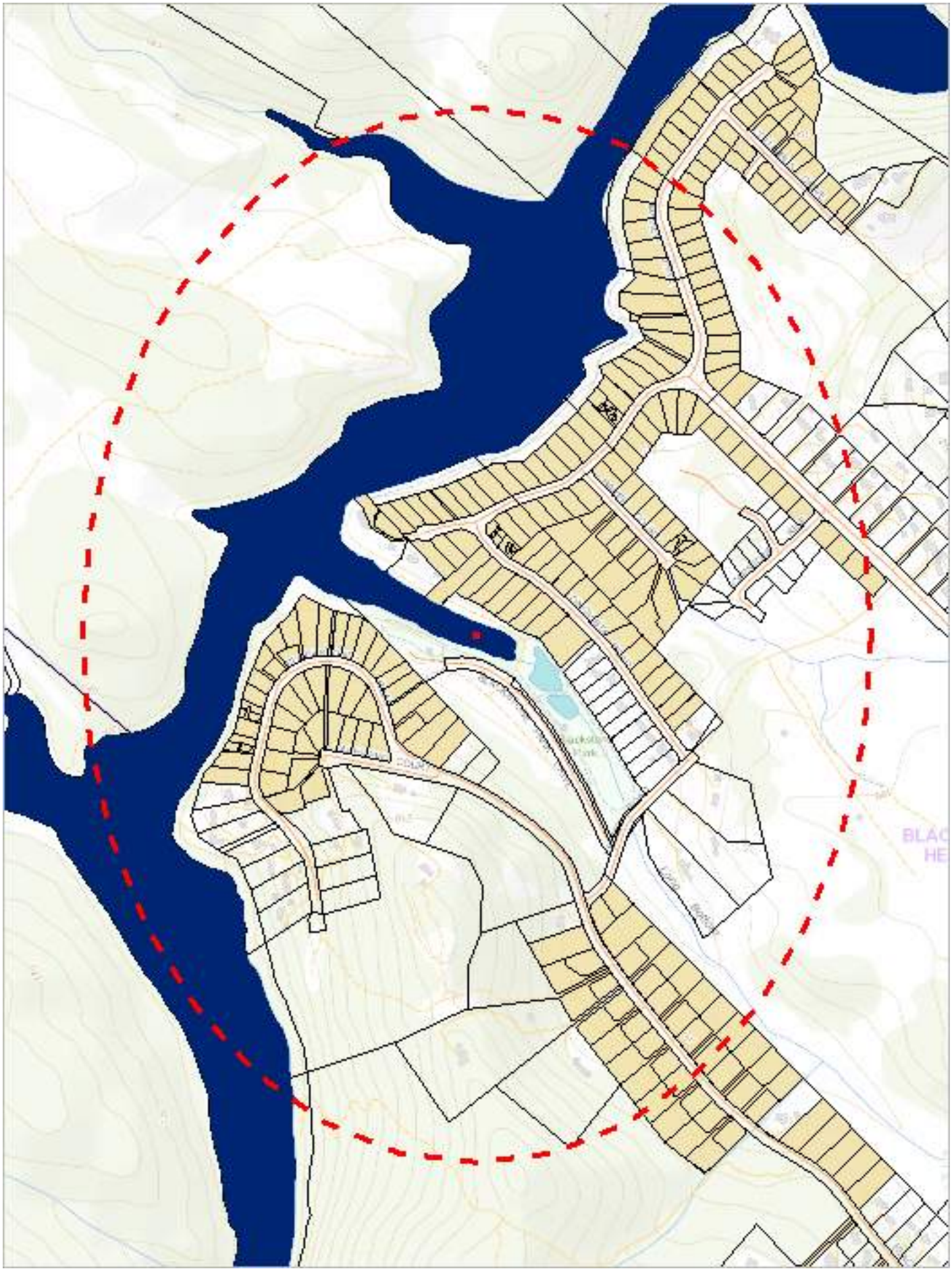
For more information about introduced weed species, please visit the following URL for contact details in your area:

https://www.nre.tas.gov.au/invasive-species/weeds

*** No Geoconservation sites found within 1000 metres. ***

# Acid Sulfate Soils within 1000 metres

506920, 5411781



505113, 5409380

Please note that some layers may not display at all requested map scales

# Acid Sulfate Soils within 1000 metres

Legend: Coastal Acid Sulfate Soils (0 - 20m AHD)

High | Low | Extremely Low

Legend: Inland Acid Sulfate Soils (>20m AHD)

High | Low | Extremely Low

Legend: Marine Subaqueous/Intertidal Acid Sulfate Soil

High (Intertidal) | High (Subtidal)

Legend: Cadastral Parcels

# Acid Sulfate Soils within 1000 metres

| Dataset Name | Acid Sulfate Soil Probability | Acid Sulfate Soil Atlas | Description |
|---|---|---|---|
| Inland Acid Sulfate Soils | Extremely Low | Ck(p4) | Extremely low probability of occurance (1-5% of mapping unit). with occurences in small areas. Subaqueous material in lakes, ASS material and/or MBO. Potential acid sulfate soil (PASS) = sulfidic material (Isbell 1996 p.122). No necessary analytical data are available and classifier has little knowledge or experience with ASS, hence classification is provisional. |

For more information about Acid Sulfate Soils, please contact Land Management Enquiries.

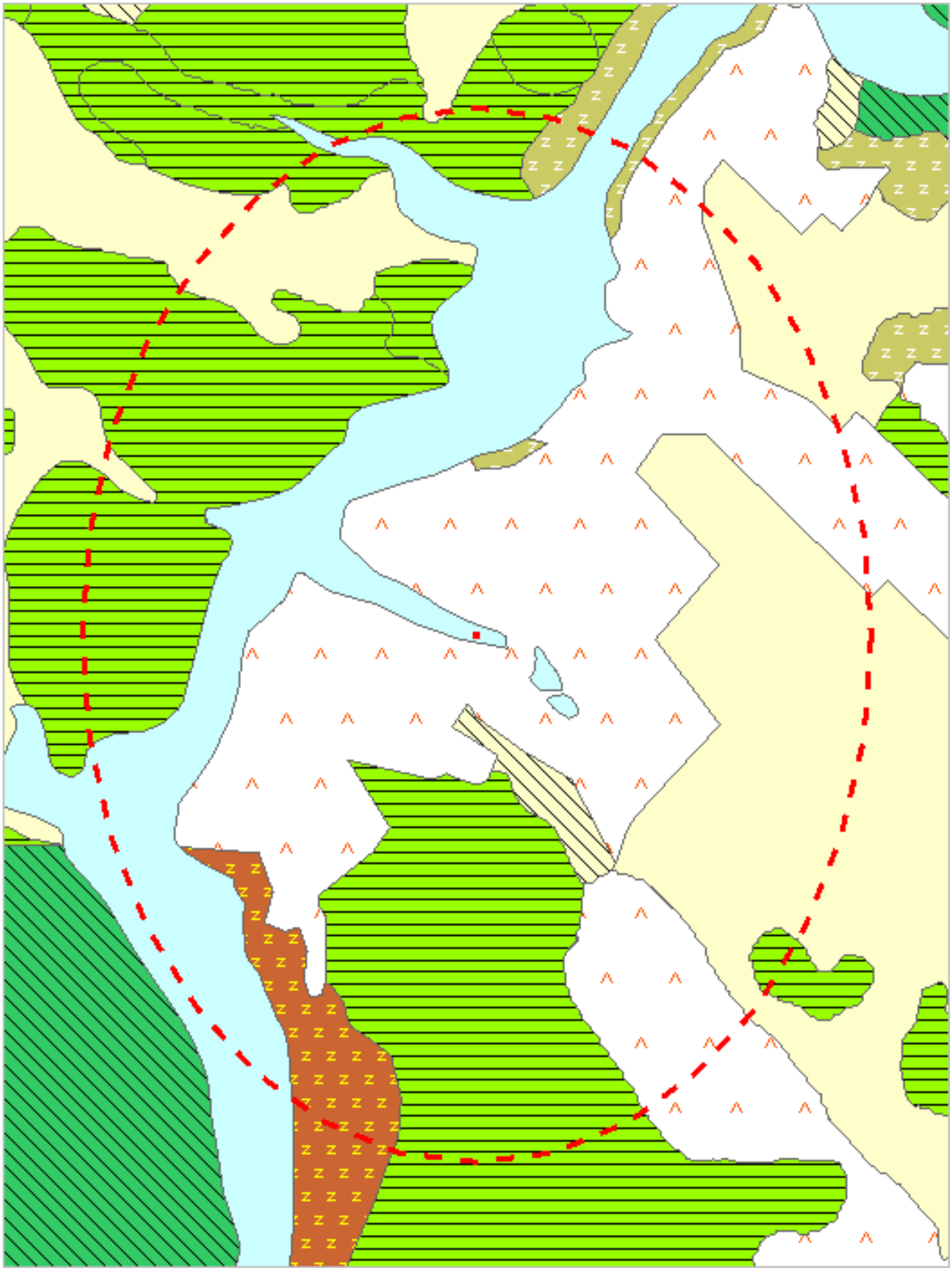
Telephone: (03) 6777 2227

Email: LandManagement.Enquiries@nre.tas.gov.au

Address: 171 Westbury Road, Prospect, Tasmania, Australia, 7250

# TASVEG 4.0 Communities within 1000 metres

506920, 5411781



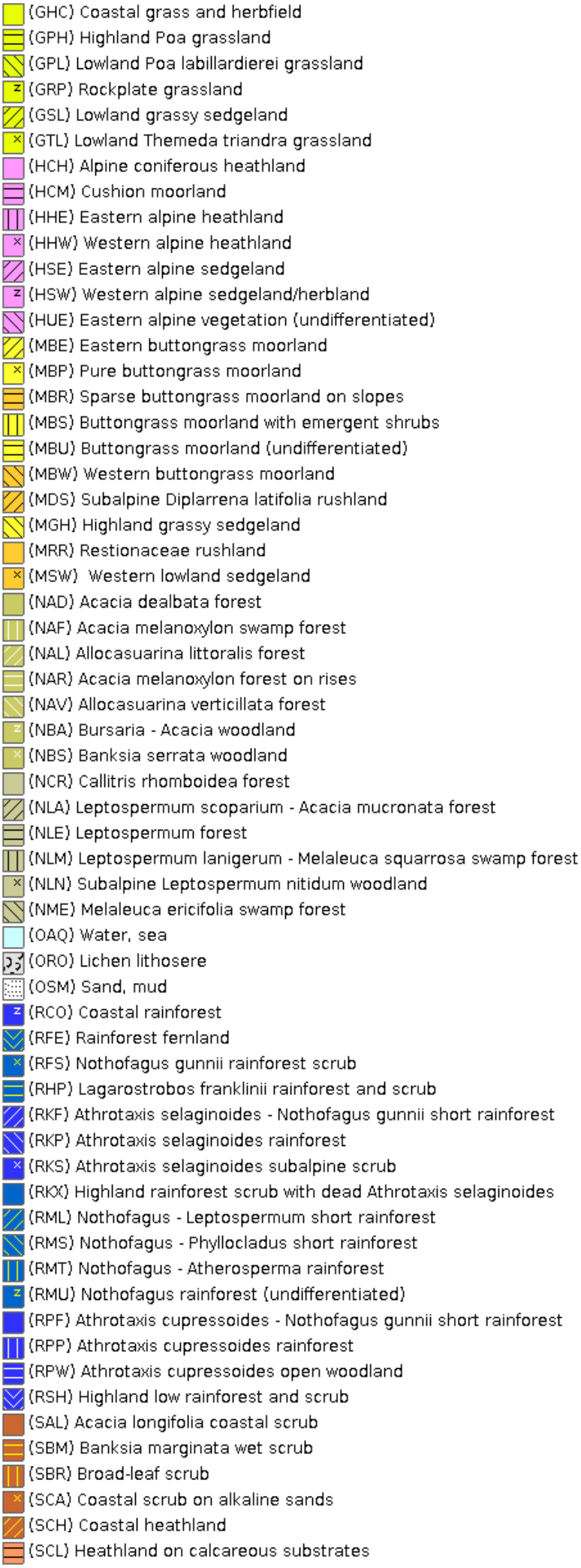
505113, 5409380

Please note that some layers may not display at all requested map scales

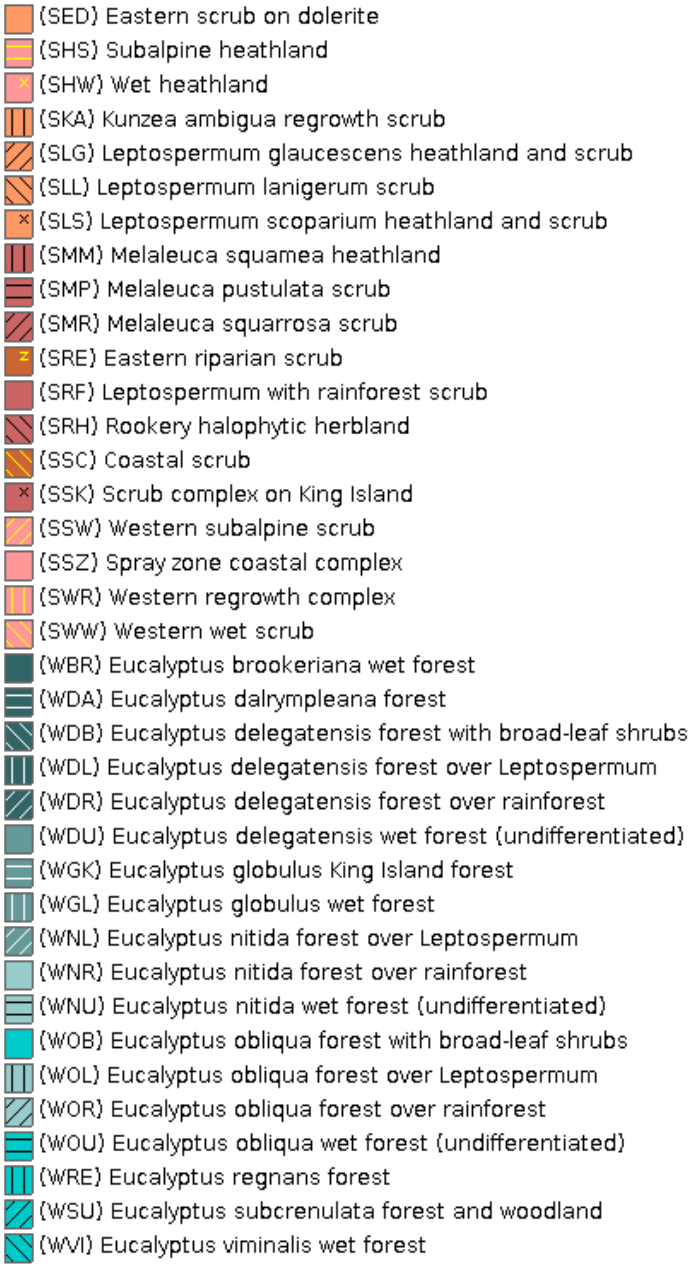
# TASVEG 4.0 Communities within 1000 metres

