Friends of Maatsuyker Island

Maatsuyker Island Weed Control Program:
2023/24 Season Report

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Friends of Maatsuyker Island (Wildcare Inc.)

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Introduction

The Friends of Maatsuyker Island (FOMI), Wildcare Inc. Weed Control Program began in 2004 to prevent significant impacts of weeds on Maatsuyker (Tasmanian Wilderness World Heritage Area, TWWHA). The Weed Control Program targets infestations of blackberry and Californian Thistle, listed under the *Weed Management Act 1999* as declared weeds in Tasmania with blackberry also recognised as a Weed of National Significance (WoNS), and invasive environmental weeds *Veronica* (prev. *Hebe) elliptica* and *Montbretia*. Primary control of *Hebe elliptica* commenced in February 2008. Working bees to undertake monitoring and follow-up work on all four target weed species have occurred at least annually from 2004–2023, and biannually for the summer seasons 2008, 2009 and each year since 2014. This being the 20th year of the Weed Control Program.

The long-term Weed Control Program is vital for ongoing restoration and maintenance of vegetation and seabird habitat values on Maatsuyker Island. Weed invasion can alter the structure of Maatsuyker's unique vegetation and suitability of breeding habitat for important burrow-nesting seabird populations (including EPBC Act 1999 listed species: soft-plumaged petrel – *Vulnerable*; short-tailed shearwater and sooty shearwater – *Migratory*). FOMI's Shearwater Monitoring Program, commenced in 2013, runs concurrently and complementary with the Weed Control Program and includes monitoring shearwater re-colonisation of areas previously infested with weeds.

FOMI's Weed Control Program has been guided by "*Maatsuyker Island - Weed Control" (Zeigler, K., Cronin, S. & Campbell, V. 2011)* and the more recent weed management plan, *Maatsuyker Island Weed Management Plan 2022-27 (Zeigler, K),* which provides up-to-date information on the target weeds including the best methods toward eradicating the target weeds. The program is also guided by FOMI's annual reporting, taking an adaptive management approach through learning in the field as well as the data capture and analysis, which has led to refinement of the program. Implementation of the Fulcrum app in 2016 has greatly improved data management.

FOMI thank Matthew Baker, Senior Curator (Weed Taxonomy), Tasmanian Herbarium, Tasmanian Museum and Art Gallery for hosting the weed team prior to the March Working Bee, as well as for plant identification while we were on the island and on our return. The visit was interesting and helpful to the team. The fewer *Hebe elliptica* plants located the more challenging it is to identify the difference between juvenile *Hebe elliptica* and some native species in particular Cherry Rice-flower (*Pimelea drupacea*). With the help of the staff of the Herbarium we can report that no *Hebe elliptica* were identified during this season working bees. This being the first year since primary removal in 2008.

FOMI are grateful to supporters and grants received.

Tasmania Nature Conservation Fund

FOMI work in partnership with the Tasmania Parks and Wildlife Service (PWS).

Funding:

The December 2023 and March 2024 working bees received funding and support from:

- Pennicott Foundation; and,
- Tasmania Nature Conservation Fund (Wildcare Inc.).
- Helicopter Resources

The working bees were also supported by FOMI general funds and PWS in-kind support.

For further working bee details refer to: FOMI (2024) *Maatsuyker Island Working Bee Report 2023/24*. Friends of Maatsuyker Island (FOMI) Wildcare Inc.

Overall program objectives

The broad aims of the 2023/24 summer season working bees were:

1. Weed Control (December 2023 and March 2024)
   I. *Veronica (prev.Hebe) elliptica* follow-up control
   II. Blackberry (*Rubus fruticosus agg.*) follow-up control
   III. *Montbretia (Crocosmia Xcrocosmiiflora)* follow-up control
   IV. *Agapanthus orientalis* follow-up control
   V. *Californian thistle (Cirsium arvense)* follow-up control
   VI. Control for other weed species
   VII. Survey areas (use of Hip-chain method) to monitor weed infestations
   VIII. Photo-point Monitoring

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1. Weed Control Program

Reporting on 10 – 15 December 2023
Weed control works focused on removal of *Montbretia,* checking all 'active', 'in-decline' and 'absent' sites. The remaining Montbretia photo-point recorded.

Team members: Marina Campbell and Fiona Taylor. Georgie and Ash Carr, PWS Volunteer Caretakers assisted with survey (hip-chain) undertaken of Zones 46 and 48 and sweep.

Reporting on 9 – 18 March 2024
Weed control works focused on surveying (hip-chain) follow up on *Hebe elliptica,* blackberry and *Montbretia*. Other weeds including Californian Thistle known sites checked.

Project leaders: Marina Campbell (also Shearwater monitoring) and with thanks to Stephen Anstee for taking on the lead.
Team members: Mark Raddatz, Nicky Barry, Marguerite Carson, Steve Greig, Ann Wessing, Al Wiltshire (also Shearwater monitoring) and assistance from Georgie Carr PWS Volunteer Caretakers.

1.1 Weed Control Method

Survey (hip-chain), Sweep and 'Go To' systematic follow up
A surveyor's hip-chain was used to mark one edge of the survey area on each transect within a pre-determined survey 'zone'. The person carrying the hip-chain followed the edge of the zone as well as using a compass to assist with bearing. Other members of the team walked parallel to the person carrying the hip-chain, and each person walked close enough to each other to ensure visual coverage of the area in between (approximately 5 metres). At the end of each section, the team reversed direction and travelled back along the adjacent section, using the hip-chain thread as a guide, and retrieving the thread as they went. The person on the other side of the search line marked out a new line using the hip-chain. Although the lead is taken from the person with the hip-chain, a compass bearing can be helpful for others in the line.

GPSs are carried by the person on each edge of the survey area as well as team members spaced out across the survey line. The GPS track log shows that the team have been able to ensure coverage of the zone. In spite of the thickness of the understory, varying slopes and roughness of the terrain within each section, the series of fairly straight parallel lines represent a good coverage of the zones. The track log is also used in the mapping and reporting of area surveyed.

This systematic transect survey method is used to ensure that any new weed infestations are located and treated as well as providing important follow-up on existing known infestation sites. Furthermore, this method of survey, as opposed to visiting only previously known infestation sites, ensures that new weed areas are not being missed. In addition, sites present in zones not included in the season's program are visited using 'Go To' way points as well as the new trial method of sweep search (see below).

Sweep

In 2021-22 the team trialled a sweep search method. Team members paired up to 'sweep' a predetermined area within a zone. This method ensured that the area around each 'active' and 'in-decline' site was checked as well as carrying out a broad sweep of the remainder of the zone. This method covered a greater search area than the 'Go-To' method but was considered less thorough than the hip-chain survey method. It is recommended that the sweep method be used on alternate years to the hip-chain method in zones that require regular montitoring. Due to the zone rotation schedule the sweep method was not undertaken this season other than the usual sweep of Zone 1 and a sweep of the interface

of scrub and low growing vegetation north of the lighthouse. This sweep continued from where the rope contractors finished their observations in March 2023. Refer to Map 2. PWS Volunteer Caretakers assisted in this sweep.

Zones

In March 2017, the survey area was divided into different 'zones' to allow for more targeted and efficient survey effort. The implementation of the zones structure has ensured improved planning for surveying using hip-chain. Zones 27 and 28 were reconfigured in the 2020-21 season to form three zones (to become 27, 28, 29) to reduce the size of the zones. This change did not affect previous reporting. It is recommended that the new zones (28 and 29) be further split to 3 zones to reduce the size. This change is now reflected in the maps included in this report with the zones now numbered as 28, 29, 31. A new Zone 30 was added to the survey area in March 2022.

Zone areas were recalculated after the March 2022 working bee following adjustments to the zone boundaries with realignment of the mapped location of the road. Zones 13 and 19 were the most significant adjustments. Furthermore, the zone maps now show road width. NB: It is important to be aware that this realignment has not resolved all the issues with some weed sites potentially showing on the opposite side of the road than actual location. This is also likely due to the lower GPS accuracy in the earlier years of the Weed Control Program.

The Survey Area Track Logs shows the tracks of all GPSs carried in the field during December 2023 and March 2024 (refer to Map 2). A total of 7.082 ha was covered by hip-chain survey and approximately 1 ha by sweep.

Fulcrum weed data management

The implementation of Fulcrum was staged over three working bees, with Fulcrum first used to map *Hebe elliptica* in March 2016, *Montbretia* in December 2016 and blackberry in March 2017. The Fulcrum app is operated on mini-iPads. Through the application of this program, volunteers can locate previously recorded weed sites and directly enter data on weed status in the field. The iPads are synced each day to ensure that no weed sites are missed.

Fulcrum has provided the means to allocate a 'status' determined on the number of years since weeds were present at a site. The categories are based on seed viability information provided in *Maatsuyker Island – Weed Control (Zeigler, K., Cronin, S. & Campbell, V. 2011)* as well as being informed by experience in the field. It is important to ensure that the allocated status takes into account the year the weed was last noted as well as the year it was lasted checked.

Weed status includes:

- 'Identified' referring to newly identified site;
- 'Active' a site with a *Hebe elliptica*/blackberry found in the past two years;
- 'In Decline' a site without a *Hebe elliptica/*blackberry found in the past three years (found four years prior); and
- 'Absent' a site without a *Hebe elliptica/*blackberry found in the past four years (found five years or more prior).

Due to the observed viability of *Montbretia,* the status has been extended by one year for each of the categories. These include:

- 'Identified' referring to newly identified site;
- 'Active' a site with a *Montbretia* found in the past three years;
- 'In Decline' a site without a *Montbretia* found in the past four years (found four years prior); and

- ‘Absent’ a site without a *Montbretia* found in the past five years (found five years or more prior).

The Maps included in this report provide a visual representation of the positive impact of the Weed Control Program, in particular comparing the *Hebe elliptica*, blackberry and *Montbretia* maps 5, 6, 7 which include all reported sites (including sites now ‘absent’ shown as a green colour) to the maps 5a, 6a, 7a which only include the ‘active’ and in-decline’ sites.

Photo-point Monitoring

A total of six long-term photo-points have been established. In 2004, two were established for blackberry and one for *Montbretia* and, in 2008, two for *Hebe elliptica*. A second *Montbretia* photo-point was established in March 2016. NB: *Montbretia* Photo Point 1 (MB036) is no longer viable (last photograph taken March 2019) with the native vegetation growth obscuring the site. Each photo-point has been re-photographed on most working bees and field notes recorded less often over the past years. The photos and field notes provide a useful indicative record of the changes since primary treatment of the weed infestations. The photo series, with notes, prior to 2011 are included in Ziegler et al. (2011). The photo-point monitoring data, including photos, is also recorded on the Fulcrum app.