Legend: TASVEG 4.0

# TASVEG 4.0 Communities within 1000 metres



# TASVEG 4.0 Communities within 1000 metres




Legend: Cadastral Parcels

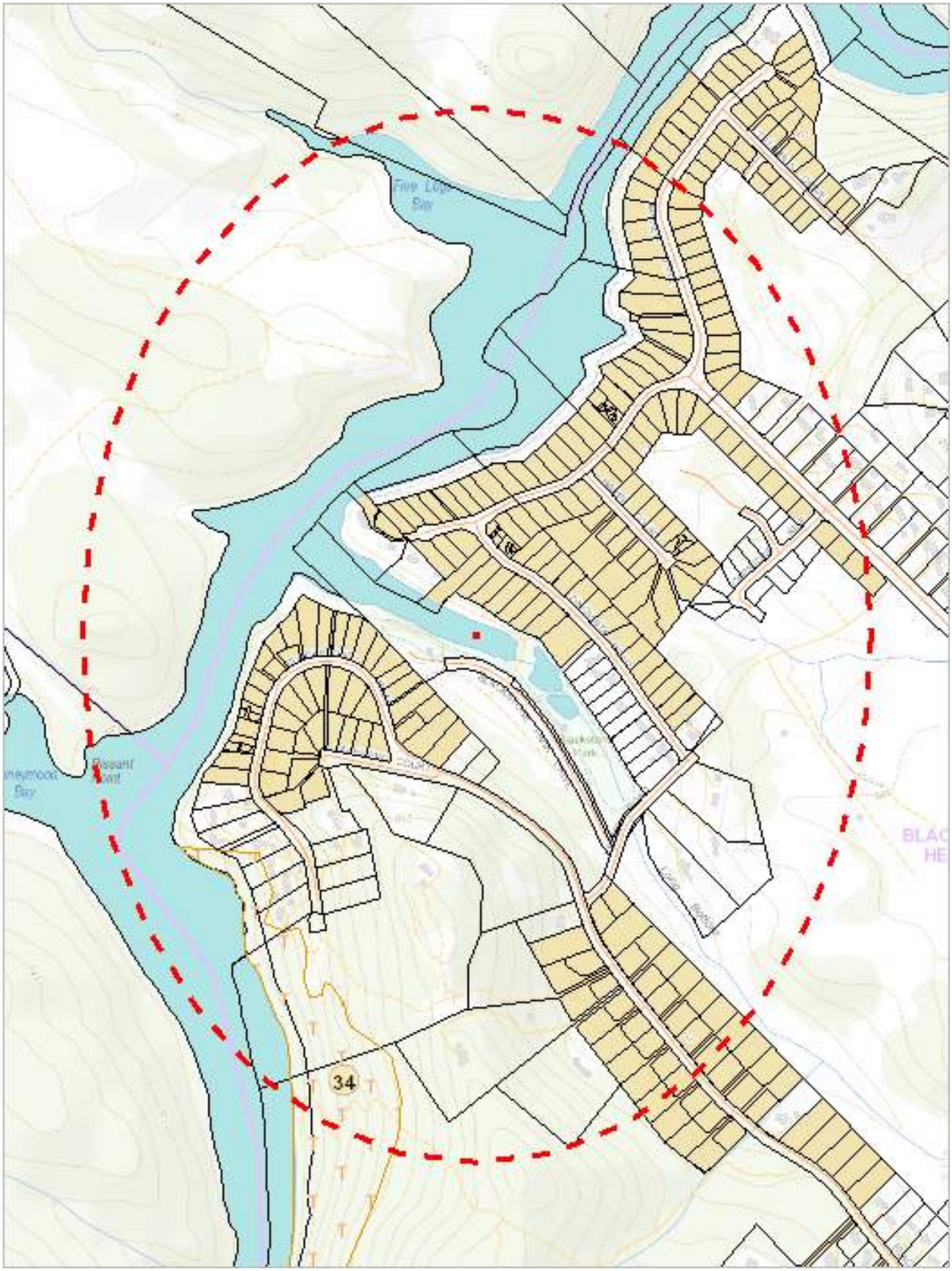
# TASVEG 4.0 Communities within 1000 metres

| Code | Community | Canopy Tree |
|---|---|---|
| DAD | (DAD) Eucalyptus amygdalina forest and woodland on dolerite | |
| FAG | (FAG) Agricultural land | |
| FRG | (FRG) Regenerating cleared land | |
| FUR | (FUR) Urban areas | |
| NBA | (NBA) Bursaria - Acacia woodland | |
| OAQ | (OAQ) Water, sea | |
| SRE | (SRE) Eastern riparian scrub | |

For more information contact: Coordinator, Tasmanian Vegetation Monitoring and Mapping Program.
Telephone: (03) 6165 4320
Email: TVMMPSupport@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

# Threatened Communities (TNVC 2020) within 1000 metres

506920, 5411781




505113, 5409380

Please note that some layers may not display at all requested map scales

# Threatened Communities (TNVC 2020) within 1000 metres

Legend: Threatened Communities

- 1 - Alkaline pans
- 2 - Allocasuarina littoralis forest
- 3 - Athrotaxis cupressoides/Nothofagus gunnii short rainforest
- 4 - Athrotaxis cupressoides open woodland
- 5 - Athrotaxis cupressoides rainforest
- 6 - Athrotaxis selaginoides/Nothofagus gunnii short rainforest
- 7 - Athrotaxis selaginoides rainforest
- 8 - Athrotaxis selaginoides subalpine scrub
- 9 - Banksia marginata wet scrub
- 10 - Banksia serrata woodland
- 11 - Callitris rhomboidea forest
- 13 - Cushion moorland
- 14 -Eucalyptus amygdalina forest and woodland on sandstone
- 15 - Eucalyptus amygdalina inland forest and woodland on cainozoic deposits
- 16 - Eucalyptus brookeriana wet forest
- 17 - Eucalyptus globulus dry forest and woodland
- 18 - Eucalyptus globulus King Island forest
- 19 - Eucalyptus morrisbyi forest and woodland
- 20 - Eucalyptus ovata forest and woodland
- 21 - Eucalyptus risdonii forest and woodland
- 22 - Eucalyptus tenuiramis forest and woodland on sediments
- 23 - Eucalyptus viminalis - Eucalyptus globulus coastal forest and woodland
- 24 - Eucalyptus viminalis Furneaux forest and woodland
- 25 - Eucalyptus viminalis wet forest
- 26 - Heathland on calcareous substrates
- 27 - Heathland scrub complex at Wingaroo
- 28 - Highland grassy sedgeland
- 29 - Highland Poa grassland
- 30 - Melaleuca ericifolia swamp forest
- 31 - Melaleuca pustulata scrub
- 32 - Notelaea - Pomaderris - Beyeria forest
- 33 - Rainforest fernland
- 34 - Riparian scrub
- 35 - Seabird rookery complex
- 36 - Sphagnum peatland
- 36A - Spray zone coastal complex
- 37 - Subalpine Diplarrena latifolia rushland
- 38 - Subalpine Leptospermum nitidum woodland
- 39 - Wetlands

Legend: Cadastral Parcels

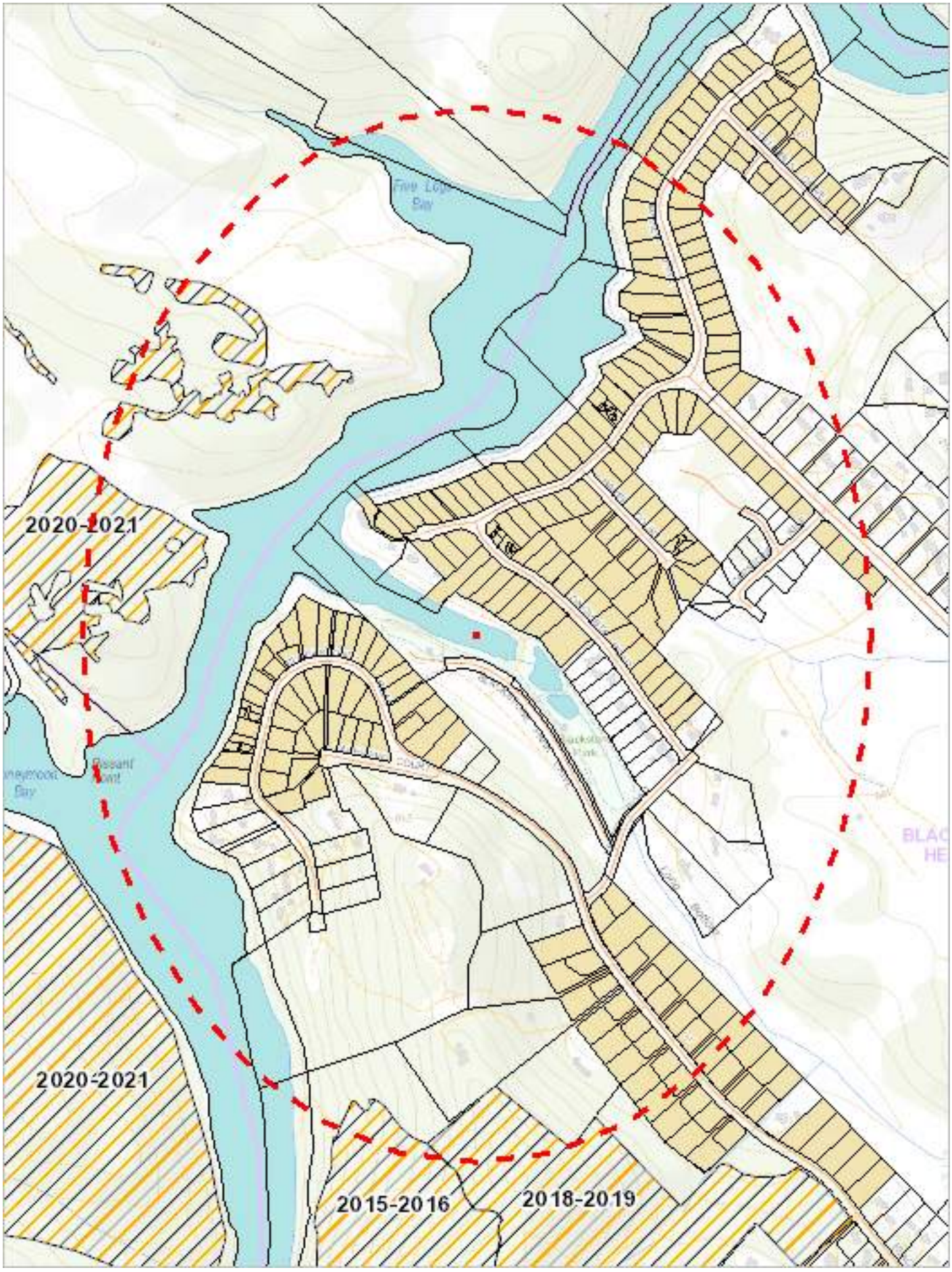
# Threatened Communities (TNVC 2020) within 1000 metres

| Scheduled Community Id | Scheduled Community Name |
|---|---|
| 34 | Riparian scrub |

For more information contact: Coordinator, Tasmanian Vegetation Monitoring and Mapping Program.
Telephone: (03) 6165 4320
Email: TVMMPSupport@nre.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

# Fire History (All) within 1000 metres

506920, 5411781




505113, 5409380

Please note that some layers may not display at all requested map scales

# Fire History (All) within 1000 metres

Legend: Fire History All

Bushfire-Unknown Category

Bushfire

Completed Planned Burn

Legend: Cadastral Parcels

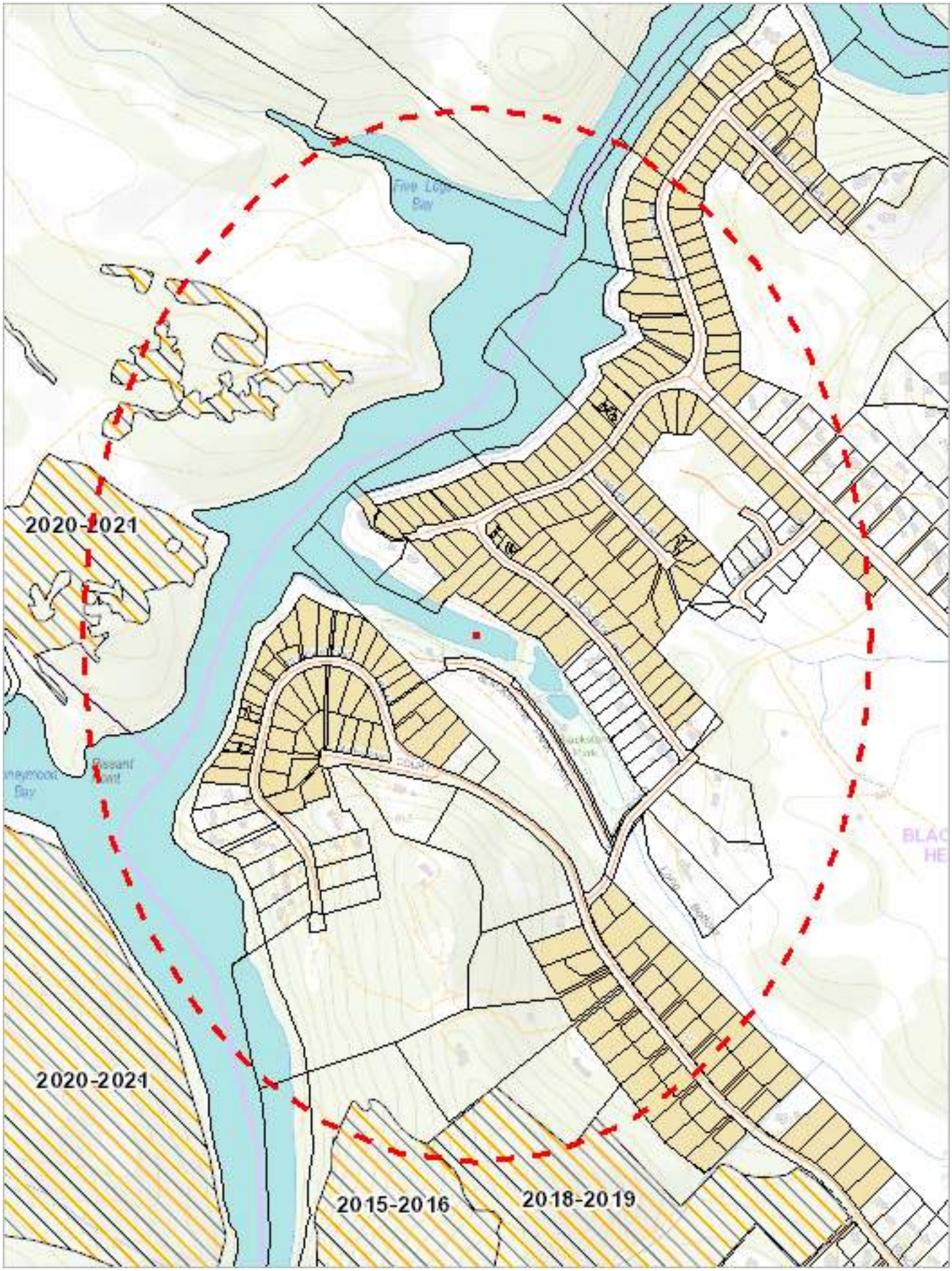
# Fire History (All) within 1000 metres

| Incident Number | Fire Name | Ignition Date | Fire Type | Ignition Cause | Fire Area (HA) |
|---|---|---|---|---|---|
| TTT504BU | Travellers Rest TR_04AP | 17-Apr-2016 | Planned Burn | Planned Burn | 55.27153532 |
| TTT506BU | Blackstone Heights West | 15-Nov-2018 | Planned Burn | Planned Burn | 61.1663551 |
| TTW302BU | Blackstone Heights - Honeymoon Bay | 01-May-2021 | Planned Burn | Planned Burn | 13.76679391 |

For more information about Fire History, please contact the Manager Community Protection Planning, Tasmania Fire Service.
Telephone: 1800 000 699
Email: planning@fire.tas.gov.au
Address: cnr Argyle and Melville Streets, Hobart, Tasmania, Australia, 7000

# Fire History (Last Burnt) within 1000 metres

506920, 5411781




505113, 5409380

Please note that some layers may not display at all requested map scales

# Fire History (Last Burnt) within 1000 metres

Legend: Fire History Last

Bushfire-Unknown category

Bushfire

Completed Planned Burn

Legend: Cadastral Parcels

# Fire History (Last Burnt) within 1000 metres

| Incident Number | Fire Name | Ignition Date | Fire Type | Ignition Cause | Fire Area (HA) |
|---|---|---|---|---|---|
| TTT504BU | Travellers Rest TR_04AP | 17-Apr-2016 | Planned Burn | Planned Burn | 55.27153532 |
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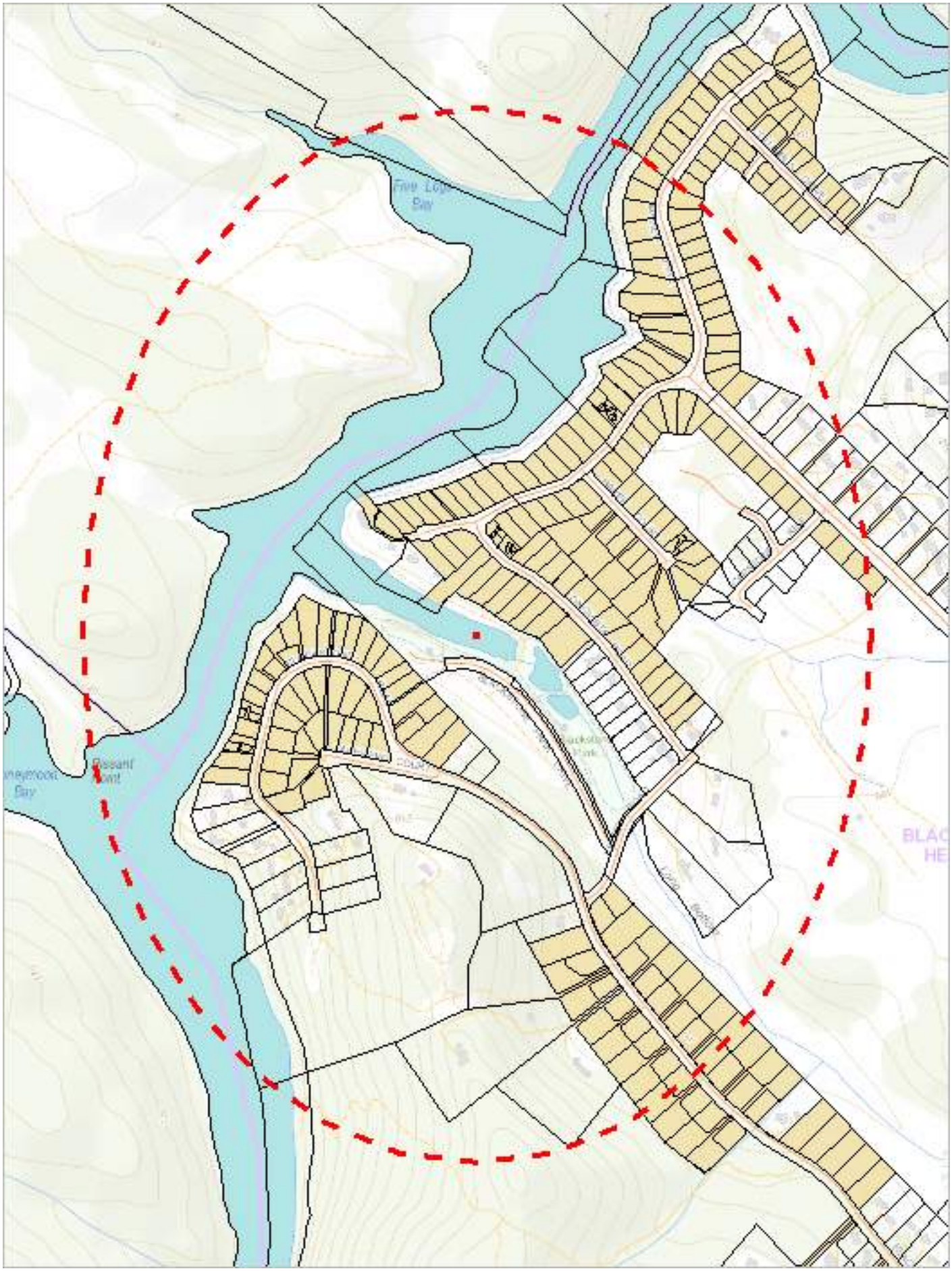
For more information about Fire History, please contact the Manager Community Protection Planning, Tasmania Fire Service.
Telephone: 1800 000 699
Email: planning@fire.tas.gov.au
Address: cnr Argyle and Melville Streets, Hobart, Tasmania, Australia, 7000

*** No reserves found within 1000 metres ***

# Known biosecurity risks within 1000 meters

506920, 5411781



505113, 5409380

Please note that some layers may not display at all requested map scales

# Known biosecurity risks within 1000 meters

Legend: Biosecurity Risk Species

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Hygiene infrastructure

- Location Point Verified
- Location Point Unverified
- Location Line Verified
- Location Line Unverified
- Location Polygon Verified
- Location Polygon Unverified

Legend: Cadastral Parcels

# Known biosecurity risks within 1000 meters

## Verified Species of biosecurity risk

No verified species of biosecurity risk found within 1000 metres

## Unverified Species of biosecurity risk

No unverified species of biosecurity risk found within 1000 metres

## Generic Biosecurity Guidelines

The level and type of hygiene protocols required will vary depending on the tenure, activity and land use of the area. In all cases adhere to the land manager's biosecurity (hygiene) protocols. As a minimum always Check / Clean / Dry (Disinfect) clothing and equipment before trips and between sites within a trip as needed https://www.nre.tas.gov.au/invasive-species/weeds/weed-hygiene/keeping-it-clean-a-tasmanian-field-hygiene-manual

On Reserved land, the more remote, infrequently visited and undisturbed areas require tighter biosecurity measures.

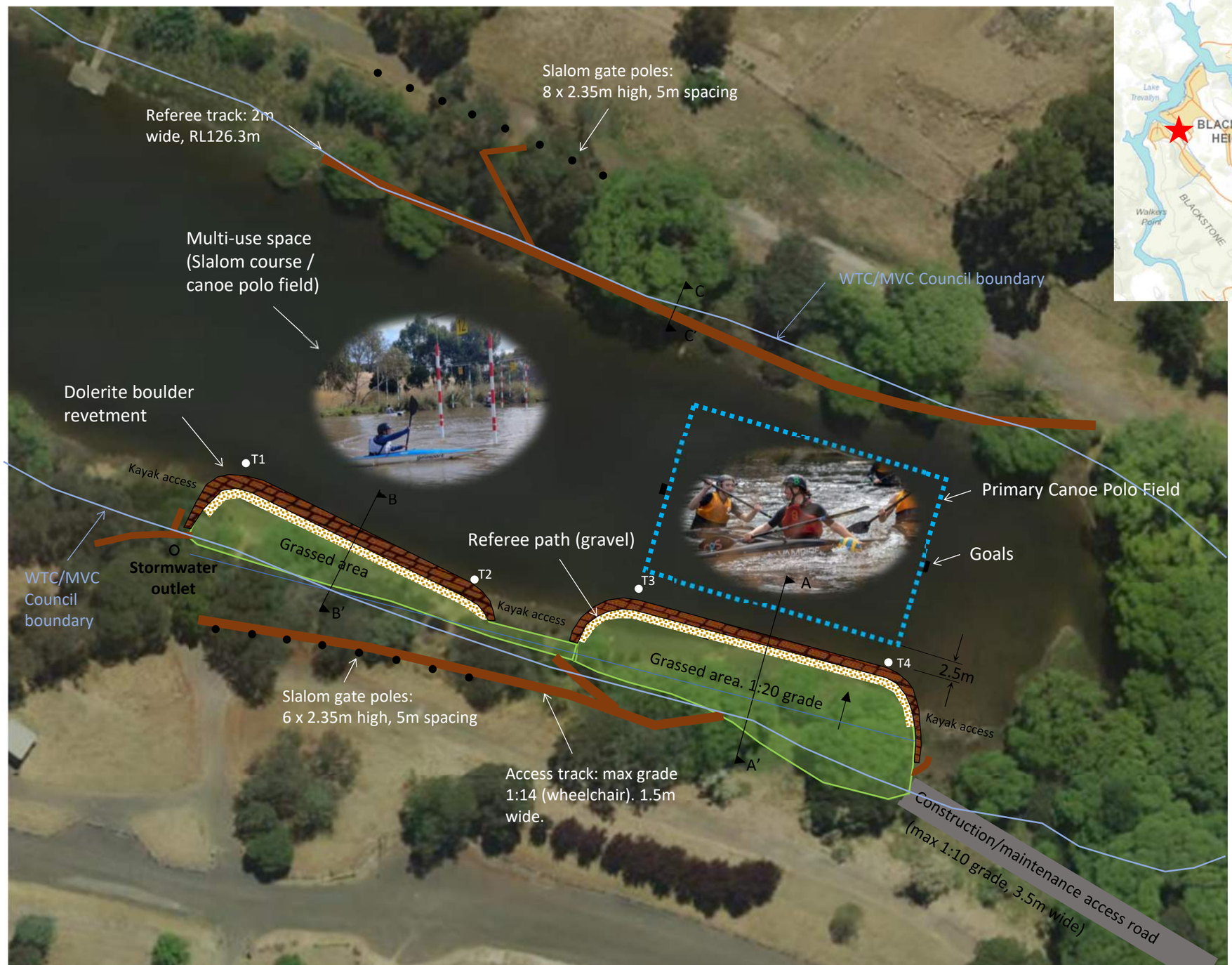
In addition, where susceptible species and communities are known to occur, tighter biosecurity measures are required.

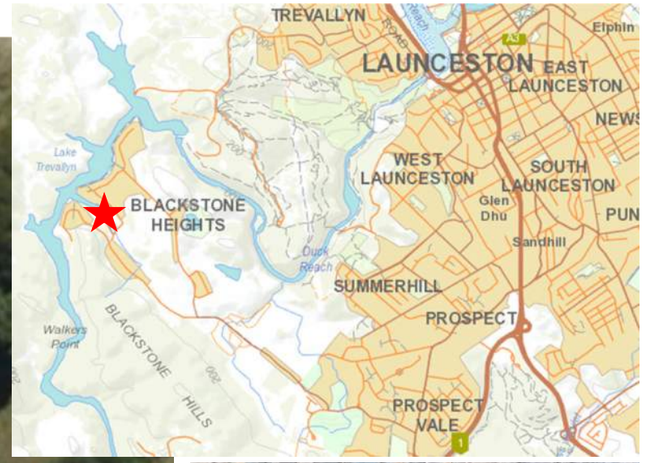
Apply controls relevant to the area / activity:

- Don't access sites infested with pathogen or weed species unless absolutely necessary. If it is necessary to visit, adopt high level hygiene protocols.
- Consider not accessing non-infested sites containing known susceptible species / communities. If it is necessary to visit, adopt high level hygiene protocols.
- Don't undertake activities that might spread pest / pathogen / weed species such as deliberately moving soil or water between areas.
- Modify / restrict activities to reduce the chance of spreading pest / pathogen / weed species e.g. avoid periods when weeds are seeding, avoid clothing/equipment that excessively collects soil and plant material e.g. Velcro, excessive tread on boots.
- Plan routes to visit clean (uninfested) sites prior to dirty (infested) sites. Do not travel through infested areas when moving between sites.
- Minimise the movement of soil, water, plant material and hitchhiking wildlife between areas by using the Check / Clean / Dry (Disinfect when drying is not possible) procedure for all clothing, footwear, equipment, hand tools and vehicles https://www.nre.tas.gov.au/invasive-species/weeds/weed-hygiene
- Neoprene and netting can take 48 hours to dry, use non-porous gear wherever possible.
- Use walking track boot wash stations where available.
- Keep a hygiene kit in the vehicle that includes a scrubbing brush, boot pick, and disinfectant https://www.nre.tas.gov.au/invasive-species/weeds/weed-hygiene/keeping-it-clean-a-tasmanian-field-hygiene-manual
- Dispose of all freshwater away from natural water bodies e.g. do not empty water into streams or ponds.
- Dispose of used disinfectant ideally in town though a treatment or septic system. Always keep disinfectant well away from natural water systems.
- Securely contain any high risk pest / pathogen / weed species that must be collected and moved e.g. biological samples.

## Hygiene Infrastructure

No known hygiene infrastructure found within 1000 metres





**Toe of embankment coordinates (MGA94)**

T1: 505956.1mE 5410587.2mN
T2: 505987.6mE 5410570.7mN
T3: 506007.0mE 5410573.0mN
T4: 506040.5mE, 5410564.0mN

# Site Layout – Aerial Photo

Blackstone Paddlesports Park

Drawn by: G Macqueen, BE ME Geotechnical
Checked by: J McCausland, BE Civil

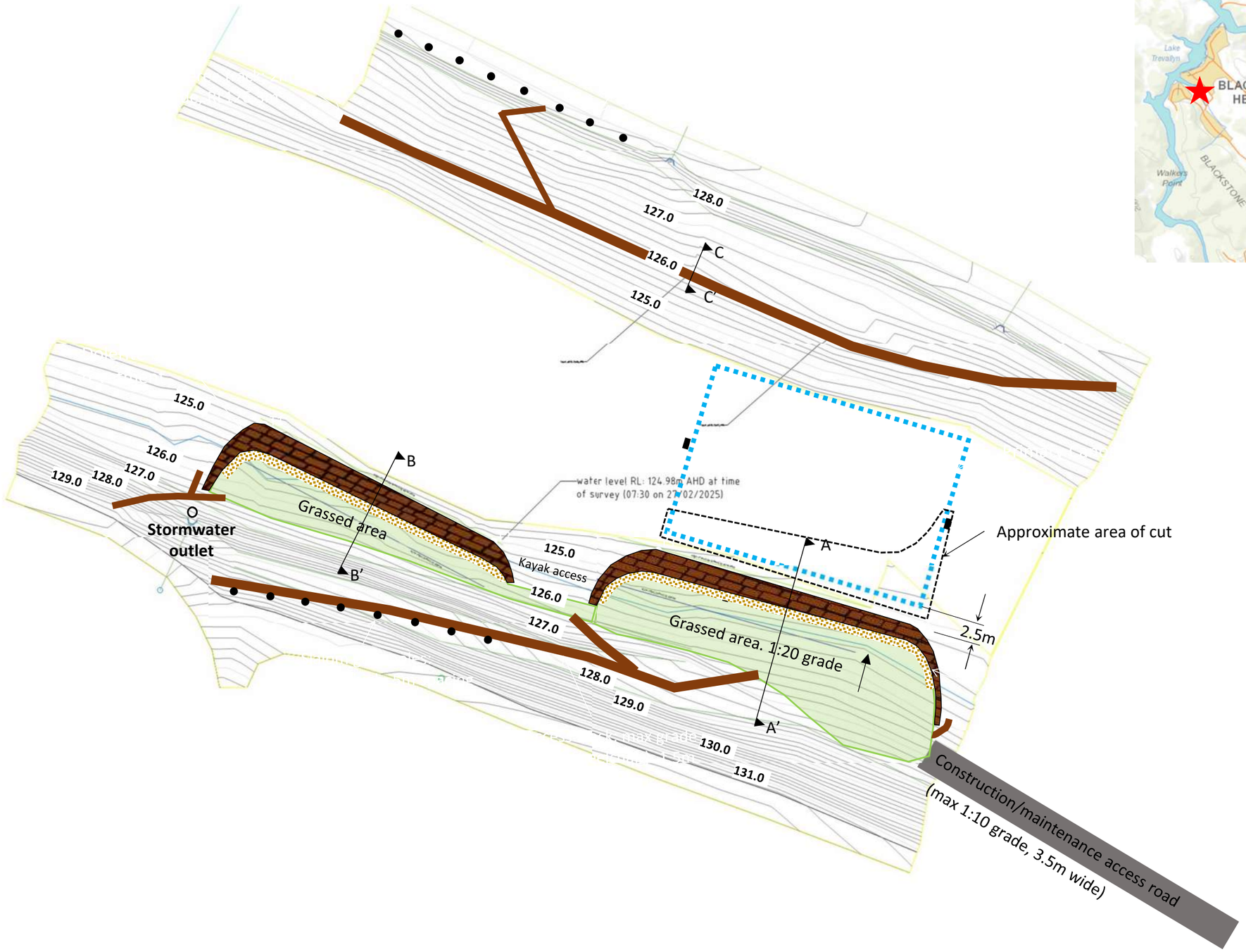
Version: V5

N

Scale

10 m






**Toe of embankment coordinates (MGA94)**

T1: 505956.1mE 5410587.2mN
T2: 505987.6mE 5410570.7mN
T3: 506007.0mE 5410573.0mN
T4: 506040.5mE, 5410564.0mN