1.2 *Hebe elliptica* follow-up control

The name change from *Hebe elliptica* to *Veronica elliptica* is referred to in Campbell, M., Saunders, A., (2018) *Maatsuyker Island Weed Control Program: December 2017 and February/March Season 2018 Report.* For continuity, the term *Hebe elliptica* is used in reporting. A total of 71 sites (including the two photo points) were checked. Of these sites; 3 remain as ‘Active’, 7 as ‘In Decline’ (including 1 photo-point) and 61 as ‘Absent’ (including 1 photo-point). All the previously recorded active and in-decline sites outside the survey areas were checked with the ‘Go To’ method. 2 sites were checked both December 2023 and March 2024. Of the 307 total sites recorded, 296 are now absent.

Observations

The visit to the Herbarium prior to the March Working Bee was beneficial for the team. The plant removed from Hebe Central (zone 1) looked like *Hebe elliptica* but behaved like Cherry Rice-flower (*Pimelea drupacea*), that is when pulling the outer of the stem it pulled of like string. This plant is commonly known as bushman’s bootlace for this reason. The Herbarium confirmed our finding. Except for this one plant which was removed by cut and paste method the smaller plants (sprouts) from site HB306 were hand pulled and pressed for identification by the Herbarium staff. These plants were later confirmed not to be *Hebe elliptica*. Confirming no *Hebe elliptica* were found during the 2023-24 season. A first since the primary treatment commenced in 2008.

A leaning from this working bee is to be better prepared for sample descriptions and photographing in-situ. The seedlings although not *Hebe elliptica* were difficult to identify. The Herbarium staff have suggested not if in doubt not to remove the seedlings until identified. This may occur during the working bee in sending a photograph to the Herbarium or if left until the next working bee it would also enable the plants to mature and improve identification.

Table 1: *Hebe elliptica* status

Year	Total No. of sites recorded	Sites checked	No. of sites weeds present	No. of weeds treated	Identified New site	Active	In-decline	Absent	Total sites Absent
Dec 23/ Mar 24	307 (incl. 2 photo-points)	71 (incl. 2 photo-points)	0	0	0	3	7 (incl. 1 photo points)	61 (incl. 1 photo points)	296
Dec 22/ Mar23	307 (incl. 2 photo-points)	120 (incl. 2 photo-points)	2	15	1	8 (incl. 1 photo points)	3	103 (incl. 1 photo points)	293
Dec 21/ Mar22	306 (incl. 2 photo-points)	201 (incl. 2 photo-points)	2	18	0	12 (incl. 1 photo-point)	8	177	285
Dec 20/ Mar21	306 (incl. 2 photo-points)	182 (incl. 2 photo-points)	8	81	0	14	8	153	280
Dec 19/ FebMar 20	306 (incl. 2 photo-points)	122 (incl. 2 photo-points)	4	19	2	16	12	67	273
Dec 18/ FebMar 19	306 (incl. 2 photo-point)	193 (incl. 2 photo-point)	14	24	0	33	10	148	256
Dec17/ March 18	306 (incl. 2 photo-point)	202 (incl. 2 photo-point)	6	7	0	32	22	146	N/A
Mar17/ Dec 16	300	186	15	33	1	28	21	136	N/A
*March 2016	300	300	22	100	1	55	87	157	N/A

*Fulcrum implemented March 2016.
N/A data not available

1.3 Blackberry follow-up control

All the previously recorded blackberry sites ('active' and 'in-decline' and remaining large area infestation site BB1 (Zone 49) and Olympic Pool (Zone 27) were checked with the 'Go To' method. BB2 Zone 48 and BB3 Zone 54 was covered by hip-chain survey method.

A total of 111 sites were checked (including the two photo points). Of these sites;7 remain 'Active', 1 remains 'In Decline' and 92 as 'Absent' (including two photo points). Weeds were recorded and treated at 3 sites, with a total of 4 weeds removed with no new sites recorded. All blackberry were found at previously recorded sites. Of the 183 total sites recorded, 173 are now recorded as 'absent'.

Blackberry were removed using a cut and paste method using poison (as outlined in Table 5). All weeds were bagged and removed from the site and disposed of off-island.

Observations

Blackberry was found in 2 locations during the hip-chain survey and one near to the station with the 'Go To' method. 2019-2020 is the last season that blackberry has been found during survey or sweep of zones. Recommend a survey or at least a sweep be undertaken annually in Zone 54 (BB3) while active or in-decline sites are present.

Table 2: Blackberry status

Year	Total No. of sites recorded	Sites checked	No. of sites weeds present	No. of weeds treated	Identified New site	Active	In decline	Absent	Total sites Absent
Dec 23/ Mar 24	183 (incl. 2 photo-points)	111 (incl. 2 photo-points)	3	4	0	7	1	92 (incl. 2 photo-points)	173
Dec 22/ Mar 23	183 (incl. 2 photo-points)	38 (incl. 2 photo-points)	2	2	0	8	9	16 (incl. 2 photo-points)	163
Dec 21/ Mar 22	183 (incl. 2 photo-points)	86 (incl. 2 photo-points)	4	5	2	14	4	66 (incl. 2 photo-points)	160
Dec 20/ Mar 21	181 (incl. 2 photo-points)	156 (incl. 2 photo-points)	2	4	1	16	1	139 (incl. 2 photo-points)	160
Dec 19/ FebMar 20	180 (incl. 2 photo-points)	141 (incl. 2 photo-points)	12	21	2	15	8	115	153
Dec 18/ FebMar 19	180 (incl. 2 photo-point)	91 (incl. 2 photo-point)	5	9	0	15	17	59	142
Dec17/ March18	180 (incl. 2 photo-point)	132 (incl. 2 photo-point)	5	14	0	31	10	89	N/A
Dec 2016/ *March 2017	175	82	9	19	2	41	8	31	N/A

*Fulcrum implemented March 2017.
N/A data not available

1.4 Montbretia follow-up control

December 2023

A focus of the December working bee was to continue the follow up control for *Montbretia.* All *Montbretia* 'active' and 'in decline' and 'absent' sites were visited in December 2023. Furthermore, the method of hip-chain surveying for all three weeds, including *Montbretia,* was carried out during December 2023 and March 2024. All 161 sites were checked, and a total of 200 weeds were removed.

March 2024

Of the 7 sites again checked in March 2024, a total of 3 sites contained 6 weeds.

Of the 161 sites checked during December 2023 and March 2024, 206 weeds were recorded and treated at 21 sites. 1 new site observed by the PWS Volunteer Caretakers was treated during March. Of all recorded sites, 59 remain 'active' (including the 2 photo-points), 12 remain 'in decline' and 89 as 'absent'. There are a total of 89 'absent' sites.

Montbretia plants and corms were removed from the ground using trowels and were placed in plastic bags and disposed of off-island. No chemicals were used.

Observations

Just 1 plant was found at each of the photo-point sites in December and just 1 plant found at photo-point site number 2. This is a significant achievement.

All sites have been checked 3 times in the past 4 seasons. There are now 89 absent sites where many of these nothing has been found for 8 years or more. Recommend the next full

check be in 3 years. Extending the time between checks is also in line with the recommendations of the *Maatsuyker Island Weed Management Plan 2022-27 (Zeigler, K).*

> 'All sites should be revisited annually until no plants have been found for 3 successive years. Then checks should be reduced to every two years, then three years if no new plants regenerate. FOMI's 5 year absent is a good measure of a site being free of *Montbretia,* however in the spirit of being confident, it would be prudent to continue to monitor the sites for several years beyond the presumed eradication'.

Table 3: *Montbretia* status

Year	Total No. of sites recorded	Sites checked	No. of sites weeds present	No. of weeds treated	Identified New site	Active	In-decline	Absent	Total sites Absent
Dec 23/ Mar 24	161 (incl. 2 photo-points)	166 (incl. 2 photo-points)	21	206	1	59 (incl. 2 photo-points)	12	89	89
Dec 22 / Mar 23	159 (incl. 2 photo-points)	159 (incl. 2 photo-points)	52 (incl. 2 photo-points)	827	6	62 (incl. 2 photo-points)	10	80	80
Dec 21/ Mar22	154 (incl. 2 photo-points)	131 (incl. 2 photo-points)	25	382	0	56 (incl. 2 photo-points)	13	28	80
Dec 20/ Mar21	154 (incl. 2 photo-points)	154 (incl. 2 photo-points)	39	1954	4	40 (incl. 2 photo-points)	3	76	76
Dec 19/ FebMar20	147 (incl. 2 photo-points)	99 (incl. 2 photo-points)	41	911	1	64 (incl. 2 photo-points)	12	22	69
Dec 18/ FebMar19	142 (incl. 2 photo-point)	131 (incl. 2 photo-point)	47	634	1	81 (incl. 2 photo-points)	11	8	49
March 18	141 (incl. 2 photo-point)	141 (incl. 2 photo-point)	24	238	1	89 (incl. 2 photo-points)	0	52	N/A
Aug17/ Dec17	140	12	10	719	1	N/A	N/A	N/A	N/A
March 2017	139	23	11	187	1	N/A	N/A	N/A	N/A
*Dec 2016		115	44	738	0	N/A	N/A	N/A	N/A
Dec 2015		122	28	751	N/A	N/A	N/A	N/A	N/A
March 2015		122	32	834	N/A	N/A	N/A	N/A	N/A

*Fulcrum implemented December 2016.
N/A data not available

1.5 Californian Thistle control and other weeds

Californian Thistle: This weed species has only ever been recorded at the one location; i.e., over the bank SSW of Quarters 2. Following the recommendation of Karen Ziegler, the area was mown by the PWS Volunteer Caretakers prior to the working bees to aid visual detection of weeds. No weeds were found during this season.

Table 4: Californian Thistle status

Year	Total No. of sites recorded	Sites checked	No. of sites weeds present	No. of weeds treated	Identified (New site)	Active	In-decline	Absent	Total sites Absent
Mar 24	1	1	0	0	0	0	1	0	0
Mar 23	1	1	0	0	0	1	0	0	0
Mar 22	1	1	0	0	0	1	0	0	0
Mar 21	1	1	1	14	0	1	0	0	0
Mar 19	1	1	1	15	0	1	0	0	0
Dec 19	1	1	1	1	0	1	0	0	0
Mar 18	1	1	1	80	0	1	0	0	0
Dec 18	1	1	1	30	0	1	0	0	0

1.6 Agapanthus orientalis control

Agapanthus: There were no weeds found this season across 7 sites recorded.

1.7 Other Weeds

Common Vetch: No control undertaken.
Milk Thistle: No control undertaken.
Spear Thistle: No weeds found this season.