# Site Layout - Contours

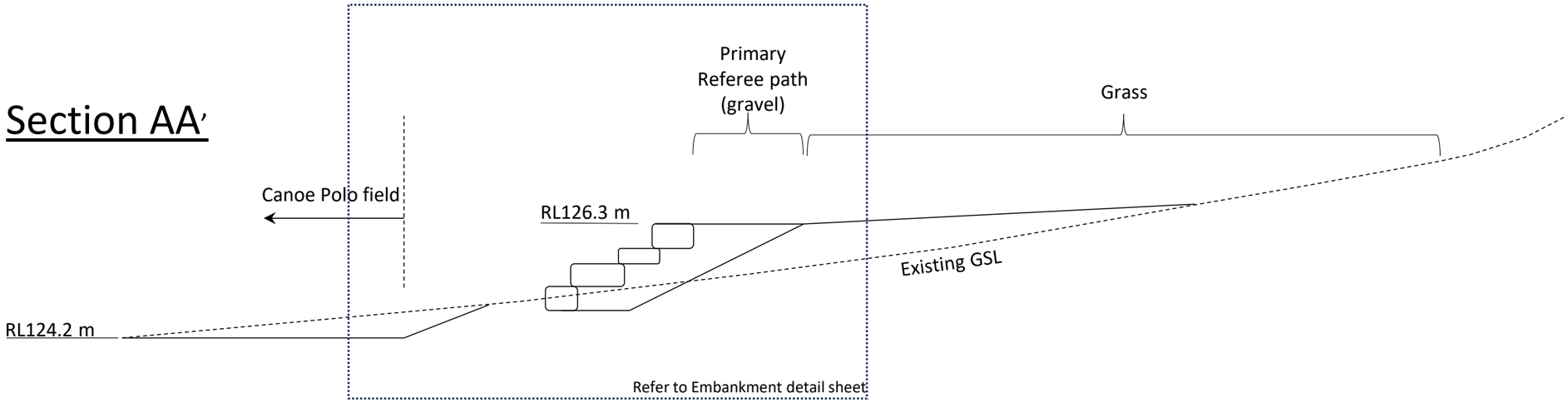
Blackstone Paddlesports Park

Drawn by: G Macqueen, BE ME Geotechnical
Checked by: J McCausland, BE Civil

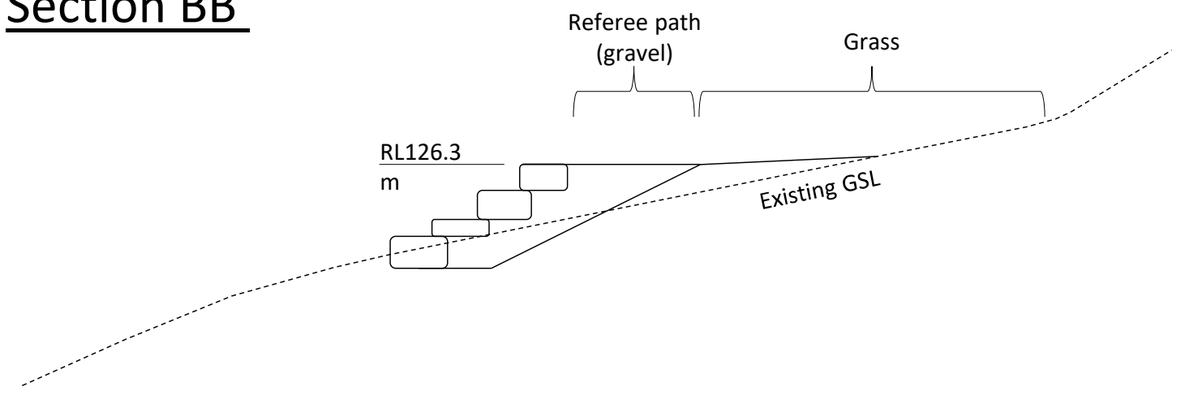
N

Scale
10 m

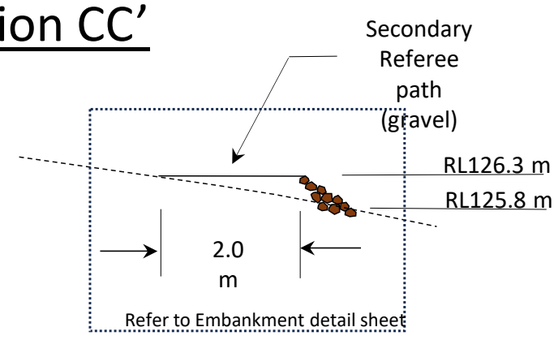
## Section AA’




## Section BB’




## Section CC’




# Embankment Cross sections

**Blackstone Paddlesports Park**

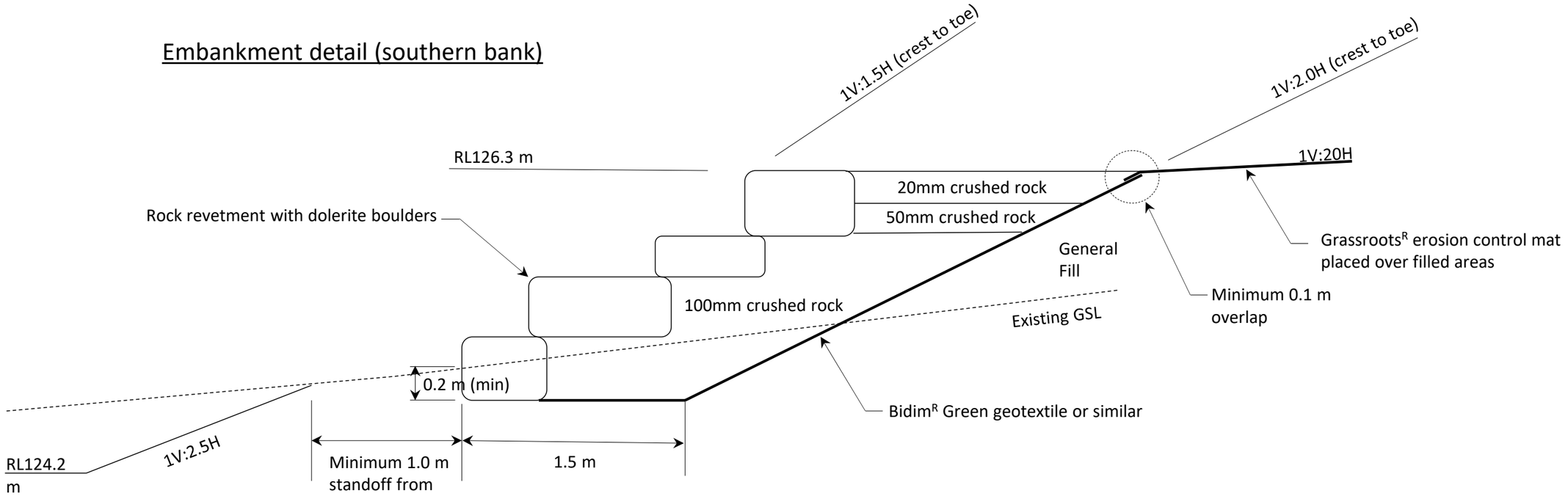
Drawn by: G Macqueen, BE ME Geotechnical
Checked by: J McCausland, BE Civil

Version: V4

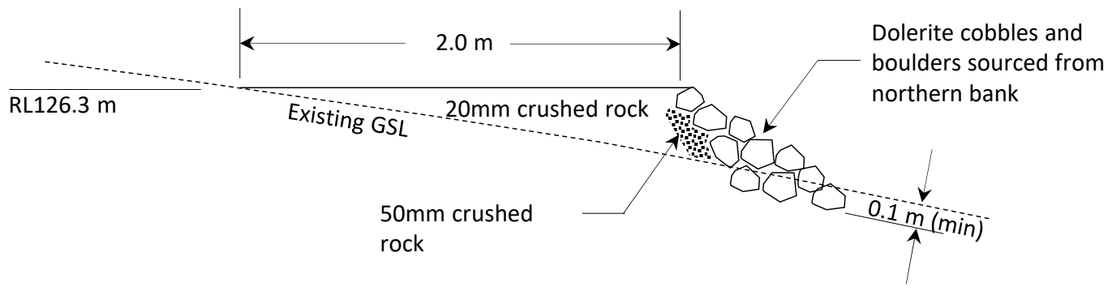
**Scale**

0 1.0m 10.0m

## Embankment detail (southern bank)




## Secondary referee track detail (northern bank)




# Embankment detail

Blackstone Paddlesports Park

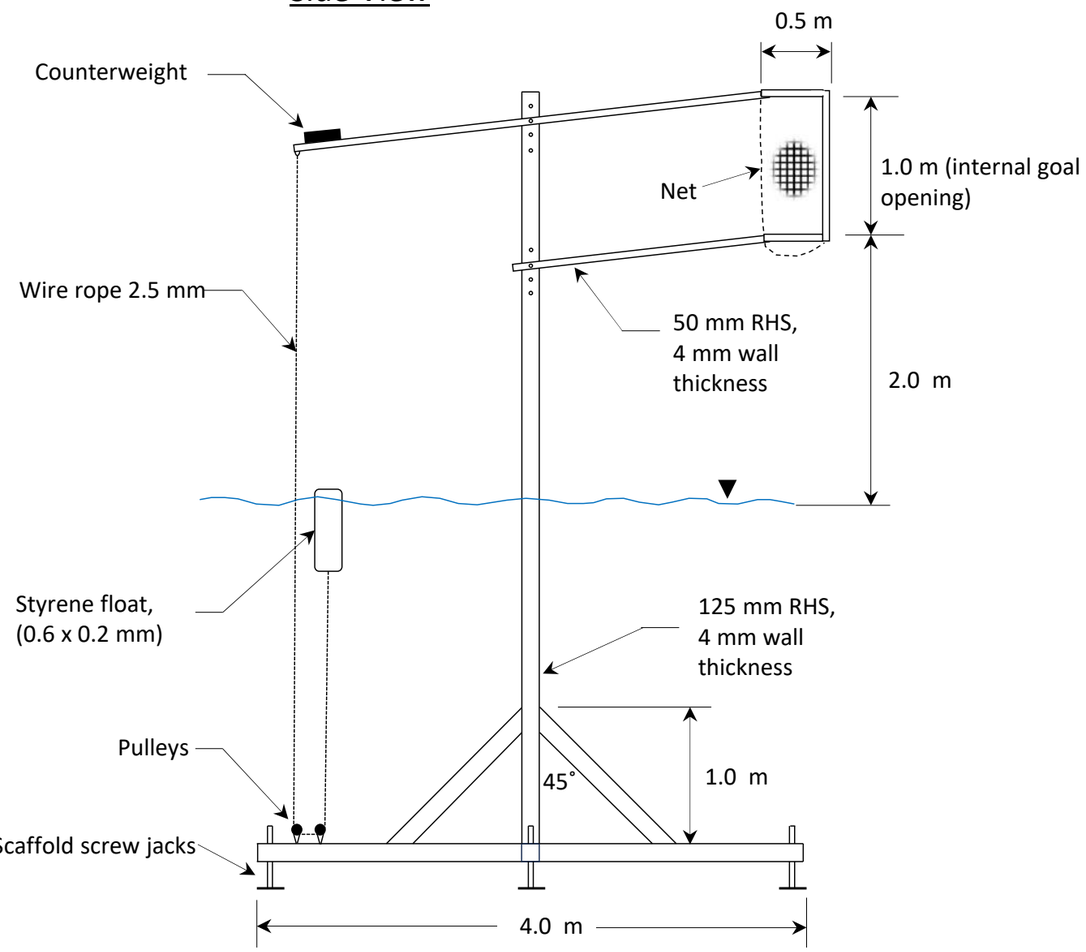
Drawn by: G Macqueen, BE ME Geotechnical
Checked by J McCausland, BE Civil

Version: V4

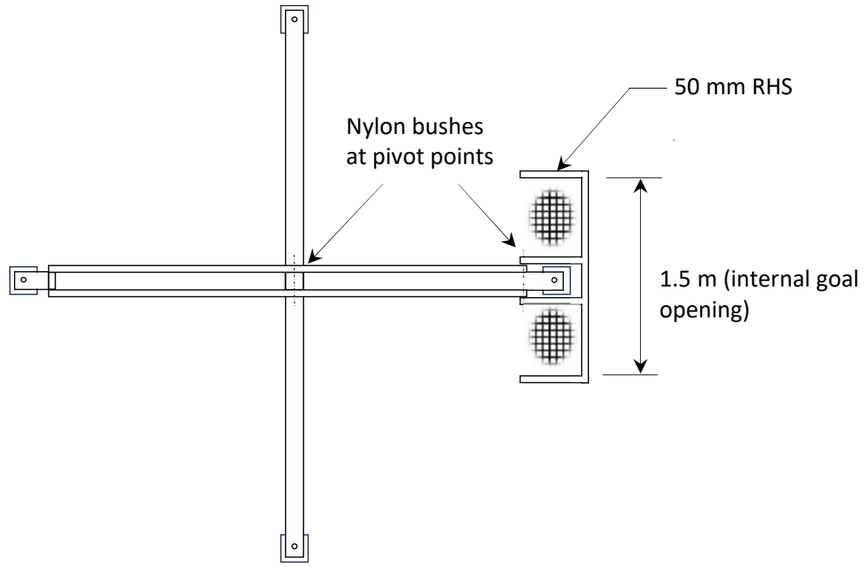
**Scale**

0 1.0m

## Side View




## Plan View




## Notes

- The goals are to remain mounted vertical, with the bottom edge of the goal opening 2.0 m above the water level during changes in water level.
- All steel elements to be hot-dip galvanised.
- The front face of the frame is to be red and white striped, each stripe 0.2 m in length.
- Total height of structures depends on installation location (TBA)

# Canoe Polo Goals

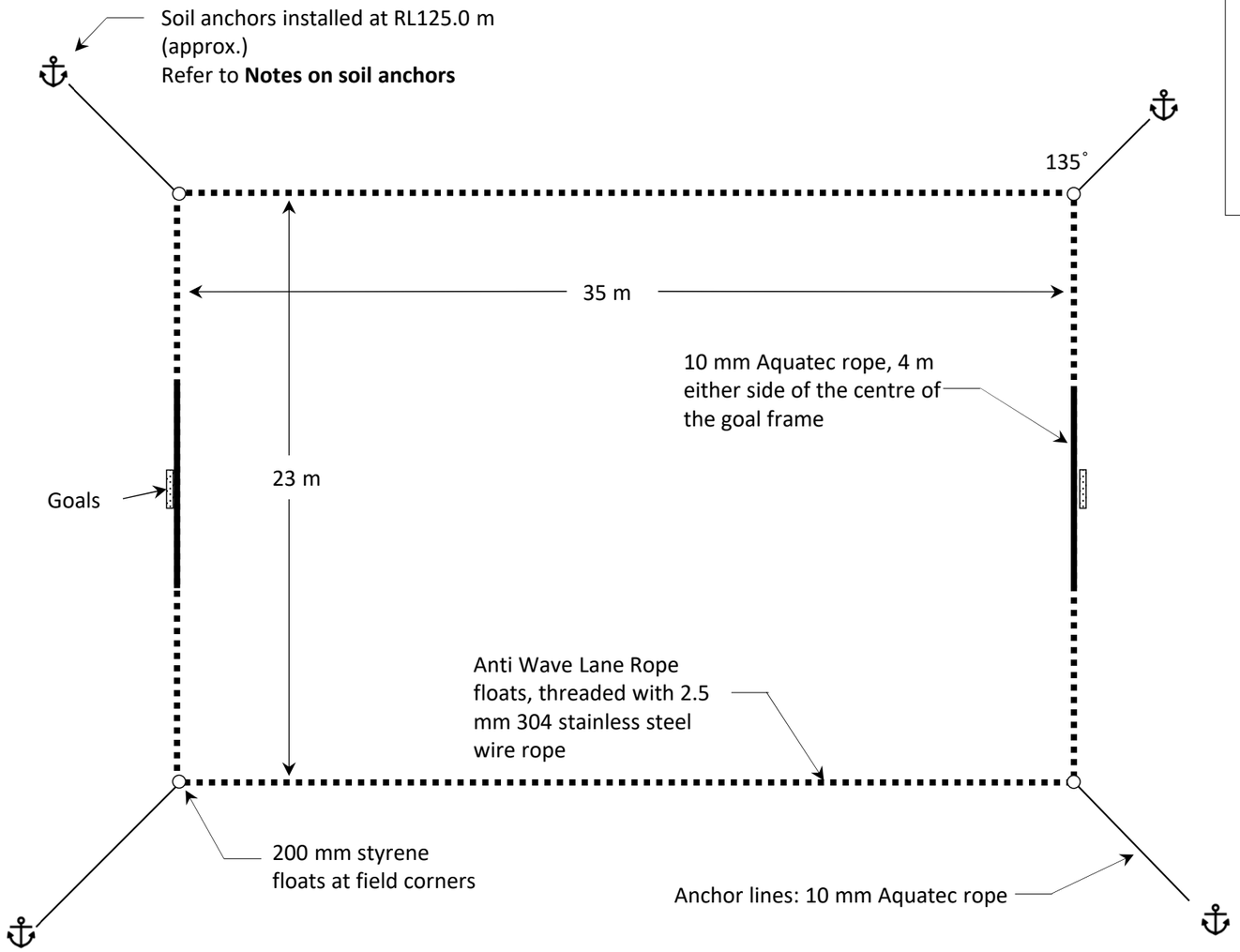
**Blackstone Paddlesports Park**

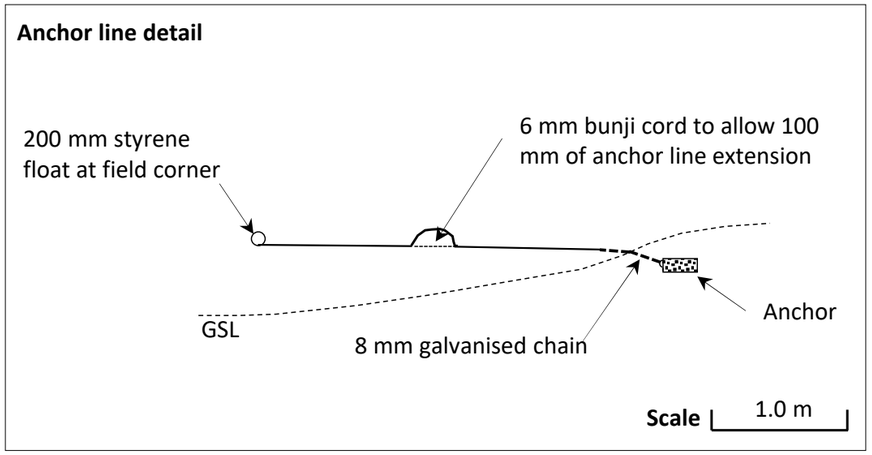
Drawn by: G Macqueen, BE ME Geotechnical
Checked by: J McCausland, BE Civil

Version: V4

**Scale**

1.0 m




**Notes on soil anchors:**

**Soil > 0.3m depth**

Soil anchors to be fabricated from a block of concrete with dimensions 0.25 m long x 0.25 m wide x 0.1 m thick, with an 8 mm galvanised U-bolt set into the concrete. The resulting anchor should be cast or buried in soil, with at least 0.2m soil cover.

**Soil < 0.3 m depth**

In soils less than 0.3 m depth, anchors should be set into the weathered dolerite. Anchors may be formed by the excavation of a recessed socket into the rock, followed by the grouting of a U-bolt into holes drilled into the rock. The U-bolt may be formed from a short length of galvanised steel reinforcing. The recessed socket should be filled with grout to conceal the U-bolt.

# Canoe Polo Field Layout

## Blackstone Paddlesports Park

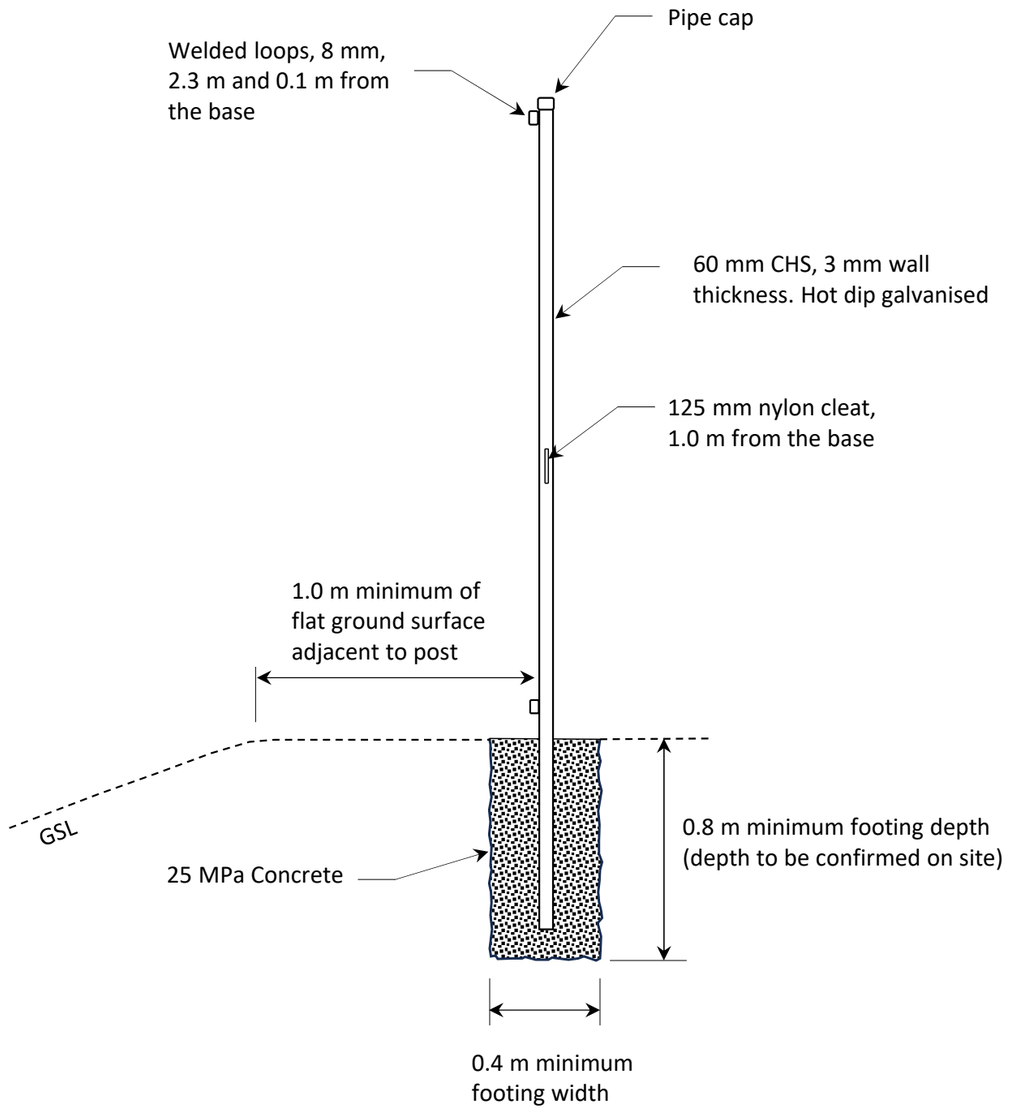
Drawn by: G Macqueen, BE ME Geotechnical
Checked by: J McCausland, BE Civil

Version: V4

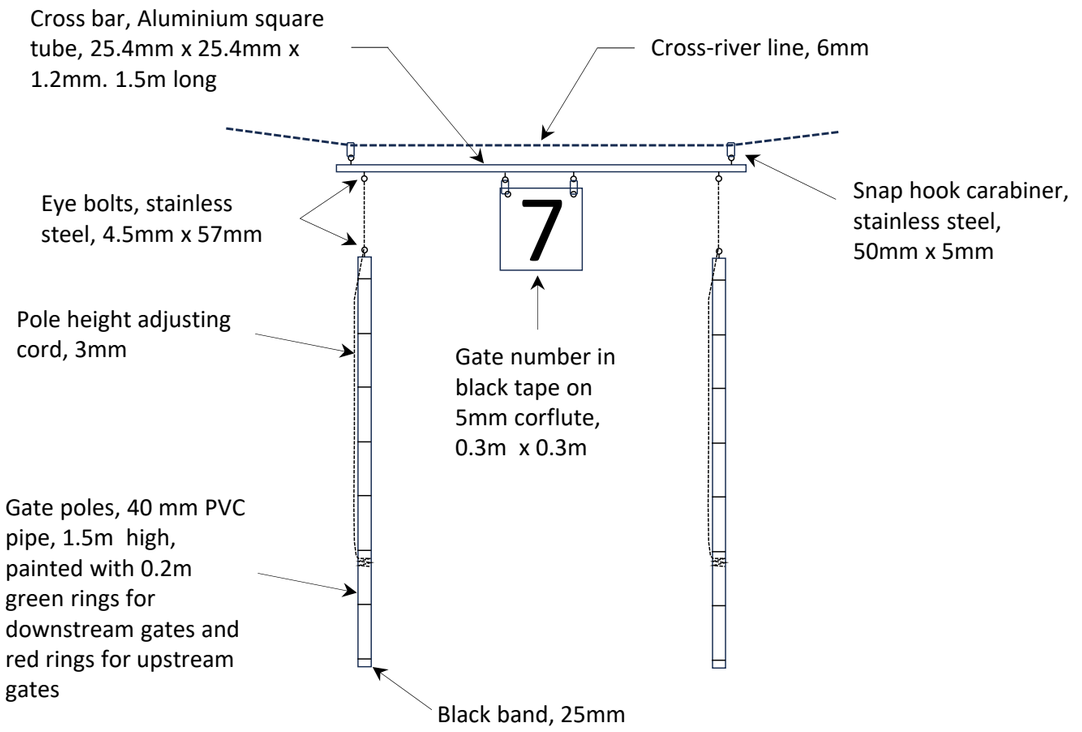
**Scale**

10.0 m

## Slalom Course Post




## Slalom Gate




# Slalom Course

**Blackstone Paddlesports Park**

Drawn by: G Macqueen, BE ME Geotechnical
Checked by: J McCausland, BE Civil

Version: V6

**Scale**

1.0 m

# Blackstone Paddlesports Park

## Design Report

**April 2025**

# Table of contents

# 1. Executive Summary

The Blackstone Paddlesports Park Design Report presents a comprehensive plan for the development of a specialised water sports facility located on an inlet of Lake Trevallyn in Blackstone Heights. This facility is designed to meet the growing needs of the paddling community, with a focus on canoe polo and slalom disciplines.

The proposed development transforms an underutilised section of Blackstone Park into a purpose-built venue capable of hosting training sessions, games, and competitions. Key components include a full-size canoe polo field with innovative bottom-mounted goals that automatically adjust to Lake Trevallyn's variable water levels, a customizable canoe slalom course with eight cross-river lines, and carefully designed access points and viewing areas.

The design process has been guided by universal design principles to ensure accessibility for users of all abilities. This approach is reflected in the site's landscape features, equipment specifications, and operational considerations. Technical challenges, particularly related to the variable lake levels, typically managed between 125.0 m and 126.1 m (Hydro datum), and site geotechnical conditions, have been addressed through purpose-specific engineering solutions.

This report details the technical specifications, design rationale, and implementation requirements for the project, developed in consultation with Tasmanian paddling clubs and with reference to International Canoe Federation standards. The Blackstone Paddlesports Park represents a significant enhancement to Tasmania's paddle sport infrastructure and will provide new opportunities for participation, training, competition, and growth in paddle sports.

# 2. Project Overview

The Blackstone Paddlesports Park project represents a collaborative initiative between the Tamar Canoe Club and Meander Valley Council, also supported MAST and Hydro Tasmania, to develop a dedicated paddle sports facility at Blackstone Park in Launceston. This project addresses the current lack of purpose-built paddle sport infrastructure in northern Tasmania and aims to create a regional hub for canoe polo and slalom activities.

The proposed development is located on a narrow eastern inlet of Lake Trevallyn. It will transform what is currently an unutilised water body into a versatile paddle sports venue. The primary components include a competition-standard canoe polo field with innovative goal systems, a configurable slalom training course, and associated land-based infrastructure including referee positions, spectator areas, and water access points.

Key stakeholders in this project include:

- Tamar Canoe Club, the primary user group and project initiator
- Meander Valley Council, the land manager and planning authority for Blackstone Park
- West Tamar Council, the planning authority for the inlet on Lake Trevallyn
- Hydro Tasmania, responsible for management of Lake Trevallyn water levels
- Marine and Safety Tasmania, responsible for water safety on Lake Trevallyn
- Residents and other recreational users of Blackstone Park

The project has been developed to accommodate the unique site constraints, particularly the variable water levels in Lake Trevallyn, which typically fluctuate between 125.0 m and 126.1 m (Hydro datum). This variability has informed fundamental design decisions, particularly regarding goal systems, embankment height and protection, and access points.

The facility has been designed to host training sessions, local competitions, and state-level events, with the potential to accommodate national-level competitions with temporary supplementary infrastructure.

This project will significantly enhance paddle sport opportunities in the region, providing a dedicated venue for training and competition that will support athlete development, club growth, and increased community participation in water-based recreation.

# 3. Design Objectives and Requirements

## 3.1 Introduction

The Blackstone Paddlesports Park has been conceptualised to address the specific needs of the paddling community in northern Tasmania while enhancing the recreational value of Blackstone Park. This section outlines the core design objectives and requirements that have guided the development of this facility.

The design approach balances technical requirements for competitive paddle sports, site constraints, universal accessibility principles, and integration with the existing park environment. Through consultation with stakeholders, priority features and functionality have been identified.

The requirements outlined here establish the framework against which design decisions have been evaluated, reflecting both immediate needs and anticipated future development of paddle sports in the region.

## 3.2 Design functions

- To create an outdoor canoe polo playing field which will enable the flourishing of the sport in the Launceston area and provide a venue for Tasmania to host state and national canoe polo competitions.
- To create a venue for canoe slalom training.
- To create an area on the banks where refereeing, marshalling and spectating can be carried out.
- To create a safe and accessible venue for water-based recreation of all types, in an area that is currently not usable.

## 3.3 Universal design principles

The application of universal design principles forms the foundation of our approach to creating an inclusive paddle sports park accessible to users of all abilities. These seven principles—equitable use, flexibility, intuitive operation, perceptible information, error tolerance, low physical effort, and appropriate sizing—guide the design decisions throughout the project. By systematically applying these principles to each element of the facility, it can be ensured that, as far as practicable, physical limitations do not become barriers to participation. Table 1 outlines each of the seven universal design principles, with an associated explanation of each principle. Design integration strategies against each universal design principle are included within each of the specific design element sections of this report.

### Table 1 Universal design principles

| Universal design principle | Design Integration Strategy |
|---|---|
| Principle 1: Equitable Use | The design is useful and marketable to people with diverse abilities. |
| Principle 2: Flexibility in Use | The design accommodates a wide range of individual preferences and abilities. |
| Principle 3: Simple and Intuitive Use | The design is easy to understand, regardless of the user's experience, knowledge, or language skills. |

| | |
|---|---|
| Principle 4: Perceptible Information | The design communicates necessary information effectively to users, regardless of ambient conditions or sensory abilities. |
| Principle 5: Tolerance for Error | The design minimizes hazards and adverse consequences of accidental or unintended actions. |
| Principle 6: Low Physical Effort | The design can be used efficiently and comfortably with minimal fatigue |
| Principle 7: Size and Space for Approach and Use | Appropriate size and space is provided for approach, reach, manipulation, and use, regardless of the user’s body size, posture, or mobility. |

# 4. The Site

## 4.1 Site location and description

The proposed site is located on a narrow inlet of water, protruding eastward from the main channel of Lake Trevallyn. Lake Trevallyn, impounded by the Trevallyn Dam, is a multiple-use body of water. It is used by recreational users, and the lake water forms part of Launceston's water supply. The primary purpose of the lake is to impound water for hydro electricity generation at the Trevallyn Power Station.

The site is bordered to the south and east by Blackstone Park, and to the north by a residential area. The banks of the inlet are vegetated, densely in places.

An aerial view showing the location of the site and property boundaries is shown in Figure 1.

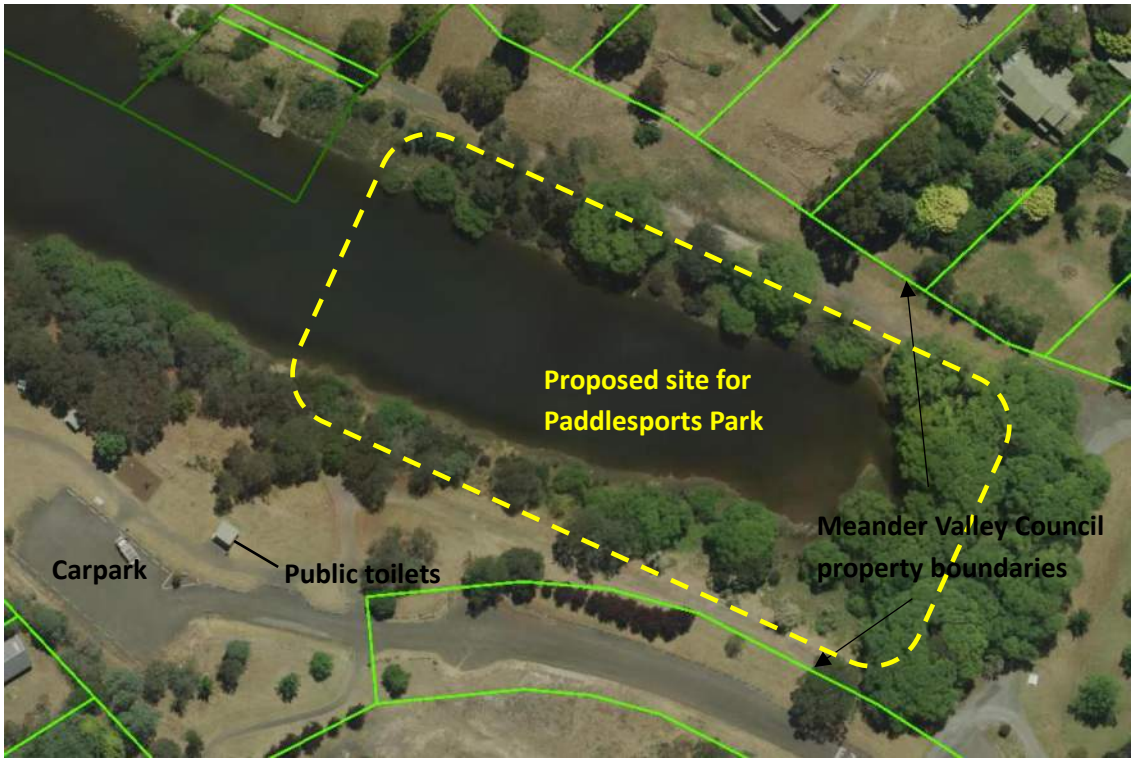



**Figure 1 Aerial photo of the site area (LISTmap)**

**Figure 2 Photo looking east across the site at low water level**

## 4.2 Existing structures and underground services

No existing structures are present at the site, and no overhead services pass over the site.