1.8 Weed Control program recommendations and follow-up

Table 5: Rotation of checking known absent sites

This season 2023/24 was not listed for a rotation check however all *Montbretia* sites were checked.

Weed	Year	Plan
Hebe	Dec20/Mar21/Dec21/Mar22	Dec24/Mar25
Blackberry	Mar20/Dec 20/Mar21	Dec25/Mar26
Montbretia	Dec20/mar21 Dec22/Mar23 Dec23/Mar24	Dec 26/Mar27

Hebe - recommendations

- Full check of sites this upcoming season 24/25 as per Table 5.
- Full check of sites to occur on a 3-year rotation and reviewed for effectiveness. Recommendation *Maatsuyker Island Weed Management Plan 2022-27 (Zeigler, K)* is for all zones with *Hebe elliptica* present to be check every 2 years.
- As recommended in the previous report, more information to be provided to volunteers to identify *Hebe elliptica* in particular compared with juvenile Cherry Rice-flower (*Pimelea drupacea*) and Cheesewood (*Pittosporum bicolor*). The fewer *Hebe elliptica* located, the more challenging it is to identify the difference.
- Photograph plant in-situ and press *Hebe elliptica* for identification. Consider leaving the seedlings in-situ.
- FOMI engage rope contractors no later than 2026 to revisit CS004 and CS003 as well as to continue the search areas north of CS003.

Blackberry - recommendations

- Included in overall recommendations.
- Survey or sweep Zone 54 during 2024-25 season.

***Montbretia* - recommendations**

- Recommend the next full check of sites be in 3 years as per Table 5.

***Californian Thistle* - recommendations**

- Continue to follow the mowing plan as per the new *Maatsuyker Island Weed Management Plan 2022-27,* K. Ziegler 2022
- Ensure PWS staff and PWS Volunteer Caretakers are made aware of this weed and the importance of not moving the soil from this location as the weed may be spread by rootstock.

***Other Weeds* - recommendations**

Agapanthus orientalis: Monitor sites where plants removed and sprayed.
Spear Thistle: Continue to monitor and remove by dig and dispose or cut and drop.
Common Vetch: Continue to monitor for signs of spread beyond the cultivated areas.
Milk Thistle: Continue to monitor for signs of spread beyond the cultivated areas.
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Overall Recommendations

- Refer to new *Maatsuyker Island Weed Management Plan 2022-27,* K. Ziegler 2022 for recommendations going forward.
- Provide guidance to volunteers when surveying to check in and around thickets if unable to go through. Reinforcing the need to stay in a line and communicate with team alongside.
- All sites where weeds found to be marked with flagging tape (include weed and date found) or add new date to existing flagging tape.
- Use Zone table to plan future survey with the aim to survey active zones at least each 2–3 years, in particular where *Hebe elliptica* and blackberry recorded.
- Use the sweep method on alternate years to the hip-chain method in zones that require regular montitoring.
- In the 2024-25 season undertake the next rotation, as per Table 5, checking all sites (including ‘absent’ sites) above and below the road, with 1 target weed each season. To be assessed if the approach is effective for ongoing monitoring.
- Where practicable change direction of hip-chain survey lines, i.e. from east/west to north/south. This is beneficial as it provides different viewpoints and can provide a more efficient search area cover.
- Plastic bags to be carried in the field to contain and remove seeding plants.
- Cardboard pieces to be carried in the field to assist with the reconstruction of shearwater burrows which may be accidently collapsed.
- Discuss with PWS the offer from the Herbarium to create a plant library both at the Herbarium and on island.

Chemical use - log of works

Project: Friends of Maatsuyker Island Weed Control Program

Name of person/people on site: Marina Campbell December 2023 and March 2024

Name of Client: Tasmania Parks and Wildlife Service

Site of works (property name, road, reserve etc.): Maatsuyker Island, Tasmania SW National Park and Tasmania Wilderness World Heritage Area

Weeds treated/method:
1. Blackberry – cut and paint (dabber)
2. Hebe elliptica – cut and paint (dabber)
3. Montbretia – (dig and dispose)

Herbicide used / rate of application / surfactant if applicable / dye / method of application etc.:

Dates	Method	Poison	Rate
10-15 Dec 23 9-18 Mar 23	*(Montbretia)* Chemical used Nil Dig and disposed	Spraymate dye	10 mls/10 litres
		Glyphosate green 360 apparent	130 mls/10 litres
		Activator surfactant (Pulse Penetrant)	10-20 mls/10 litres
10-15 Dec 23 9-18 Mar 24	*(Californian Thistle and Agapanthus orientalis)* Chemicals used Nil No weeds present	Spraymate dye	10 ml/10 litres 1 ml/1.25 litres
		Lontrel	30 ml/10 litres 4 ml/1.25 litres
		Activator surfactant	10-20 ml/10 litres 2.5 ml/1.25 litres
10-15 Dec 23 9-18 Mar 24	Cut and paste with use of a dabber (blackberry and *Hebe elliptica*) Chemicals used Dec 23 <10 mil Chemicals used Mar 24 <20 mil	Spraymate dye	10 mls/10 litres
		Apparent Glyphosate green 360 apparent	100%

Mapping: A log of GPS waypoints of locations where weeds have been treated is recorded and mapped with use of Fulcrum App

PER84775 THIS PERMIT IS IN FORCE FROM 22 JUNE 2017 TO 30 SEPTEMBER 2025

Table 6: Poison and Technique Information

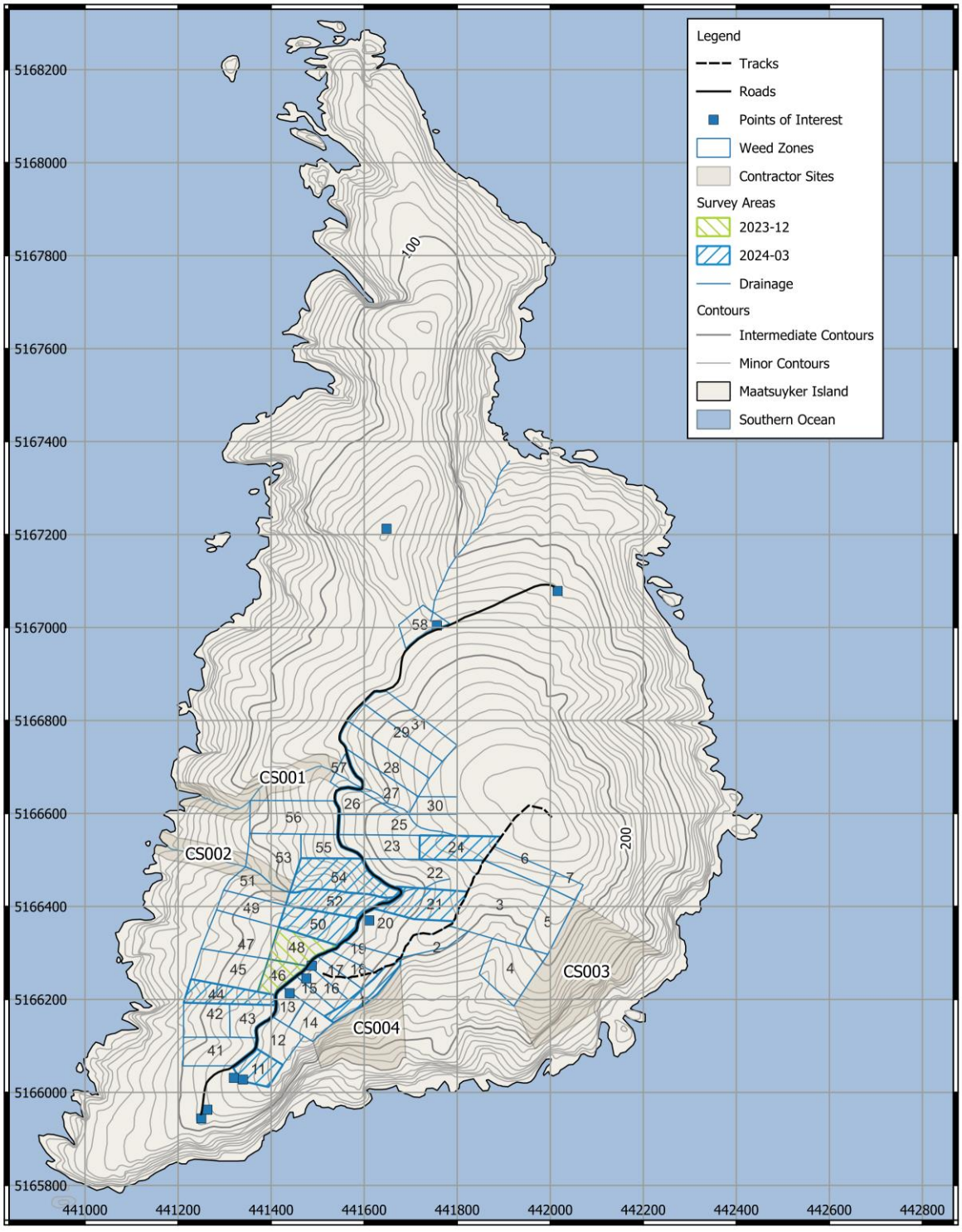
Date	Start time	Finish time	Number of people	Weather	Temperature (°C)	Humidity
12/12/23	2.00 pm	2.30 pm	2	Cloudy NNW 11knt	16°	51%
10/03/23	10.30 am	5.30 pm	8	Overcast 33knt	15°	85%
12/03/23	8.30 am	5.30 pm	5	Partly cloudy 23knt	14°	65%