A utility plan request was made through BYDA. The responses from the various asset owners reported the following assets in the area of the site:

- Tasnetworks – no assets identified
- Department of Premier and Cabinet - no identified any registered Aboriginal relics or apparent risk of impacting registered Aboriginal relics
- West Tamar Council – no assets identified
- Telstra – no assets identified
- TasWater – 150 PVC-U Sewer gravity main along the southern boundary of the site. This sewer line runs beneath the existing unsealed road that runs along the southern boundary of the site and is identified in the field by a series of concrete manhole covers. A pump station overflow pipe is to the south east of the site, and an overflow pipe leads into the far south east corner of the Lake Trevallyn inlet.
- NBN Co – no assets identified

Several minor stormwater outlet pipes, understood to be Meander Valley Council assets, which were not reported in response to the BYDA, were located and surveyed during the site survey.

# 5. Subsurface conditions

## 5.1 Geology

Reference to the 1:25 000 Launceston geology map shown in Figure 3 indicates that the site is underlain by deeply weathered dolerite (Jdw), on the southern bank and dolerite (Jd) on the northern bank. Below the water alluvial gravel, sand and clay (Qa) are likely to overly the dolerite units. An image of the relevant part of the geology map is presented in Figure 3. (Reference: Forsyth, S.M. and Calver, C.R. (compilers). Digital Geological Atlas 1:25 000 Scale Series, Sheet 5041. Launceston. Mineral Resources Tasmania. produced by Mineral Resources Tasmania).

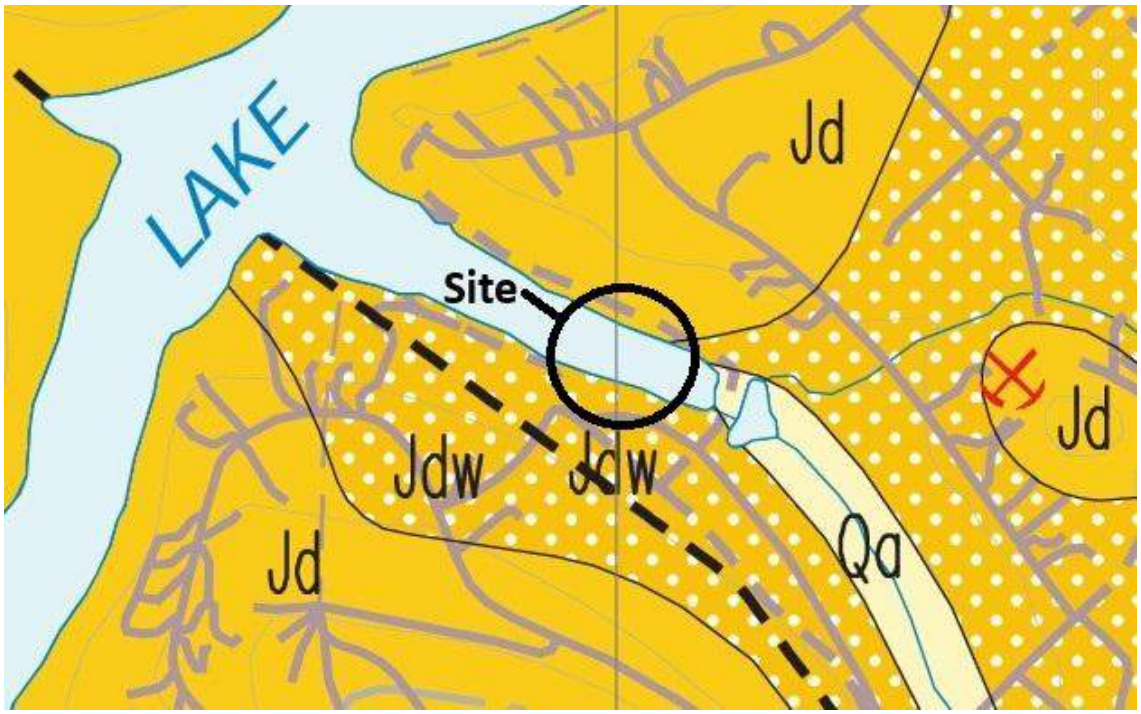



**Figure 3 Site geology**

## 5.2 Geotechnical

A geotechnical inspection of the site confirmed the site conditions to be broadly in line with those described in Section 5.1, with the exception that the slopes above the north and south banks comprise fill overlying the dolerite. The following observations were made of each of the geological units encountered on the site:

### 5.2.1 Fill

Above approximately RL126, on both the north and south banks, the ground surface is stepped in a series of filled benches. The fill appears to be comprised mostly of weathered dolerite in origin. Areas of minor erosion were observed, likely caused by the lake water, on both the north and south sides of the inlet, between approximately RL126 m and RL126.5 m.

### 5.2.2 Alluvial soils

Probing of the site soils revealed that the alluvial soils were encountered below approximately RL125.5 m, and typically consisted of between 0.05 m to 0.15 m of soft alluvial clay/sandy clay, overlain in places with a thin layer of very soft organic clay. The soft clays were underlain by a

variable depth of firm to stiff clay / sandy clay and loose sands, which were in turn underlain by weathered dolerite.

### 5.2.3 Weathered Dolerite

Several outcrops of weathered dolerite were visible on the southern bank of the site, between approximately RL125 m and RL126 m. No outcrops of fresh dolerite were observed at the site. A typical example of a weathered dolerite outcrop is shown in Figure 4.

**Figure 4 Weathered dolerite outcrop on the southern bank**

# 6. Survey

## 6.1 Site survey

A survey of the site was undertaken in March 2024. The site survey was undertaken with a GPS rover, with levels relative to SPM9777. Accuracy of approximately +/-50 mm is typical using this survey method. The survey contours, with 0.2 m spacing between minor contours and 1.0 m spacing between major contours, and reduced levels relative to AHD are shown in Figure 5.

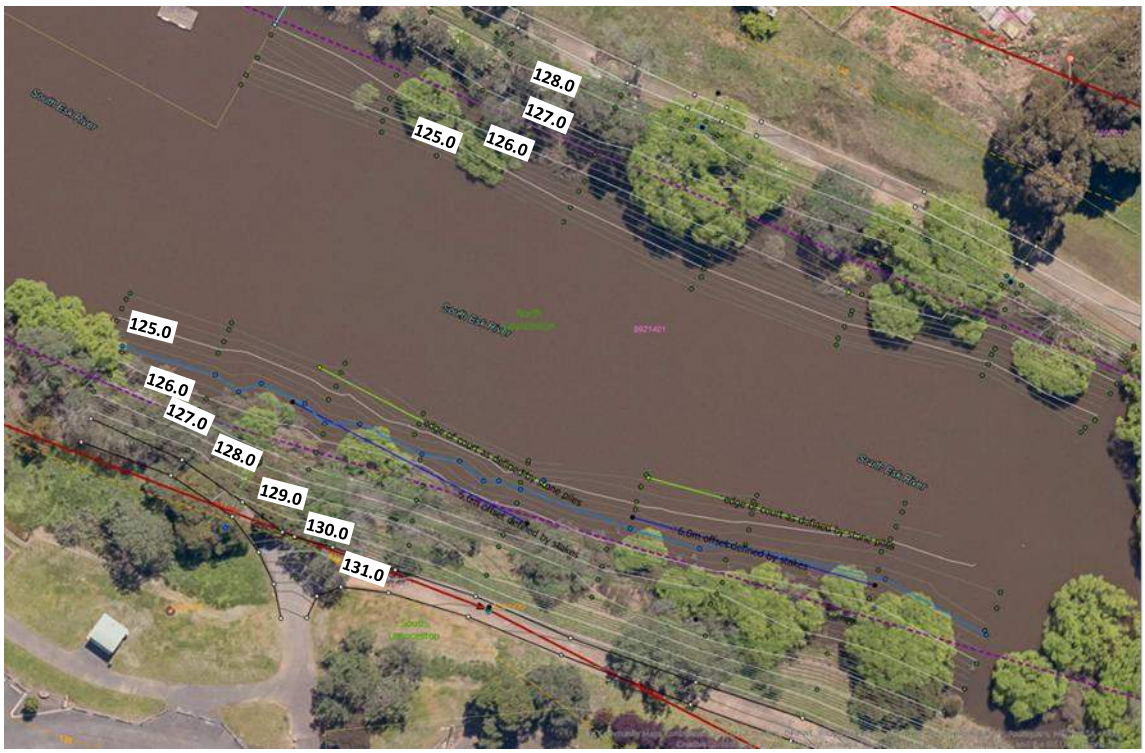



**Figure 5 Site survey**

## 6.2 Lake level

**<u>Note regarding levels</u>: Hydro's water level records are based on a defunct survey datum, which is approximately 0.16 m below AHD. All water levels described in the section are based on Hydro's as-reported data, and have not been corrected to AHD levels.**

The water level in Lake Trevallyn is managed by Hydro Tasmania. Hydro Tasmania have advised that they operate the lake according with the following:

- Trevallyn Lake is a designated Recreation Area, and as such, operations are to generally keep the level above 125.0 m to support recreational activities and aesthetics. *Refer to the note regarding water levels in relation to Australian Height Datum (AHD) at the bottom of this section.*
- The lake may be drawn down lower to prepare for expected high inflows, or during periods of maintenance.

An analysis of lake level data for the years 2017 to 2022 showed that the dam spilled (ie, the lake level was higher than 126.49 m) on average 58 days each year. Whilst there was significant variability within each year, the average frequency of spill days by season was as follows:

- Average number of spill days from December to February: 3.2
- Average number of spill days from March to May: 5.6
- Average number of spill days from June to August: 30.8
- Average number of spill days from September to October: 18.4

To illustrate Hydro's typical operation of the lake level in Lake Trevallyn, Figure 6 shows a plot of the Lake Trevallyn water level between 1st October 2023 and 21st February 2024. This is the typical period of year where the Blackstone Paddlesports Park will receive the most use. It can be seen that Hydro manage the water level between 125.0 and 126.1 for the vast majority of the time. Also visible is the lake level during a spill event, where the water level was drawn-down in advance of the higher water flows, followed by the higher water levels, above Full Storage Level (FSL), where Trevallyn Dam was spilling.

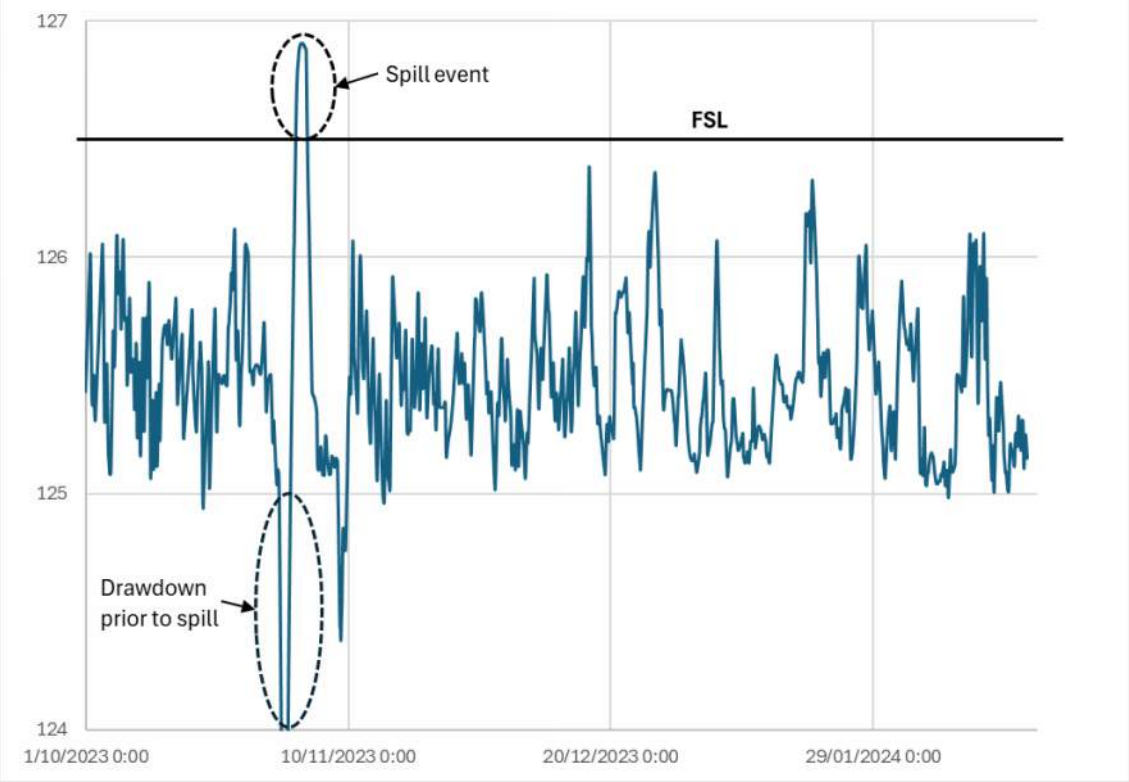



**Figure 6 Lake Trevallyn water level between 1st October 2023 and 21st February 2024**

## 6.3 Bathymetry

A bathymetric survey of the site, shown in Figure 7, was provided by Hydro Tasmania.

The bathymetric survey shows that water depths in the centre of the inlet vary between approximately 123 mAHD at the western end of the site, and 125.4 mAHD at the eastern end of the site. Although the survey, which is of unknown age, generally aligns with the topography of the lake bottom that has been observed during periods of lake draw-down, several minor inconsistencies have been noted, particularly that the area west of the 125 m contour at the eastern end of the inlet, is 0.5 m to 1.0 m deeper than shown on the bathymetric survey. For this reason it has been decided to only use the bathymetric survey for general guidance, and to survey the inlet bottom when the opportunity arises (when Hydro draw-down the lake level).

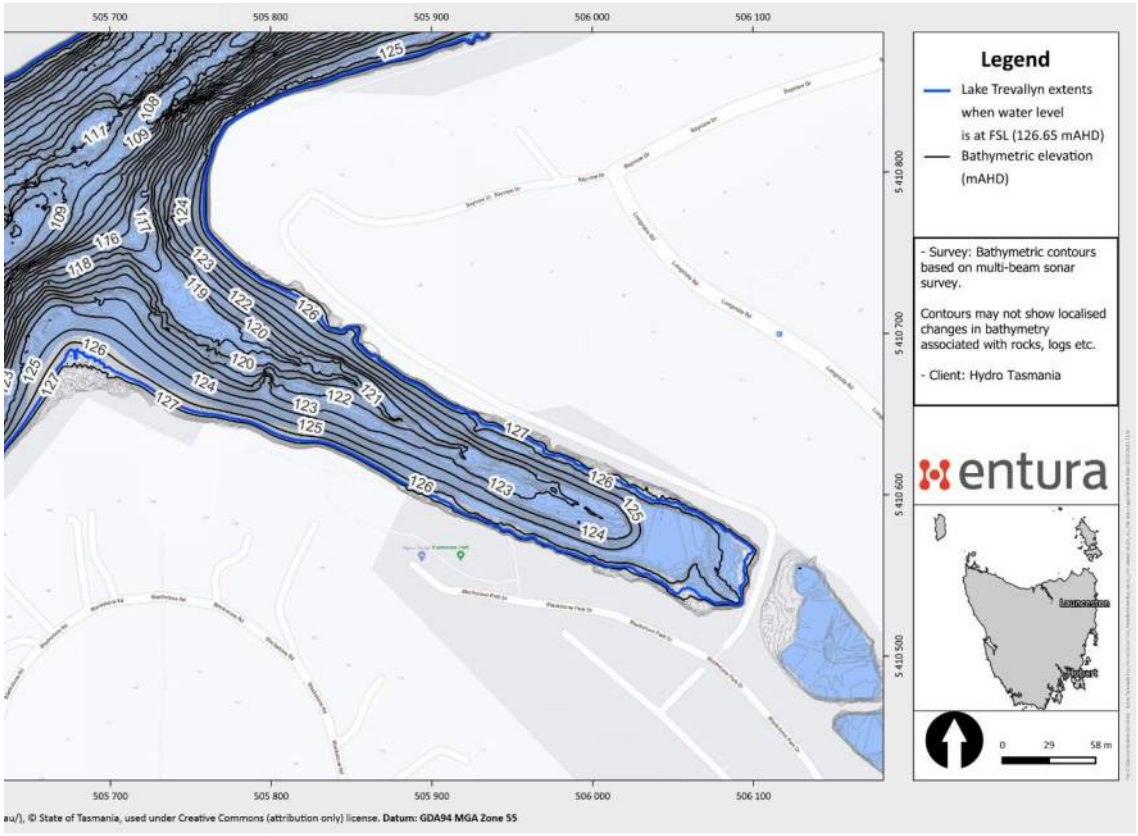



**Figure 7 Site bathymetry *(provided by Hydro Tasmania)***

# 7. Landscape Design

## 7.1 Landscape design intent

The intent of the landscaping design is to create a landscape that supports the establishment of canoe polo fields and a slalom course, with associated access, marshalling and refereeing areas. To achieve the design intent, the design concept is to create:

- A raised and grassed area on the southern side of the inlet that will primarily serve as a surface where the canoe polo primary referee can work from, a marshalling area for players, and an area for spectators.
- Access tracks to the raised and grassed area from the existing tracks/roads.
- A waterside track on the northern side that will serve as the secondary referee track.

The landscape design needs to satisfy the universal design principles described in section 3.3, the geotechnical parameters described in section 7.3, whilst also being suitable for the site conditions described in section 4.

## 7.2 Universal design integration

A brainstorming and consultation process was undertaken to optimise the landscape design with respect to each of the universal design principles. The results of that process are shown in Table 2.

**Table 2 Universal design integration - landscape design**

| Universal Design Principle | Design Integration Strategy |
|---|---|
| Principle 1: Equitable Use | a) Design accessible main access path (wide, smooth, slip resistant surfaces) with appropriate gradient (max 1:14) to accommodate all people wishing to access the site, including wheelchair users.<br>b) Include a canoe launching area that allows for simple access to the water and is usable across a range of water levels. |
| Principle 2: Flexibility in Use | c) Ensure that the area is able to be accessed and used for walkers, swimmers and general park users.<br>d) Provide alternative points of access to ensure there is flexibility and space for different users bringing in paddle craft and equipment<br>e) Ensure there is sufficient space to carry out multiple paddling or other water-based activities concurrently.<br>f) Develop multipurpose areas that can transition between different activities, |
| Principle 3: Simple and Intuitive Use | g) Install signage with clear universal symbols at the start of the access track.<br>h) Ensure the site layout is simple and open so that it is observable and understandable by approaching users |

| | |
|---|---|
| Principle 4: Perceptible Information | i) Signage at the access track to describe the layout and purpose of the area, along with a site diagram.<br>j) Ensure that the edges of tracks on slopes are demarked in such a way as to be easily distinguishable from the slope. |
| Principle 5: Tolerance for Error | k) Design embankments at slopes such that it is possible to easily walk up it and out of the water.<br>l) Delineate the front edges of pathway steps. |
| Principle 6: Low Physical Effort | m) Design primary pathways with minimal slope.<br>n) Where required, ensure that step heights (risers) are in the range 115mm to 190 mm, and widths (goings) are in the range 240 mm to 355mm.<br>o) Landscaping designed to be low-maintenance. |
| Principle 7: Size and Space for Approach and Use | p) Create a wide access path (minimum 1.5m width) without tight bends that will be accessible by people carrying kayaks and canoes.<br>q) Design grassed preparation areas with sufficient space for equipment and people if a larger competition were to be held.<br>r) Design the canoe launching area to wide and easily accessible, and free of obstacles that may obstruct long craft.<br>s) The area must be accessible by vehicle for maintenance, including grounds maintenance by Council.<br>t) The area should be large enough to accommodate simultaneous playing of canoe polo and slalom training, or the establishment of a second (temporary) canoe polo field for use during the state or national competitions. |

## 7.3 Geotechnical parameters

### 7.3.1 Batter slopes

Based on the geotechnical observations at the site, as described in Section 5, an analysis of undrained failure of saturated cohesive soils, and local experience with similar soils under similar conditions, stable batter slopes up to 2.0 m high may be formed at the maximum batter slopes presented in Table 3.

**Table 3 Maximum batter slopes**

| Material | Maximum batter slope* |
|---|---|
| Fill (rock) | 1V:1.5H |
| Fill (soil) | 1V:2H |
| Soft clay/sandy clay, OR loose sand/clayey sand | 1V:3H |
| Firm to stiff clay/sandy clay | 1V:2H |
| Weathered dolerite | 1V:1H |

* For batters up to 2.0.m high in natural slopes, and 5.0 m high in filled (constructed) slopes

### 7.3.2 Excavatability

An assessment of the excavatability of the weathered dolerite encountered on the site was undertaken. The assessment was based on the method proposed by Tsiambaos and Saroglou (Bulletin of Engineering Geology and the Environment, February 2010, Excavatability assessment of rock masses using the Geological Strength Index), which assesses the excavatability of rock masses using the established GSI rock mass rating system.

Figure 8 shows the results of the assessment, which indicates that excavation of any weathered dolerite will require the use of an excavator equipped with a ripping tyne and rock breaker.

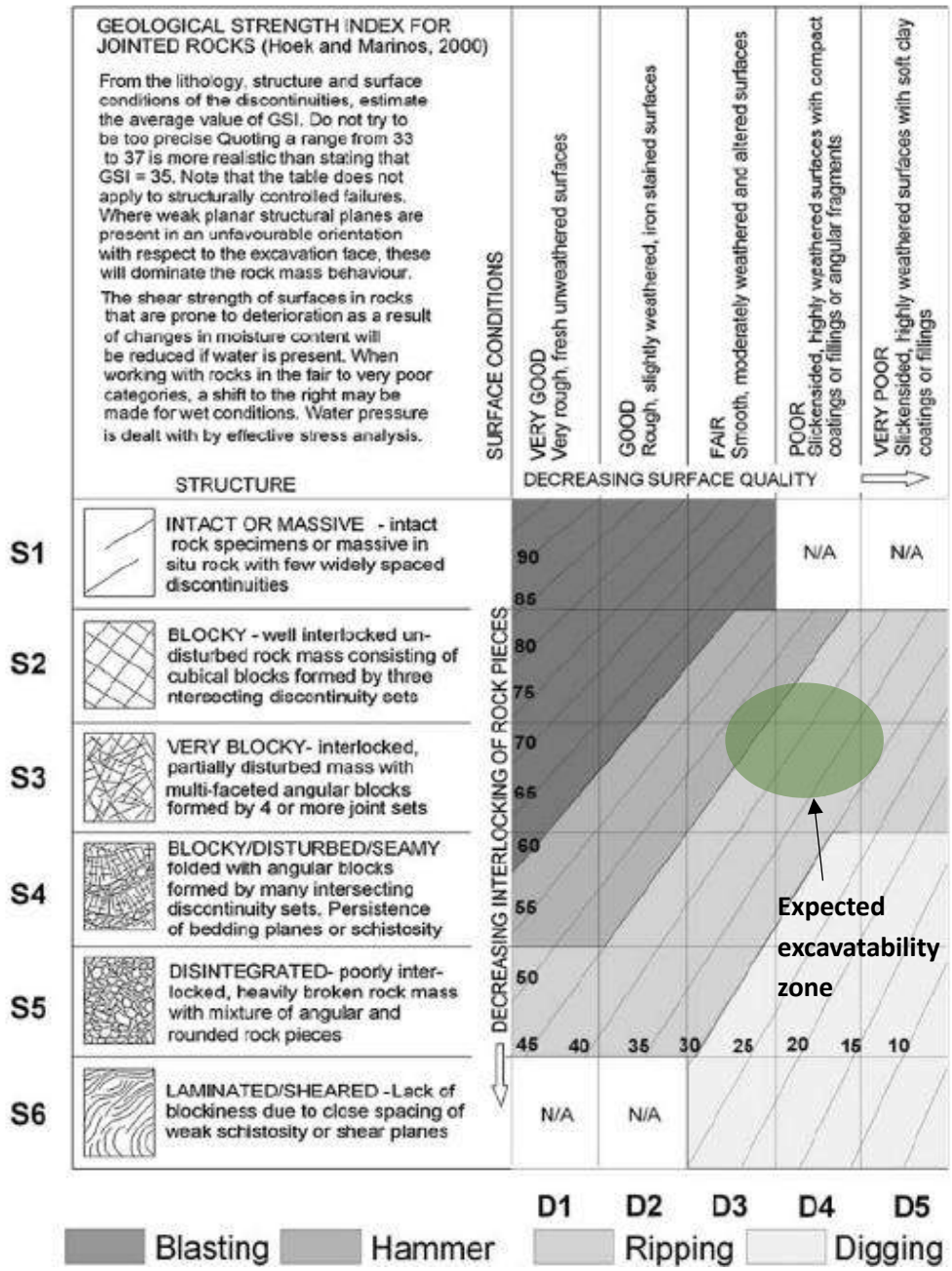



**Figure 8 Excavatability assessment chart**

### 7.3.3 Erosion protection

Due to the variable lake level, exposed ground surfaces should be protected from the erosive conditions caused by wind and wave action within the zone of normal lake level operation.

Embankment surfaces should be protected from erosion with rock revetment or rip-rap. Filled areas that are grassed should also be protected from erosion with a permanent purpose-designed geofabric.

## 7.4 Landscape design elements

The landscape design process has been undertaken to satisfy the design requirements and functions outlined in section 3.2, whilst addressing the universal design integration points identified in Table 2, and the geotechnical parameters described in section 7.3. The results of

this design process are displayed in Table 4. Detailed design drawings are included in Appendix A.

## Table 4 Landscape design elements

| Design element | Universal design integration* |
|---|---|
| A raised embankment on the southern side of the inlet, with the crest of the embankment at RL126.3. A flat referee path at the top of the embankment, sloping up at 1:20 to meet the existing ground surface. The embankment is comprised of two sections, the eastern section adjacent to the primary canoe polo field, and the western section adjacent to a multi-use space. | a,c,e,f,h,q,t |
| A rock revetment, constructed from natural dolerite stone, constructed at a grade of 1V:1.5H on the exposed face of the embankment, to protect the embankment from erosion. | k,o, |
| A gravel referee path, behind the rock revetment on the embankment. The path, constructed from medium grained gravel, will overlie progressively coarser gravel and cobbles that comprise the revetment underlayer, in order to ensure that the front face f the embankment is free-draining, reducing destabilising water pressure within the embankment, and flushing fine sediment that may otherwise accumulate on the path. | o |
| Geotextile to separate the coarse materials of the revetment underlayer, and the fine materials of the existing subgrade and the general fill placed. | o |
| Erosion control mat placed over the filled embankment, to reinforce the grassed surface and prevent erosion. | o,q |
| The construction and maintenance access road, leading down from the south-east corner of the inlet. | o,s |
| An access track to the embankment on the southern side of the inlet. 1.5 m wide and maximum grade 1:14, surfaced with compacted well-graded gravel to create a smooth surface. Edges of the path marked with paint line or similar. | a,c,l,p |
| A free-draining gravel referee track on the northern side of the inlet, constructed at RL126.3 m. Extending the full length of the primary canoe polo field and multi-use space. | d,o,t |
| A centrally located canoe launching area, located in the middle of two sections of embankment, and at the far end of each embankment. Retain natural ground surface. | b,e,r |
| Excavation of shallow areas of the primary canoe polo field to a minimum depth of RL 124.2 m. Re-use the material, where appropriate, as embankment fill. | c,e |

* Refer to Table 2

# 8. Canoe Polo Field Design

## 8.1 Canoe polo field design intent

This section relates to the primary canoe polo field, which is intended to stay assembled for the duration of the outdoor canoe polo 'season'. When the need arises for a secondary canoe polo field to host a competition, Tamar Canoe Club has the equipment required to do this, from the field currently assembled at Blessington. The design of the canoe polo goals for the primary field is dealt with separately in section 9.

The primary canoe polo field is required to be positioned in such a way as that its southern sideline is no further than 5 m from the southern referee path, and that there is a minimum lakebed level of 124.2 mAHD across the field to enable games to be played at the minimum water depth of 0.9 m.

The canoe polo field design needs to satisfy the canoe polo field specifications listed in section 8.2, the universal design principles described in section 3.3, whilst also being suitable for the site conditions described in section 4, in particular the constantly varying lake level.

## 8.2 Canoe polo field specifications

The relevant specifications provided by the International Canoe Federation (ICF) for canoe polo fields are as follows:

- The playing area must be rectangular and have a length of 35 m and a width of 23 m.
- The water throughout the playing area must be still water at least 0.9 m deep.
- There should be a walkway on each side of the playing area kept clear for the Referees.
- The sidelines and goal lines are to be indicated by a floating lane rope. The section of the goal line four 4 m either side of the centre of the goal frame should be free from floats so as not to interfere with the positioning of the goalkeeper.

A diagram showing a top view of a canoe polo filed layout is shown in Figure 9.

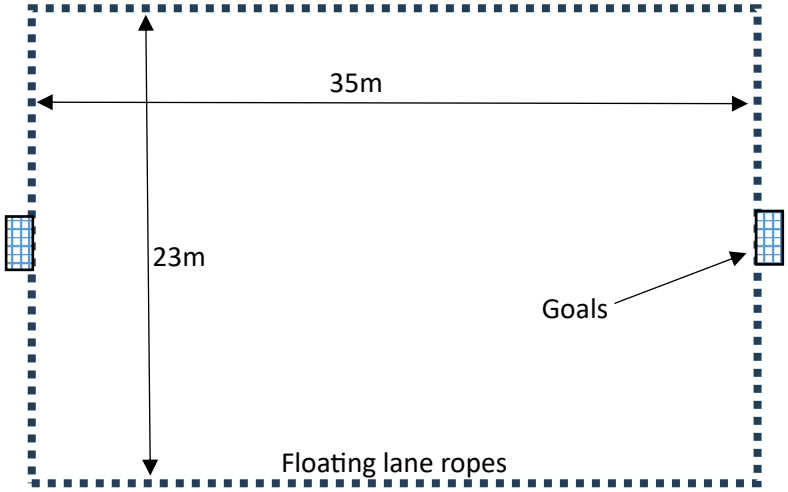



**Figure 9 - Canoe Polo Field Layout**

## 8.3 Universal design integration

A brainstorming and consultation process was undertaken to optimise the canoe polo field design with respect to each of the universal design principles. The results of that process are shown in Table 5.

### Table 5 Universal design integration - canoe polo field

| Universal Design Principle | Design Integration Strategy |
|---|---|
| Principle 1: Equitable Use | a) Design the field so that it may be set up, repaired, modified, or dismantled without requirement for specialised skills, tools, or abilities. |
| Principle 2: Flexibility in Use | b) Design the field to be usable across a maximum range of water levels.<br>c) Ensure the design satisfies specifications for canoe polo fields that are required to hold high level (ie, state or national) competitions. |
| Principle 3: Simple and Intuitive Use | d) The material components to build the field should be simple, easy to handle, and readily purchasable locally in case repairs or replacement parts are required.<br>e) The field should be simple to assemble and repair, requiring no specialised equipment or skills. |
| Principle 4: Perceptible Information | f) Create a simple visual schematic of the field layout and design to enable simple assembly, regardless of prior experience or knowledge.<br>g) Show the locations of anchors in relation to physical objects at the site, in case of damage and the anchor lines needing to be re-located. |
| Principle 5: Tolerance for Error | h) Ensure that anchors are fully buried so that they don't present a hazard to people walking in the water.<br>i) Ensure that there are no loose lines in the design that may constitute a risk of entanglement.<br>j) Ensure that the design incorporates, as much as possible, robust and low cost components that will constitute a low susceptibility to intentional damage or theft. |
| Principle 6: Low Physical Effort | k) Design the field to be a semi-permanent installation, requiring setting-up and packing-up only at the start and finish of the canoe polo season. So that otherwise the canoe polo field does not require any attention for routine use. |
| Principle 7: Size and Space for Approach and Use | l) Design the field to be located close to water access points to ensure fast change-over between games, and a close location for paddlers who have 'swum' to recover. |

| | |
|---|---|
| | m) Design the field anchor lines to be in shallow water so that repair or modification can be undertaken whilst standing. |

## 8.4 Canoe polo field design elements

The canoe polo field design process has been undertaken to satisfy the design functions outlined in section 3.2, whilst addressing the universal design integration points identified in Table 5, and the canoe polo field specifications outlined in section 8.2. The results of this design process are displayed in Table 6. Detailed design drawings are included in Appendix A.