Table 7: Zones surveyed and future season survey

Zone	ha	Dec 13	Dec 14	15/16	16/17	17/18	18/19	19/20	20/21	Zone change to re-align road	21/22	22/23	23/24	24/25
1	0.482	survey	survey	survey		survey	survey	survey	survey	0.482	survey	sweep	sweep	sweep
2	0.459			survey			survey	survey	survey	0.458	survey		sweep	sweep
3	2.17	survey	survey	survey	survey	survey	survey		survey	2.282	sweep	survey		survey
4	1.174		survey	survey						1.172	survey			
5	0.849	survey	survey	survey	survey				survey	0.848				
6	NIU	NIU	NIU	NIU	NIU	NIU	NIU	NIU	NIU	0.738		survey		
7	NIU	NIU	NIU	NIU	NIU	NIU	NIU	NIU	NIU	0.322				
8-10														
11	0.485	survey								0.507			survey	
12	0.586	survey								0.608				
13	0.288	survey								0.312				
14	0.425	survey								0.414				
15	0.314	survey		survey		survey				0.326		survey		
16	0.371	survey		survey				survey	survey	0.381		survey		
17	0.357	survey		survey					survey	0.369				survey
18	0.393	survey	survey						survey	0.401				survey
19	0.48	survey	survey							0.451	survey			
20	1.139	survey	survey				survey			1.17				survey
21	0.948	survey	survey		survey	survey	survey			0.956	survey		survey	
22	1.383	botto m survey	survey						survey Dec20	1.351				
23	0.802		survey						survey	0.78				
24	0.817		survey							0.816			survey	
25	1.122		botto m survey							1.128	survey			
26	0.46		survey							0.475	survey			
27	2.25		survey							0.795	survey			
28	1.748									1.554				survey
29	2.044	NIU	NIU	NIU	NIU	NIU	NIU	NIU	**in use**	1.477				survey
30		NIU	NIU	NIU	NIU	NIU	NIU	NIU	NIU	0.354	survey			
31-40	NIU			NIU	NIU	NIU	NIU	NIU	NIU		NIU	NIU		NIU
41	0.927		survey							0.852				survey
42	0.727		survey							0.727				survey
43	0.605		survey						survey	0.525				survey
44	0.712		survey							0.694			survey	
45	1.036									1.035		survey		
46	0.511			survey		survey	survey	survey	survey	0.425	survey	survey	survey	
47	1.14									1.138	survey			
48	0.724			survey		survey	survey	survey	survey	0.674	survey	sweep	survey	
49	0.65					survey		survey		0.649				
50	0.939					survey				0.878			survey	
51	0.571							survey		0.57				
52	0.952			survey	survey			survey		0.855			survey	
53	1.132									1.13				
54	1.313			survey	survey	survey		survey	survey	1.277	sweep		survey	sweep
55	0.51								survey	0.486				
56	1.392									1.337				
57	0.401									0.237				
58	0.557									0.452				
CS001	1.826							survey						
CS002	1.523							survey						
CS003	4.574							survey	survey			sweep		sweep
CS004	2.458							survey						
Total area	**34.301 Plus CS 10.381**			**9.679**	**5.982**	**6.8**	**6.433**	**6.033 Not incl. CS**	**10.929 Not incl. CS003**	**37.574 Plus CS 10.381**	**8.508 Plus 3.559 sweep**	**6.893 Plus approx 3 sweep**	**7.082 Plus approx 1 sweep**	

NIU – not in use, Current zones in use from 15/16. Dec 13 and Dec 14 aligned as closely as feasible to the exiting zones.CS001, CS002, CS003, CS004 – set out March 2020 as rope access. Note parts of these are also accessible without the use of rope.

Maps

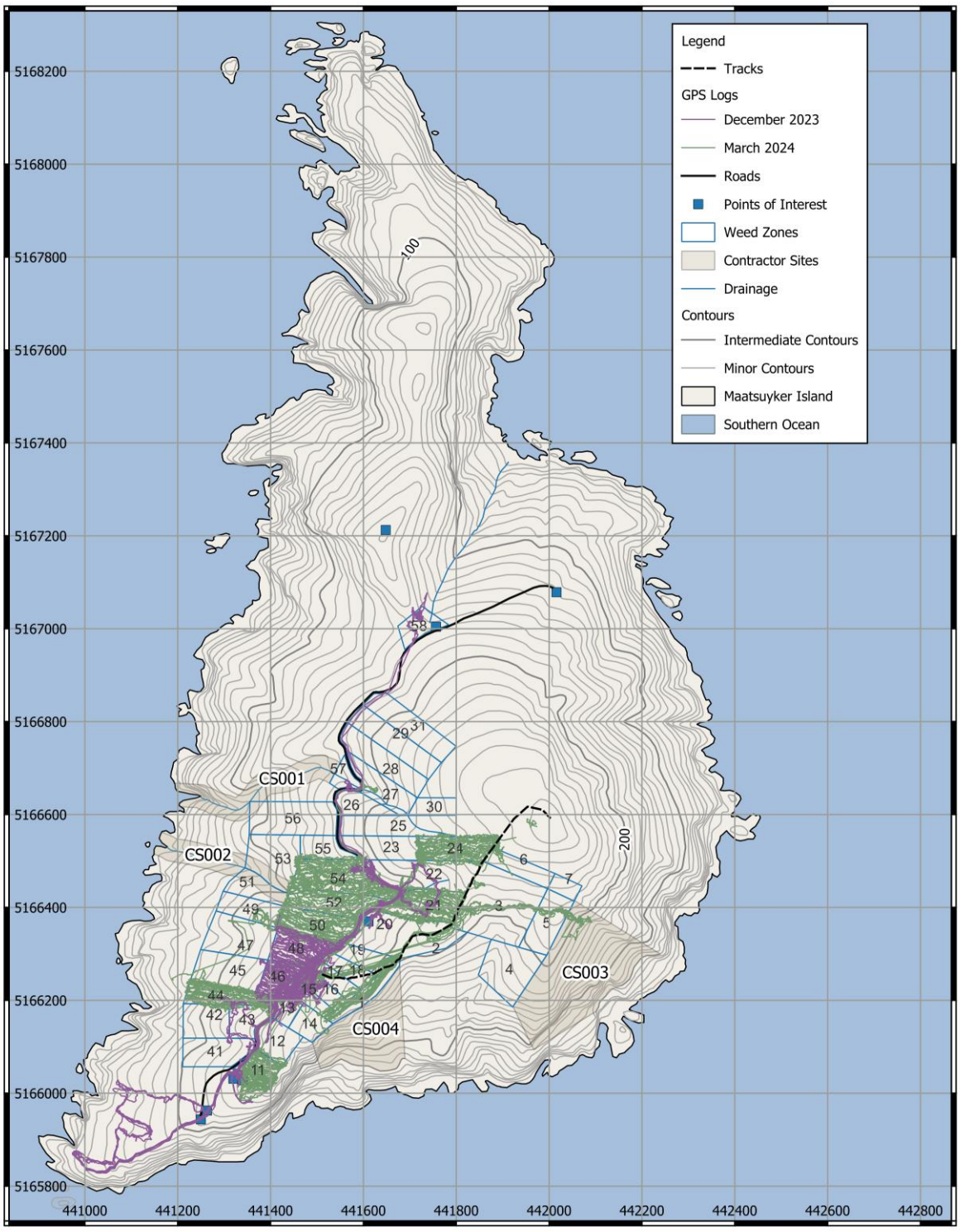


Wildcare - Friends of Maatsuyker Island
Map 1 - Survey Areas (covered in hip-chain survey) -
December 2023 - March 2024

QGIS

100 0 100 200 m

GDA94 Zone 55



Wildcare - Friends of Maatsuyker Island
Map 2 - Survey Area Track Logs Dec 2023 - March 2024

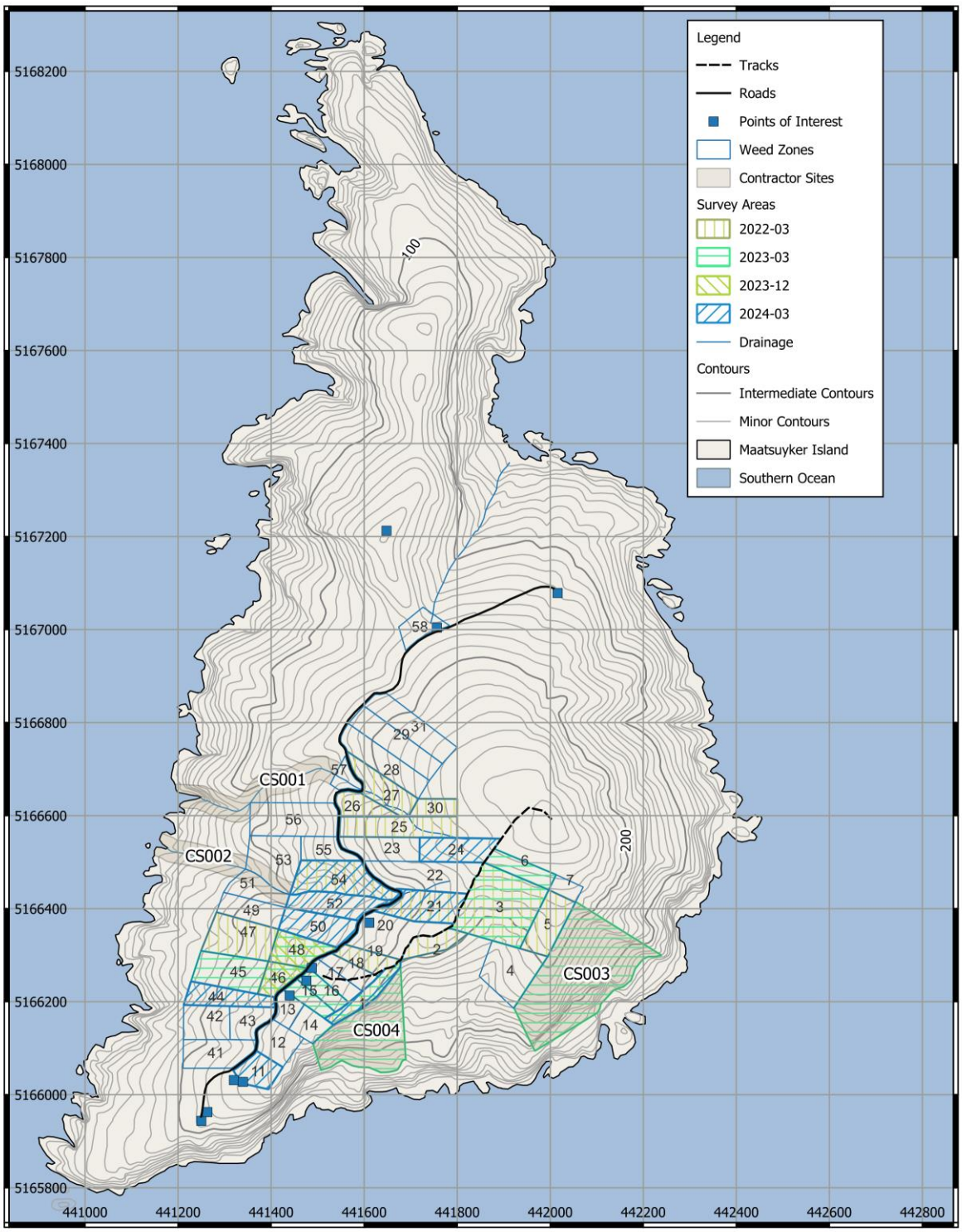
QGIS

100 0 100 200 m

N

GDA94 Zone 55

Wildcare Tasmania

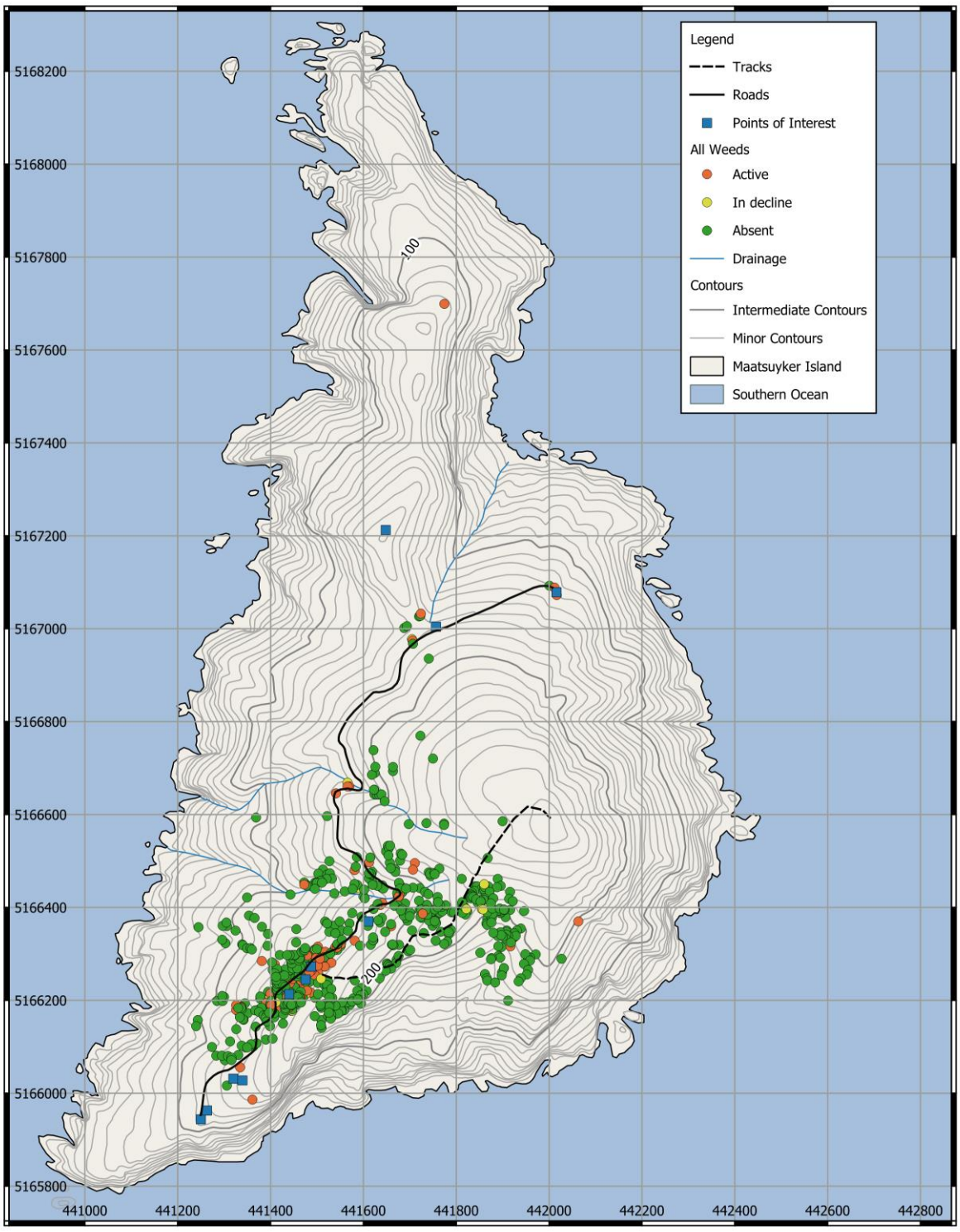


Wildcare - Friends of Maatsuyker Island
Map 3 - Survey Areas - 2022 - 2024

QGIS

100 0 100 200 m

GDA94 Zone 55



Wildcare - Friends of Maatsuyker Island
Map 4 - All Weeds - March 2024

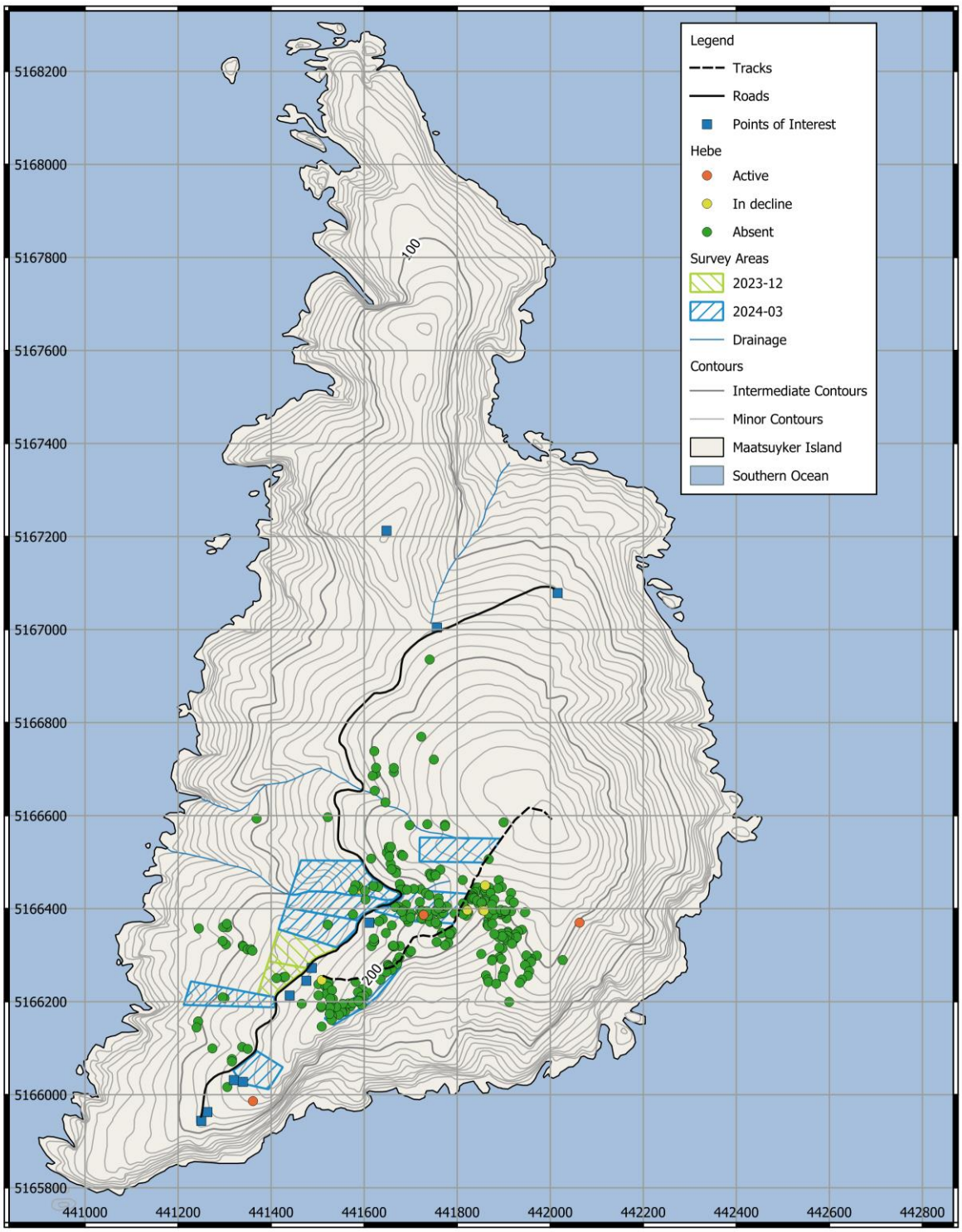
QGIS

100 0 100 200 m

N

GDA94 Zone 55

Wildcare Tasmania



Wildcare - Friends of Maatsuyker Island
Map 5 - Hebe Status - March 2024

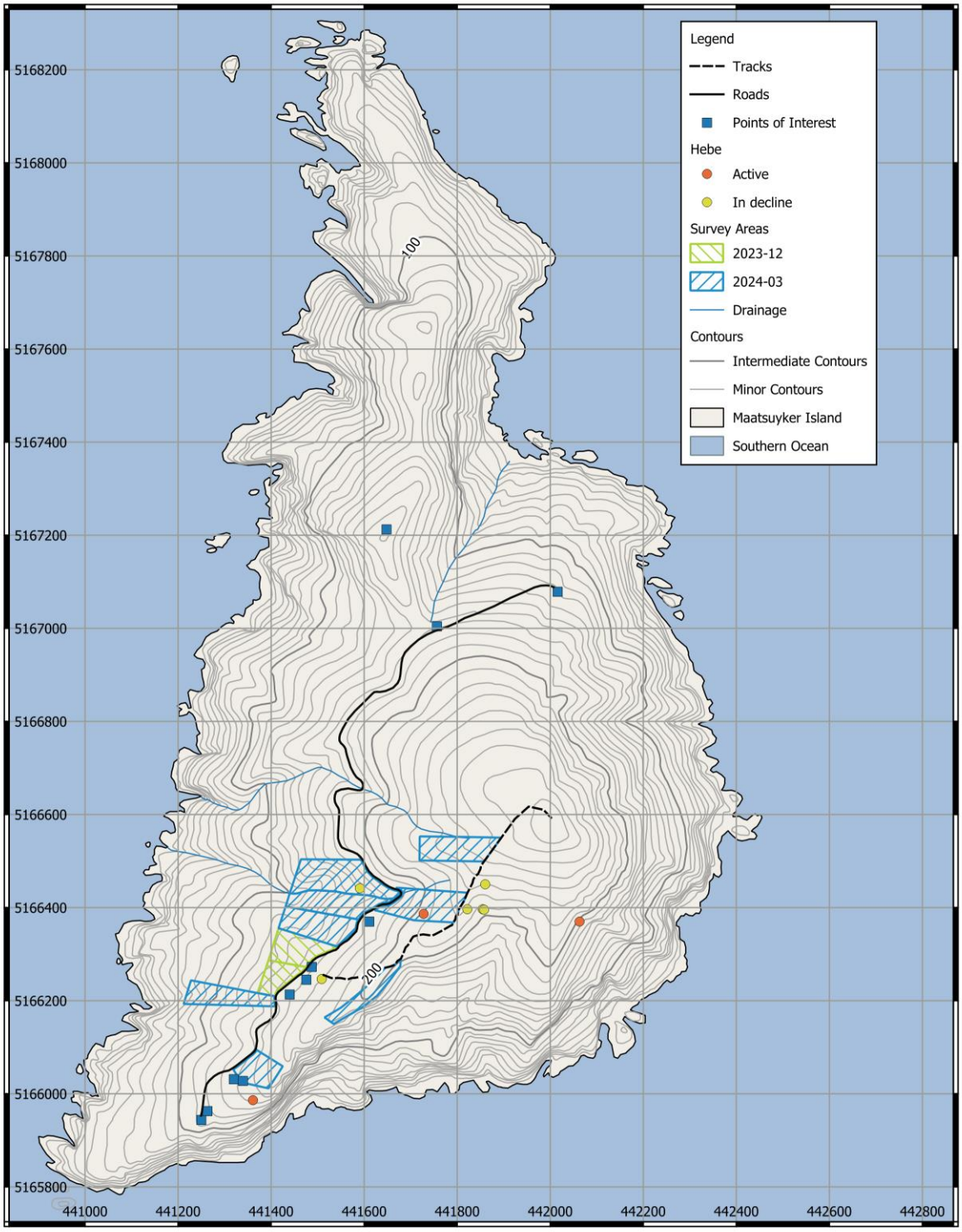
QGIS

100 0 100 200 m

N

GDA94 Zone 55

Wildcare Tasmania



Wildcare - Friends of Maatsuyker Island
Map 5A - Hebe Status (Active, In Decline only) - March 2024