### Table 6 Canoe polo field design elements

| Design element | Universal design integration* |
|---|---|
| The field to be positioned such that the southern edge of the field is 5.0 m from the referee path on the eastern section of the embankment, and lakebed surface level across the field area is not more than RL 124.2 m. | b,c |
| The field boundaries are to be constructed from 2.5 mm 304 grade stainless steel wire rope threading through Anti Wave lane rope disks (the Tamar canoe Club already owns these). 4 mm Aquatec rope is to be used 4 m either side of the goal centreline. All connections to be made by thimble and swage ends with galvanised shackle connectors. | a,c,d,e,j,k |
| An 8” white surface float will be positioned at each corner of the field to ensure the corners of the field do not submerge during higher water levels. | b |
| Each corner of the field will be held in position by an anchor rope pulling the field outwards. The anchor lines shall incorporate a short length of bunji cord to allow the anchor line to stretch at least 100 mm to accommodate changing lake levels. | b |
| Anchors in areas where the soils are deep (>0.3 m) will comprise a maximum 20kg block of concrete, installed or cast in place. An 8 mm galvanised U-bolt shall be set into the concrete. Attachment between the anchor line and the anchor will be via a minimum 1.0 m length of galvanised chain. The entire anchor shall be covered with soil such that only the chain protrudes from the ground surface.<br><br>Anchors in areas where the rock is at a shallow depth (<0.3 m), shall be constructed with drilled anchors into the dolerite. The anchor should be fully recessed into a recessed rock socket, and grouted over such that only the chain protrudes from the ground surface. | b,d,h,j,m |

* Refer to Table 5.

# 9. Canoe Polo Goal Design

## 9.1 Canoe polo goal design intent

The intent of the canoe polo goal design is to satisfy the design requirements listed in section **Error! Reference source not found.** and the universal design principles described in section 3.3, whilst also being suitable for the site conditions described in section 4, in particular the constantly varying lake level.

Several distinctly different design options were available for use on the primary canoe polo field: cable-hung goals, bottom mounted goals, and floating goals. Given the differences in each of these potential goal designs, it was considered appropriate to assess each against the universal design principles in order to assess the most appropriate design.

## 9.2 Canoe polo goal specifications

The International Canoe Federation (ICF) specifications for the design of canoe polo goals are as follows:

- Each goal will be located over the centre of each goal line with their lower inside edge two (2) metres above the surface of the water.
- Each goal is to be held in such a way that it is prevented from swinging or moving.
- The goal supports should not interfere with any player defending or manoeuvring around the goal area, or with the flight of the ball in the area of play.
- Each goal will consist of an open frame one (1) metre high by one and a half (1.5) metres wide (measured internally) hung vertically.
- The maximum width of a material used to construct the goal frame will be five (5) centimetres.
- The goal frames should not have any vertical or horizontal bars parallel to the main goal frame which may cause the ball to rebound out of the goal frame.
- The front face of the frame must be red and white striped. Each stripe being of 20 centimetres length.
- Each goal is to have a net made from a strong shock absorbing material, which allows the ball to pass freely through the goal frame but indicate clearly that a goal has been scored.
- The net must be a minimum of fifty (50) centimetres deep and have no loose or hanging ends which may interfere with players or their equipment or blow in the wind or that may impede the ball entering the goal.

## 9.3 Universal design integration

A brainstorming and consultation process was undertaken to optimise the canoe polo goal design with respect to each of the universal design principles. The results of that process are shown in Table 7.

### Table 7 Universal design integration - canoe polo goals

| Universal Design Principle | Design Integration Strategy |
|---|---|
| Principle 1: Equitable Use | a) Design the goals to require minimum skills, knowledge, or physical ability to set up or operate. |
| Principle 2: Flexibility in Use | b) Install adjustable canoe polo goals that accommodate lake level fluctuations, preferably automatically.<br>c) The goal height is easy to modify, if Paddleball is played in the future at the field (Paddleball requires a lower goal). |
| Principle 3: Simple and Intuitive Use | d) Ensure the design is simple and requires little or no knowledge or skill to use.<br>e) Design the goals to require little or no set-up. |
| Principle 4: Perceptible Information | f) Any information required to operate, maintain or adjust the goals is clearly displayed on the goal design, and where appropriate, on the constructed goals themselves. |
| Principle 5: Tolerance for Error | g) Ensure that the design presents no risk, during play, of the goals dropping on to players.<br>h) Ensure that goals do not pose a safety risk to others (eg: swimmers attempting to climb a goal structure)<br>i) Ensure that the design has a low susceptibility to intentional damage or theft.<br>j) Design the goals to be stable during windy or wavey conditions. |
| Principle 6: Low Physical Effort | k) Ensure that the goals are designed such that low physical effort is required for routine use or maintenance.<br>l) Design the goals to resist wear and corrosion for a long design life. |
| Principle 7: Size and Space for Approach and Use | m) Ensure that there is sufficient space for the installation method of the goals.<br>n) Ensure that the goal design does not unnecessarily impede other non-canoe polo water activities. |

## 9.4 Goal design options

The following goal design options were considered, and compared against each other in the multi-criteria assessment presented in Table 8.

### 9.4.1 Cable-hung goals

This option involves hanging two semi-permanent cables across the river along the goal lines. The span of the cables would be approximately 60 metres. To ensure the goals could be hung at the correct height for a water level of RL126m, the cable, at the goal locations, would need to be at approximately RL129m. Allowing for cable sag, the ends of the cables would need to be secure to posts erected on the banks, and reach at least RL130 metres.

Lightweight aluminium goals would be installed and removed by use of a 'return line'. The distance of the goals above the water could be controlled by winching the cable in or out from hand winches attached to the posts.

The potential benefit of this method are its relative affordability. The disadvantages are the requirement to continually manually change the goal heights as the water level changes, goals swinging in the wind, and potential safety issues assisted with the cables being close to the water surface during flood events, and in the potential for accidentally dropping goals on paddlers.

### 9.4.2 Bottom-mounted goals

A bottom-mounted goal would comprise a pre-fabricated steel structure mounted on the bottom of the lake. Hand-operated stabilisers would be used to level the structure during installation, during which time the water level in the lake would need to be lowered below the level of the bottom of the lake. A system comprising a float and cable arrangement would control the level of the goals so that they always remained at the correct height.

This option would likely have a higher initial cost than cable-hung goals, but would be a more durable option that required no work to set-up the goals for each game.

### 9.4.3 Floating goals

Goals mounted on floats would be anchored to the sides or bottom of the river to hold the goals in the correct position, with mechanisms to ensure that the goals could float up with flood events without submerging or damaging the goals.

This option would potentially be more susceptible to interference from people trying to climb on the structure, potentially turning it over or otherwise damaging it.

## 9.5 Multi-criteria assessment

A multi-criteria assessment was undertaken in order to select the most appropriate goal design option. The results of the assessment, shown in Table 8, indicate that bottom-mounted goals are clearly the most suitable of the design alternatives considered for the Blackstone Paddlesports Park.

### Table 8 Multi-criteria assessment for canoe polo goals

| Criteria | Cable-hung goals | Bottom-mounted goals | Float-mounted goals |
|---|---|---|---|
| Design the goals to require minimum skills, knowledge, or physical ability to set up or operate. | 1 | 3 | 3 |
| Install adjustable canoe polo goals that accommodate lake level fluctuations, preferably automatically. | 1 | 3 | 3 |
| The goal height is easy to modify, if Paddleball is played in the future at the field (Paddleball requires a lower goal). | 2 | 3 | 1 |
| Ensure the design is simple and requires little or no knowledge or skill to use. | 1 | 3 | 3 |
| Design the goals to require little or no set-up. | 1 | 3 | 3 |
| Ensure that the design presents no risk, during play or outside of play, of the goals dropping on to people. | 2 | 3 | 2 |
| Ensure that goals do not pose a safety risk to others (eg: swimmers attempting to climb a goal structure). | 2 | 3 | 1 |
| Ensure that the design has a low susceptibility to intentional damage or theft. | 2 | 3 | 2 |
| Design the goals to move as little as possible during windy or wavey conditions. | 1 | 3 | 2 |
| Ensure that the goals are designed such that low physical effort is required for routine use or maintenance. | 1 | 3 | 2 |
| Ensure that there is sufficient space for the installation method of the goals. | 3 | 3 | 3 |
| Ensure that the goal design does not unnecessarily impede other non-canoe polo water activities. | 2 | 3 | 2 |
| **Total Score** | **19** | **36** | **27** |

* 1 = Deficient, 2 = Satisfactory, 3 = Ideal

## 9.6 Canoe polo goal design elements

The canoe polo goal design process has been undertaken to satisfy the design functions outlined in section 3.2, whilst addressing the universal design integration points identified in Table 7, and the canoe polo goal specifications outlined in section 9.2. The results of this design process are displayed in Table 9. Detailed design drawings are included in Appendix A.

## Table 9 Canoe polo field design elements

| Design element | Universal design integration* |
|---|---|
| Bottom mounted goal structure, with a stable base that will resist overturning moments up to 3000Nm. | g,h,m,j,n |
| Base that incorporates screw jacks to cater for a variable ground surface. | k |
| A single upright post, 125 mm RHS to support the above-water goal structure. This will make it a difficult and unattractive structure to climb onto. | h,i |
| Pivoting arms, that automatically keep the goals the desired depth from the water via a wire rope run through pulleys on the base to a float at the surface of the water. | a,b,c,d,e,g,k |
| Goals connected to the top and bottom of the pivoting arms to prevent the goals swinging in windy conditions. | j |
| Nylon bushes installed at all pivot points to reduce wear and ensure the goals do not ‘squeak’. | l |
| All steel elements on the structure (comprised entirely from 125 mm RHS with 4 mm wall thickness, and 50 mm RHS with 4 mm wall thickness) to be hot dip galvanised. | l |

# 10. Canoe Slalom Course Design

## 10.1 Slalom course design intent

The intent of the slalom course design is to satisfy the specifications listed in section 10.2, the universal design principles described in section 3.3, whilst also being suitable for the site conditions described in section 4. It is noted, however, that the Blackstone Paddlesports Park is intended as a training facility, and therefore, aspects of slalom course design that are important for high-level competition may not be as crucial for a training facility.

The Tamar Canoe Club has consulted with the Derwent Canoe Club and the Tasmanian Canoe Club, part of whose slalom course at Forth is shown in Figure 10, regarding the design of the canoe slalom course layout of the Blackstone Paddlesports Park. Both of these clubs have existing canoe slalom courses. Based on the Tamar Canoe Club's consultation with these clubs, the following slalom course design concept is proposed for the Blackstone Paddlesports Park:

- Six to ten posts on each side of the inlet, spaced at approximately 5 m apart,
- The top of the posts at least 4 m above the water level, with higher being better.
- Removable lines, strung between posts, to span the inlet.
- Each line able to support two slalom gates.
- A method of tensioning the lines spanning the inlet, with at least 2:1 mechanical advantage.

**Figure 10 Canoe slalom course on the Forth River**

## 10.2 Canoe slalom gate specifications

There are no specifications for canoe slalom regarding posts or cross river lines. The International Canoe Federation (ICF) specifications for the design of canoe slalom gates are as follows:

- The gates consist of two suspended poles painted with green and white rings for downstream gates and red and white rings for upstream gates, with the bottom ring always white, each ring is 20 cm high.

- A black band of a minimum width of 2 cm and maximum width of 2.5 cm is placed around the base of each pole.
- The width of a gate is at least 1.2 meters measured between the inside edge of the poles.
- Poles must be round and 1.6 m to 2.0 m long by 3.5 to 5.0 cm in diameter, and of sufficient weight that motion caused by wind is not excessive.
- The height of the poles above the water should be such that it provides fair and reasonable conditions for negotiation whilst simultaneously satisfying the aims of course designers.
- The pole adjusting system must enable easy adjustment for each pole on every gate.
- The gate number panels must measure 30 cm x 30 cm. The numbers must be inscribed on both sides of the panels using written in black on a yellow or white background. Each number and letter must measure 20 cm in height and 2 cm in thickness. On the side of the panel opposite the direction of course negotiation, there is a diagonal red line from the bottom left to the top right.

## 10.3 Universal design integration

A brainstorming and consultation process was undertaken to optimise the canoe slalom course design with respect to each of the universal design principles. The results of that process are shown in Table 10.

### Table 10 Universal design integration - canoe slalom course

| Universal Design Principle | Design Integration Strategy |
|---|---|
| Principle 1: Equitable Use | a) Ensure that the design allows for the flexibility in set-up, such that slalom courses can be set for beginner through to advanced kayakers.<br>b) Include a mechanical advantage pulley system to allow the gates to be raised with minimal strength required. |
| Principle 2: Flexibility in Use | c) As for (a), ensure that the course set-up is fully flexible with user requirements.<br>d) Locate the slalom course a spot where it is unlikely to interfere with canoe polo. |
| Principle 3: Simple and Intuitive Use | e) Ensure that a simple and intuitive system is established for setting up the cross lines and installing the gates. Ie, not requiring any particular knowledge with knots or rigging.<br>f) Install posts up the slope rather than installing high posts to achieve the desired height of installation. Maximum height of posts to accommodate typical reaching height of 2.35 m with a single step. |
| Principle 4: Perceptible Information | g) Include a design diagram showing simple instructions on how to set up, modify or dismantle the slalom course. |

| | |
|---|---|
| Principle 5: Tolerance for Error | h) Ensure the design minimises the risk of gates falling on to paddlers.<br>i) Ensure that the design incorporates, as much as possible, robust and low cost components that will be less susceptible to intentional damage or theft.<br>j) Locate the posts in positions that do not obstruct the passage of other park users.<br>k) Ensure that the cross river lines are not at a level that obstruct other park users. |
| Principle 6: Low Physical Effort | l) Design a system of installing the cross lines and gates that does not rely on strength. Consider simple pulley systems for mechanical advantage, where required.<br>m) Design the gate assembly to be as light as practicable.<br>n) Design the parts for durability and longevity. |
| Principle 7: Size and Space for Approach and Use | o) Locate the posts in positions where they are easily accessed, but do not obstruct passage.<br>p) Ensure that the gates can be installed from the embankment, to minimise the work involved in course set-up. |

## 10.4 Cross river line clearance

An assessment of the height clearance of the cross-river lines (which would be temporarily installed for each training session) was undertaken to determine the required height of the posts such that the lines did not obstruct park users whilst they were in place. The result of the assessment is shown in Figure 11, which shows the side view of the fourth cross river line from the east. This assessment indicated that a cross river line height of 2.3 m at the post would result in a 2.12 m clearance at the line's lowest point: the outside edge of the main access track.

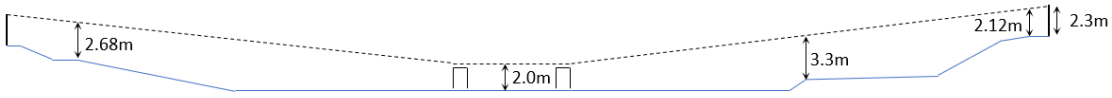



**Figure 11 Cross river line showing height clearances at key points**

## 10.1 Canoe slalom course design elements

The canoe slalom design process has been undertaken to satisfy the design functions outlined in section 3.2, whilst addressing the universal design integration points identified in Table 10, and the canoe slalom gate specifications outlined in section 10.3. The results of this design process are displayed in Table 11. Detailed design drawings are included in Appendix A.

## Table 11 Canoe slalom course design elements

| Design element | Universal design integration* |
|---|---|
| Eight posts installed on each side of the inlet to support eight cross-river lines. Each post to be fabricated from 60 mm CHS, with all metal components hot dip galvanised. | m |
| The location of the posts is in the multi-use area, immediately west of the primary canoe polo field. | d,o |
| Each post is to be located no closer than 1.0 m from a batter slope, to ensure the stability of the posts and a flat working area around each post. | j |
| Each post to have a welded loop at 0.1 m height and 2.3 m height. The upper loop is for the connecting the cross-river lines, and the bottom loop is to attach the bottom pulley of a 3:1 mechanical advantage pulley system. | b,l |
| A single step, likely a small dolerite boulder, approximately 250 mm high at the base of each post to allow shorter people to be able to reach the top welded loop on each post. | f |
| Each post is to have a 125 mm nylon cleat attached for the purpose of tying off the 3:1 pulley system. | b,l |
| Eight cross-river lines, each from 6 mm Aquatec rope. This rope has proved suitable for use at the Forth slalom course for many years. The cross-river lines are to be stored on hose rollers to allow simple setting-up of the course. The cross-river lines are to be installed for each session, with the lines spanning the inlet between the top welded loops on the posts. This height allows for at least 2.1 m clearance at the closest point, the access track on the southern side of the inlet. | i,k |
| Pulley system to apply 3:1 mechanical advantage to the cross-river lines. This is required to raise the gates to the appropriate level without excessive force required. Each pulley system to comprise a top double pulley and a bottom single pulley. Each pulley is to be permanently threaded with a cross-river line and temporarily connected to the welded loops on the posts. | b,e,l |
| 16 slalom gates, assembled as shown in the design drawings, to allow two gates for each cross-river line. | c |

# Appendix A – Drawings

# Appendix B – Materials List