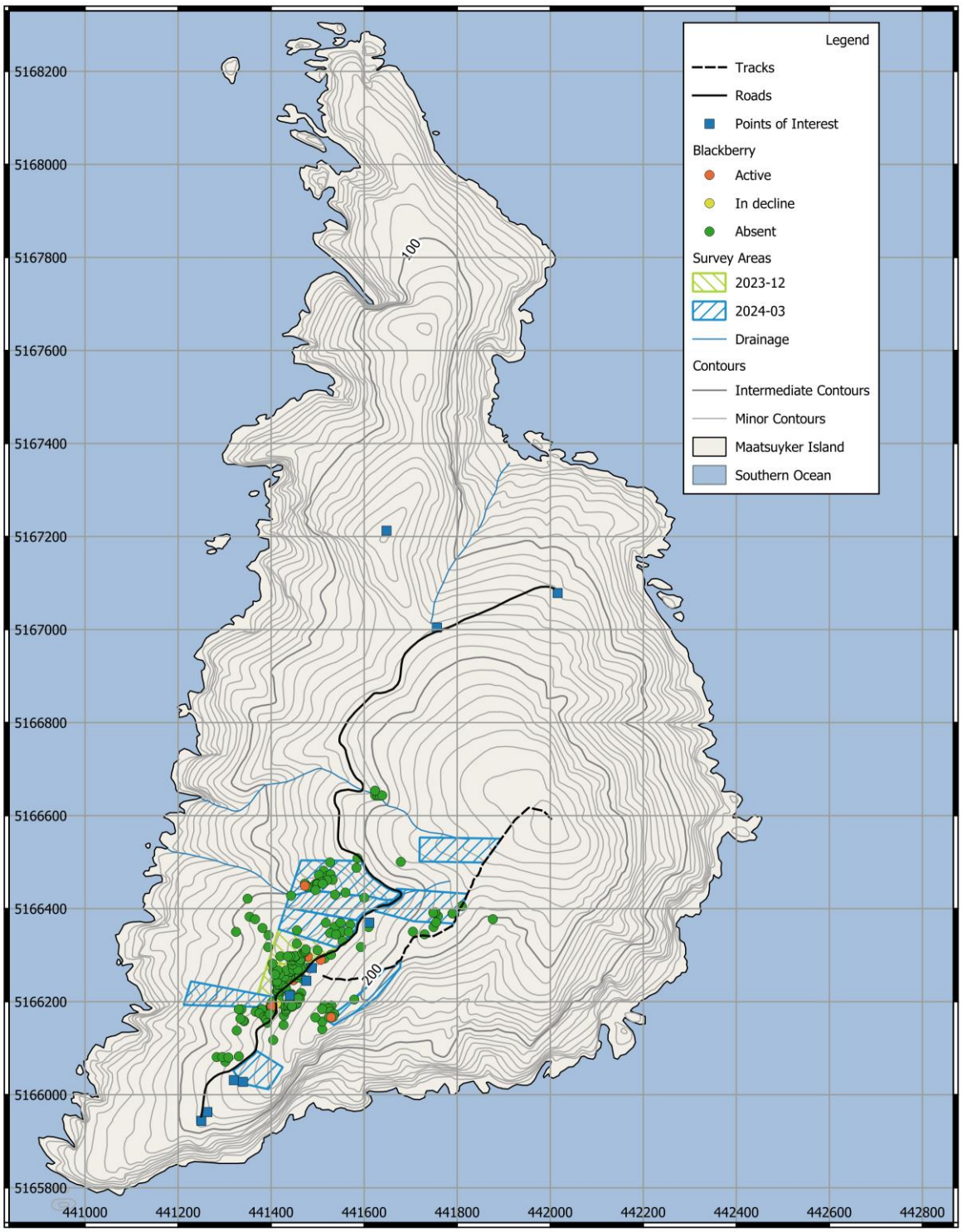
QGIS

100 0 100 200 m

N

GDA94 Zone 55

Wildcare Tasmania



Wildcare - Friends of Maatsuyker Island
Map 6 - Blackberry Status - March 2024

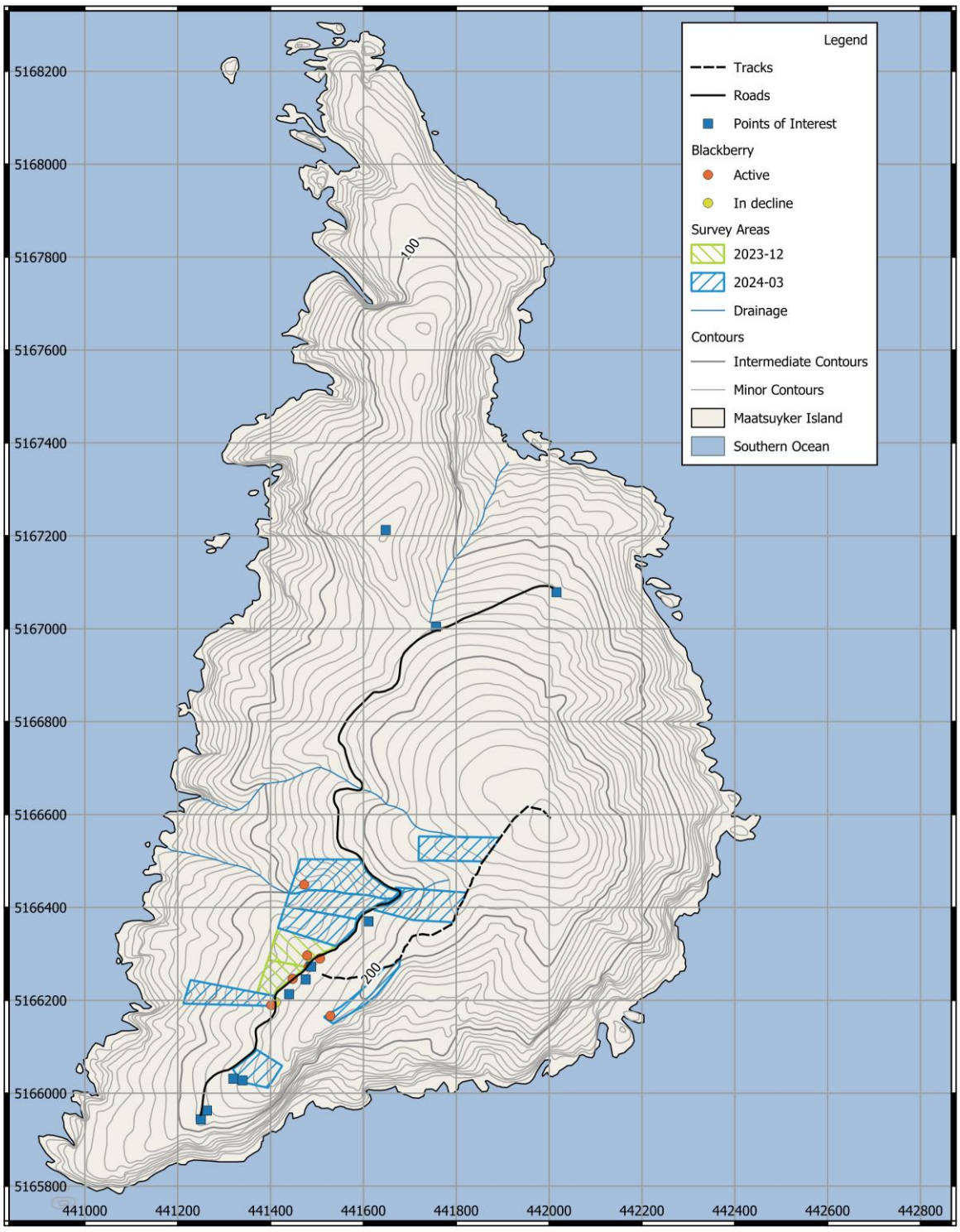
QGIS

100 0 100 200 m

N

GDA94 Zone 55

Wildcare Tasmania



Wildcare - Friends of Maatsuyker Island
Map 6a - Blackberry Status (Active, In Decline Only) - March 2024

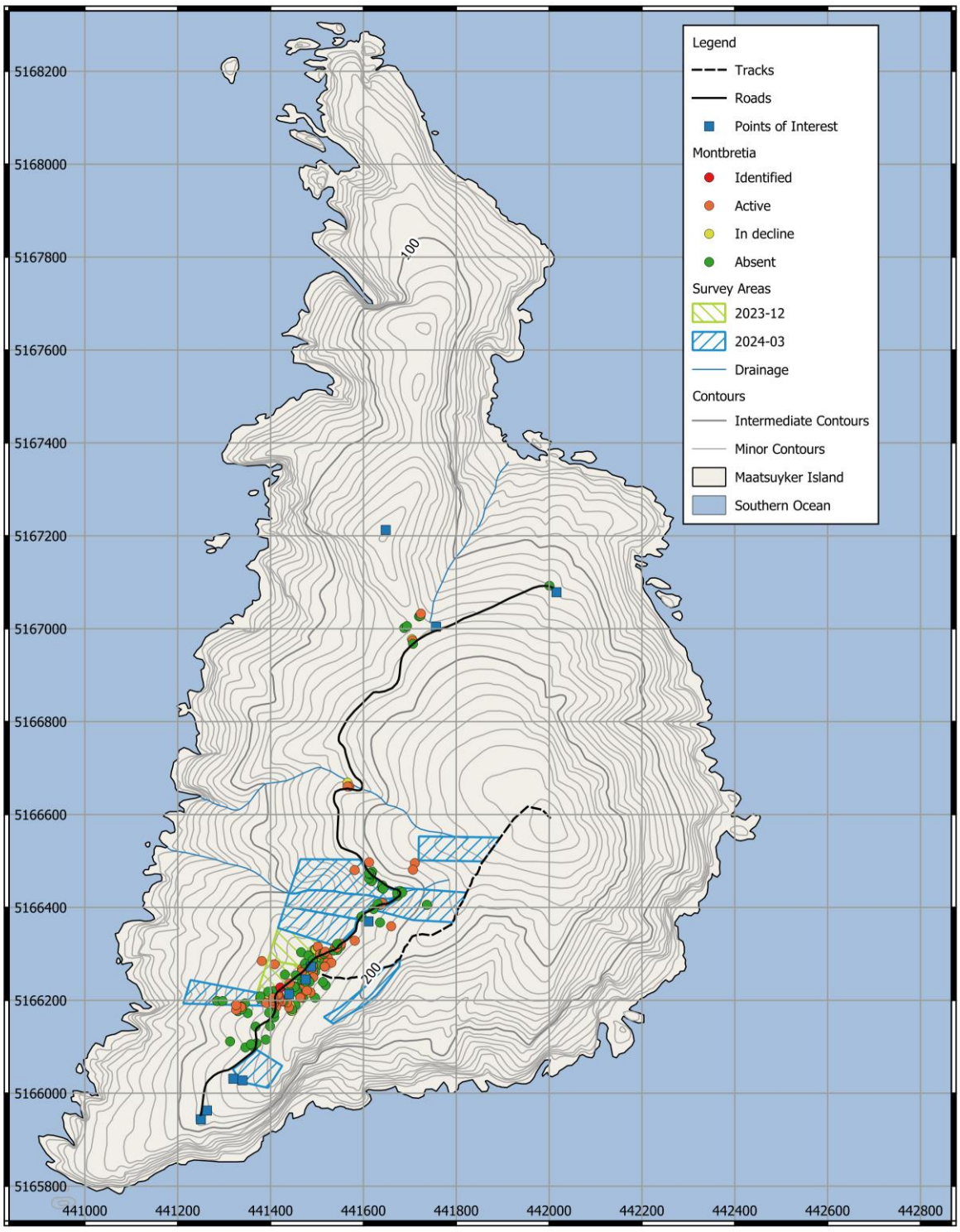
QGIS

100 0 100 200 m

N

GDA94 Zone 55

Wildcare Tasmania



Wildcare - Friends of Maatsuyker Island
Map 7 - Montbretia Status - March 2024

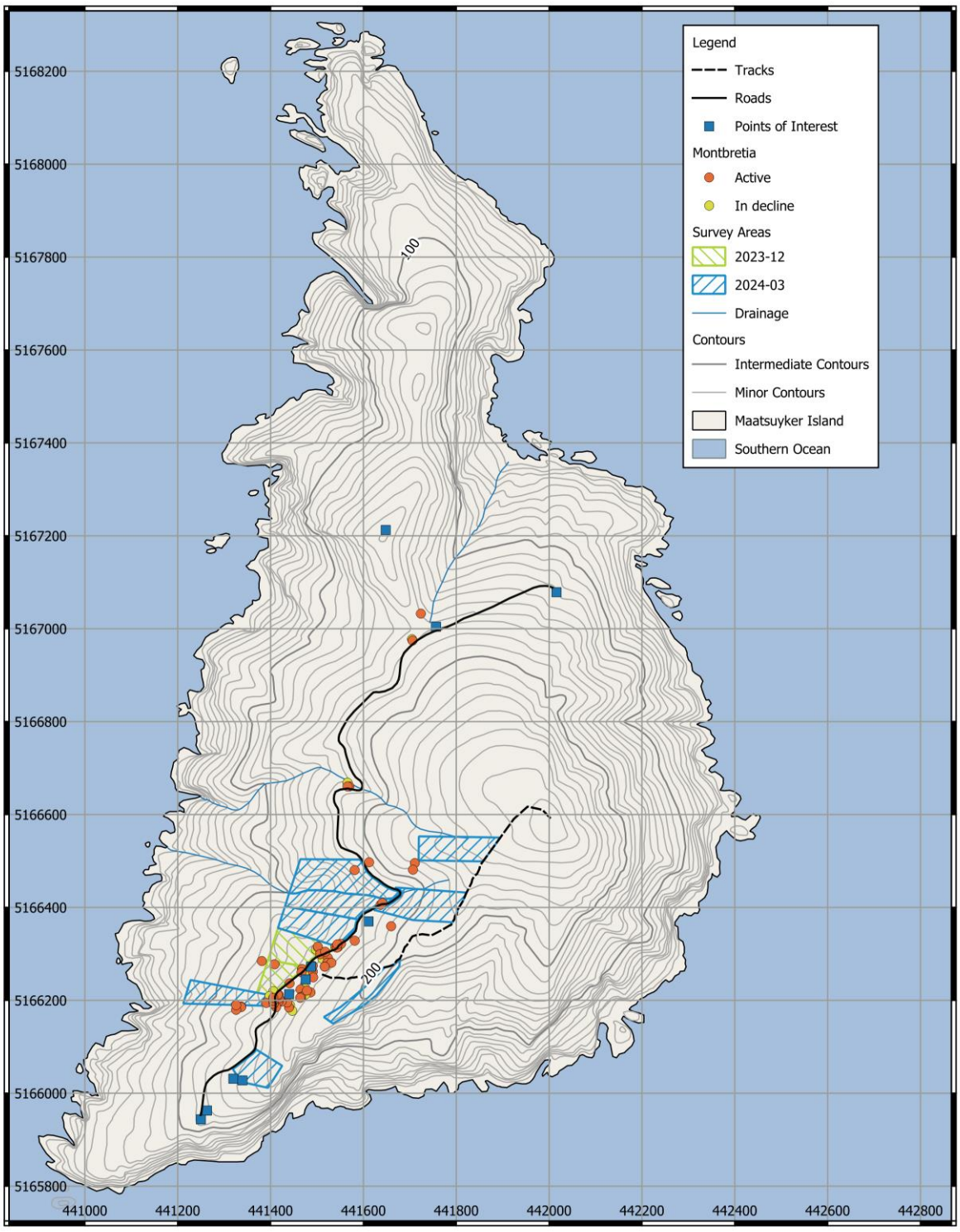
QGIS

100 0 100 200 m

N

GDA94 Zone 55

Wildcare Tasmania



Wildcare - Friends of Maatsuyker Island
Map 7a - Montbretia Status (Active and In Decline Only) - March 2024

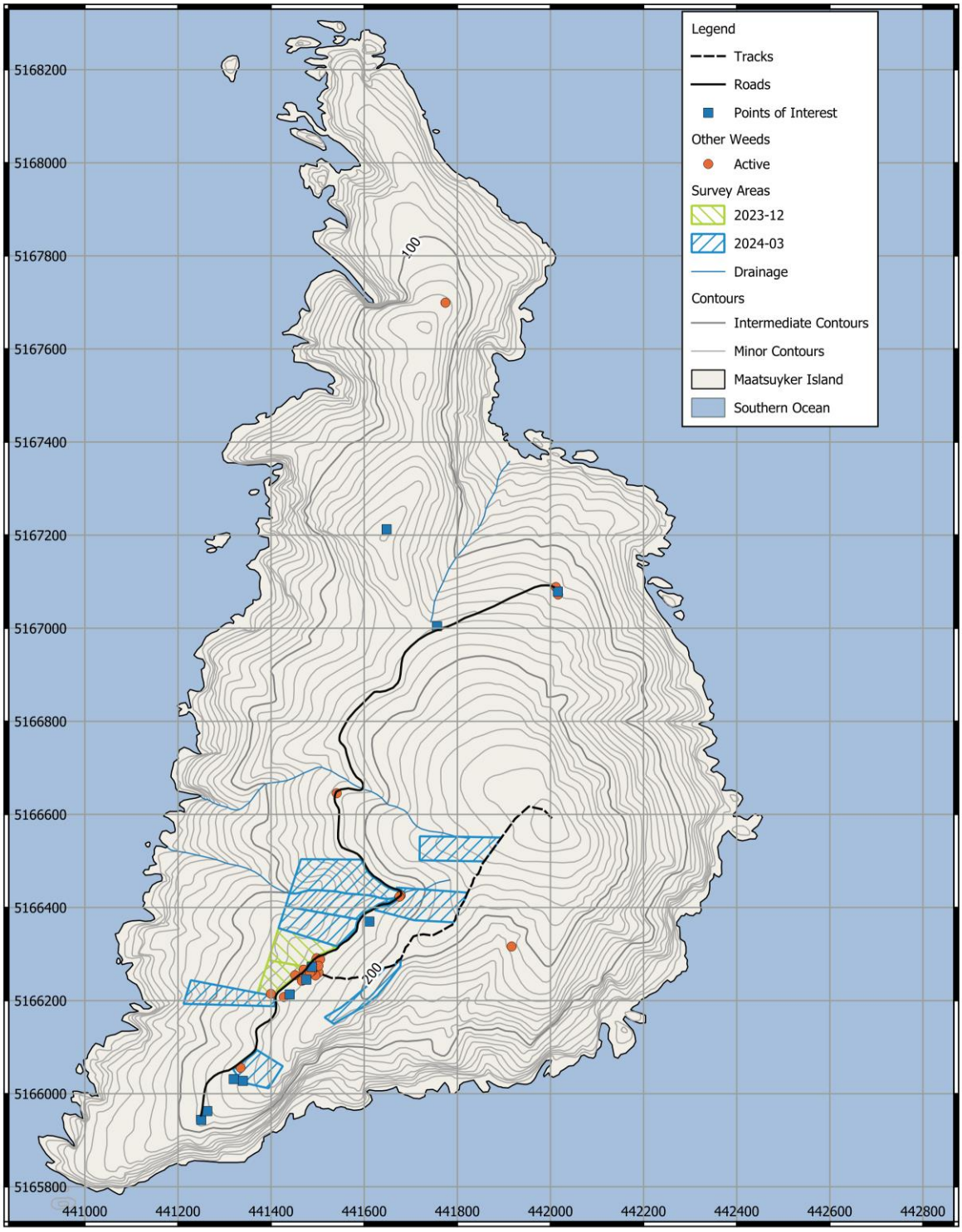
QGIS

100 0 100 200 m

N

GDA94 Zone 55

Wildcare Tasmania



Wildcare - Friends of Maatsuyker Island
Map 8 - Other Weeds Status - March 2024

QGIS

100 0 100 200 m

GDA94 Zone 55

Previous Reports

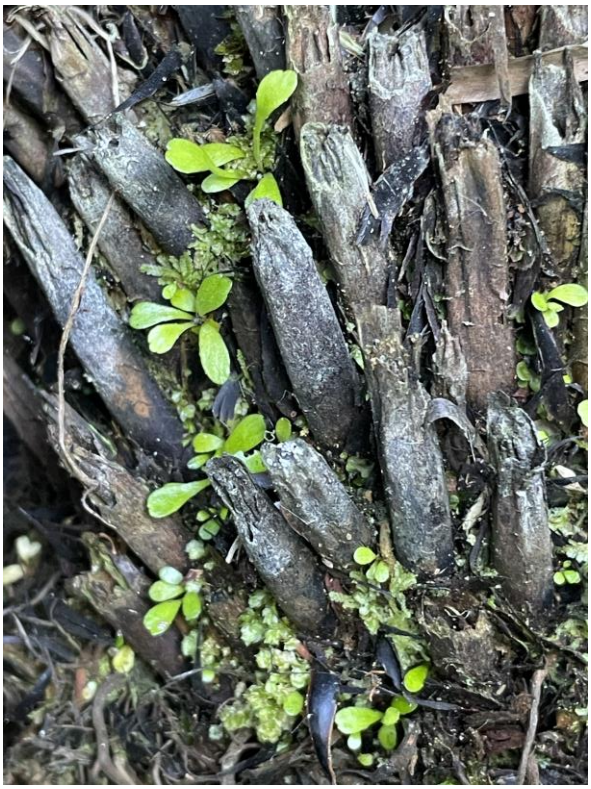
1. Ziegler, K., Kiefer, K. and Bonwick, V. 2004. *Blackberry, Montbretia and Hebe Control - Maatsuyker Island.* Friends of Maatsuyker Island, Wildcare Inc., Tasmania.
2. Saunders, C. 2007. *Maatsuyker Island, Follow Up Weed Control, 7-13 February 2005,12-18 February 2006 and 5-11 March 2007.*
3. Ziegler, K., Cronin, S. & Saunders, C. 2008. *Weed Control: Blackberry, Montbretia, Hebe – Maatsuyker Island 2008.* Friends of Maatsuyker Island, Wildcare Inc., Tasmania.
4. Saunders, C. 2009. *Maatsuyker Island Weed Control Project, 10 – 20 November 2008.* Friends of Maatsuyker Island, Wildcare Inc., Tasmania.
5. Ziegler, K. 2009. *Maatsuyker Island Weed Control Project, 18– 27 March 2009.* Friends of Maatsuyker Island, Wildcare Inc., Tasmania.
6. Ziegler, K. 2010. *Maatsuyker Island Weed Control Project, 12 – 19 February 2010.* Friends of Maatsuyker Island, Wildcare Inc., Tasmania.
7. Ziegler, K., Cronin, S. & Campbell, V. 2011. *Maatsuyker Island - Weed Control,* Friends of Maatsuyker Island, Wildcare Inc., Tasmania.
8. Campbell, V. (2012) *Maatsuyker Island Weed Control Project, 7 – 14 February 2012*
9. Scott, J., Campbell, V. & Campbell, M. (2013) *Maatsuyker Island Weed Control, Building Maintenance and Objects Catalogue Working Bee Report, 21 – 27 February 2013*
10. Campbell, V., Scott, J., & Campbell, M. (2014) *Maatsuyker Island Weed Control, Shearwater Monitoring and Building Maintenance Working Bee Report, 7 – 16 December 2013*
11. Hamilton, S. and Hedley, G. 2014. Shearwater Research Program Trip Report - 7-16 December 2013. Population census and monitoring of short-tailed shearwaters (*Ardenna tenuirostris*) and sooty shearwaters (*A. grisea*) on Maatsuyker Island. Friends of Maatsuyker Island, Wildcare Inc., Tasmania.
12. Campbell, M., Saunders, A., Hamilton, S. & Campbell, V. (2015) *Maatsuyker Island Weed Control and Shearwater Monitoring Working Bee Report, 13 – 17 March 2015.*
13. Saunders, A., Campbell, M. & Hamilton, S. (2015) *Maatsuyker Island Weed Control and Shearwater Monitoring Working Bee Report, Friends of Maatsuyker Island Wildcare Inc., 1 - 7 December 2015.*
14. Campbell, M., Saunders, A., & Hamilton, S. (2016) *Maatsuyker Island Weed Control, Shearwater Monitoring, Building Maintenance, Lighthouse Restoration and Catalogue of Objects Working Bee Report, Friends of Maatsuyker Island Wildcare Inc.,* 1-11 March 2016.
15. Hamilton, S. (2017). *Short-tailed Shearwater Monitoring Program: 2016/17 Breeding Season Report.* Friends of Maatsuyker Island (Wildcare Inc.)
16. Campbell, M., Saunders, A., & Hamilton, S., Fehlberg, R. (2017) *Maatsuyker Island Weed Control, Shearwater Monitoring, Building Maintenance and Lighthouse Restoration Working Bee Report, Friends of Maatsuyker Island Wildcare Inc.,* 1-6 December 2016 and 1-9 March 2017.
17. Campbell, M. (2018) *Maatsuyker Island Weed Control, Shearwater Monitoring, Building Maintenance and Lighthouse Restoration Working Bee Report, Friends* of Maatsuyker Island Wildcare Inc., 27 November - 7 December 2017 and 27 February - 5 March 2018.
18. Campbell, M., Saunders, A., (2018) *Maatsuyker Island Weed Control Program: December 2017 and February/March Season 2018 Report.* Friends of Maatsuyker Island (Wildcare Inc)
19. Campbell, M., Saunders, A., Stone, J., & Wyatt, P. (2019) *Maatsuyker Island Weed Control Program: December 2018 and February/March Season 2019 Report.* Friends of Maatsuyker Island (Wildcare Inc)
20. Campbell, M. (2019) *Maatsuyker Island Weed Control, Shearwater Monitoring, Building Maintenance and Lighthouse Restoration Working Bee Report,* Friends of Maatsuyker Island Wildcare Inc., 9 – 13 December 2018 and 26 February – 9 March 2019.
21. James, D & Campbell, M. (2020). *Weed Action grant Steep Terrain Weed Control Maatsuyker Island February/March 2020*. Friends of Maatsuyker Island (Wildcare Inc).
22. Campbell, M., Saunders, A., & Wyatt P. (2020) *Maatsuyker Island Weed Control Program: December 2019 and February/March Season 2020 Report.* Friends of Maatsuyker Island (Wildcare Inc)
23. Campbell, M. (2020) *Maatsuyker Island Weed Control, Shearwater Monitoring, Building Maintenance Working Bee Report,* Friends of Maatsuyker Island Wildcare Inc., 10 – 14 December 2019 and 28 February – 9 March 2020.
24. Campbell, M., Saunders, A., & Wyatt P. (2021) *Maatsuyker Island Weed Control Program: December 2020 and March Season 2021 Report.* Friends of Maatsuyker Island (Wildcare Inc)
25. Campbell, M. (2021) *Maatsuyker Island Weed Control, Shearwater Monitoring, Building Maintenance Working Bee Report,* Friends of Maatsuyker Island Wildcare Inc., 6 - 11 December 2020 and 8 – 18 March 2021.
26. Campbell, M., Saunders, A., & Wyatt P. (2022) *Maatsuyker Island Weed Control Program: December 2021 and March Season 2022 Report.* Friends of Maatsuyker Island (Wildcare Inc)
27. *Maatsuyker Island Weed Control, Shearwater Monitoring, Building Maintenance Working Bee Report,* Friends of Maatsuyker Island Wildcare Inc., 6 - 10 December 2021 and 8 – 18 March 2022.
28. *Maatsuyker Island Weed Control, Shearwater Monitoring, Building Maintenance Working Bee Report,* Friends of Maatsuyker Island Wildcare Inc., 30 November – 7 December 2022 and 5 – 19 March 2023.

Appendix 1 – Photos of seedlings from HB306 and Hebe Central (Zone 1) provided to the Herbarium for ID.

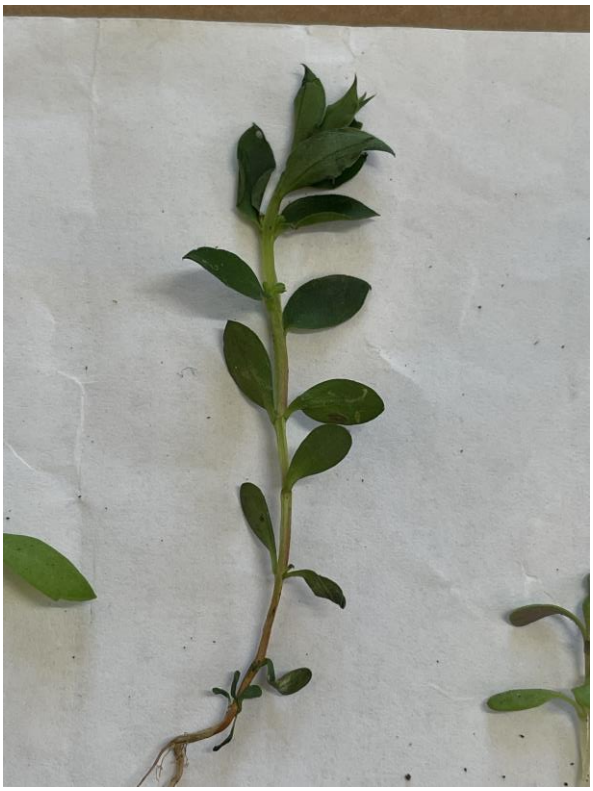
Hebe Central photo (10 March 2024) 1 of 2 – confirmed as Cherry Rice-flower (*Pimelea drupacea*)

Hebe Central photo (10 March 2024) 2 or 2 – confirmed as Cherry Rice-flower (*Pimelea drupacea*).

HB306 photo 1 of 5 (17 March 2024) – confirmed not to be *Hebe elliptica*



HB306 photo 2 of 5 (17 March 2024) – confirmed not to be *Hebe elliptica*



HB306 photo 3 of 5 (17 March 2024) – confirmed not to be *Hebe elliptica*

HB306 photo 4 of 5 (17 March 2024) – confirmed not to be *Hebe elliptica*

HB306 photo 5 of 5 (17 March 2024) – confirmed not to be *Hebe elliptica*