



# Reserve Activity Plan 2015 – 2019

## POTTERS HILL BUSHLAND RESERVE

ADVICE PREPARED BY  
WELLING CONSULTING  
FOR THE  
CLARENCE CITY COUNCIL  
DECEMBER 2014





Welling Consulting

Environment | Manage | Conserve

Level 2, 32 Murray Street Hobart, [andrew@wellingconsulting.com.au](mailto:andrew@wellingconsulting.com.au)

## **CONTENTS**

<b>1. BACKGROUND .....</b>	<b>2</b>
<b>1.1. REVIEW OF RESERVE ACTIVITY PLAN .....</b>	<b>2</b>
<b>2. SITE DESCRIPTION .....</b>	<b>3</b>
<b>3. NATURAL VALUES OF SITE .....</b>	<b>5</b>
<b>3.1 NATIVE VEGETATION COMMUNITIES.....</b>	<b>5</b>
<b>3.2 NATIVE FLORA VALUES.....</b>	<b>5</b>
<b>3.3 NATIVE FAUNA VALUES .....</b>	<b>7</b>
<b>3.4 GEOCONSERVATION VALUES .....</b>	<b>7</b>
<b>3.5 CULTURAL HERITAGE .....</b>	<b>8</b>
<b>3.6 EUROPEAN HISTORY .....</b>	<b>8</b>
<b>4 COMMUNITY CONSULTATION .....</b>	<b>9</b>
<b>5 MANAGEMENT ISSUES AND THREATS .....</b>	<b>11</b>
<b>5.1 WEED MANAGEMENT.....</b>	<b>11</b>
<b>5.2 MANAGEMENT OF FAUNA HABITAT/TREES.....</b>	<b>13</b>
<b>5.3 BIODIVERSITY CORRIDOR LINK .....</b>	<b>14</b>
<b>5.4 REVEGETATION .....</b>	<b>14</b>
<b>5.5 FIRE MANAGEMENT .....</b>	<b>15</b>
<b>5.6 ACCESS TO RESERVE .....</b>	<b>16</b>
<b>5.7 WALKING TRACKS AND FUTURE LINKAGES .....</b>	<b>17</b>
<b>5.8 AMENITIES.....</b>	<b>18</b>
<b>5.9 RESERVE SIGNAGE .....</b>	<b>19</b>
<b>5.10 COMMUNITY INPUT INTO RESERVE MANAGEMENT .....</b>	<b>19</b>
<b>6 MONITORING AND EVALUATION.....</b>	<b>20</b>
<b>6.1. PHOTOPOINTS .....</b>	<b>21</b>
<b>7 IMPLEMENTATION PLAN .....</b>	<b>22</b>

---

APPENDIX 1 – VEGETATION COMMUNITY DESCRIPTIONS .....	29
APPENDIX 2 – FLORA SPECIES LIST .....	31
APPENDIX 3 – THREATENED FLORA AND FAUNA RECORDS .....	35
APPENDIX 4 – BIRD SURVEYS .....	36
APPENDIX 5 – SUMMARY OF COMMUNITY CONSULTATION .....	37
APPENDIX 6 – REVEGETATION NOTES AND SPECIES LIST .....	40
APPENDIX 7 – WEED SPECIES WITHIN THE RESERVE.....	41
APPENDIX 8 – RESULTS OF TASI SEARCH.....	45
APPENDIX 9 – BIODIVERSITY CORRIDOR AND TRACK LINKAGE PLAN.....	46
APPENDIX 10 –PLAN OF KEY ON-GROUND ACTIONS.....	47
APPENDIX 11 – SIGNAGE PLAN .....	48
APPENDIX 12 – ENTRANCE LANDSCAPE PLAN.....	49
APPENDIX 13 – SETTING UP PHOTOPOINTS.....	50
APPENDIX 14 – POTTERS HILL BUSHLAND RESERVE REPORT CARD .....	55

## 1. BACKGROUND

The Clarence City Council municipal area incorporates a significant number of remnant bushland areas that form part of the open space network, provide refuge for native plant and animal species, recreational opportunities for residents and visitors and contribute to the scenic skyline backdrop of the developed areas. The bushland areas range in size from the extensive Meehan Range Conservation Area to smaller suburban bushland remnants.

Potters Hill Bushland Reserve is a small hilltop reserve containing open grassland (paddocks) (2.5 ha) fringed with open woodland located within the suburb of South Arm, owned and managed by the Clarence City Council (see Figure 1).

This Reserve Activity Plan (RAP) has been developed to document the environmental, recreational and social values of the reserve, and provide a practical guide for its management into the future. The RAP has an emphasis on community input, and the development of good working partnerships to ensure that values within the reserve are protected, and that the reserve can be developed to provide sustainable opportunities for the community.

The RAP follows the basic structure of equivalent plans for other bushland reserve within the Clarence City Council municipal area.

The main issues affecting the reserve are management of the natural values, improved public access and amenity, weed management, fire management and improving recreational opportunities.

### Aim of the Reserve Activity Plan

The aim of this RAP is to:

- ensure the reserve is sustainably managed to protect and enhance its natural, cultural and social values;
- identify priority on-ground management activities to be undertaken within the reserve by Council, community groups and/or volunteers; and
- encourage community involvement through raising awareness of the reserve's values and encourage participation in activities to minimise threats to these values.

### 1.1. REVIEW OF RESERVE ACTIVITY PLAN

This plan has been prepared for a period of 5 years from 2015 - 2019. An informal review of actions and priorities should be undertaken annually and a complete review of the plan undertaken at the end of the 5 year period.

## 2. SITE DESCRIPTION

This reserve is approximately 2.5ha in size, and includes an attractive, narrow entrance and track (200m) from Fort Direction Road through native woodland to the open grassy hilltop from which 360° views captivate visitors. There is a remnant vegetation along the southern and western boundaries.

The geology of the Potters Hill Bushland Reserve is characterised as upper glaciomarine sequences of pebbly mudstone, pebbly sandstone and limestone.

The dominant native vegetation within the reserve is generally cleared agricultural land with white gum (*Eucalyptus viminalis*) woodland occurring along the access track from Fort Direction Road up to the top of the hill, and on adjacent private properties to the south, east and west. To the southwest there is a patch of Sheoak (*Allocasuarina verticillata*) forest. A few regrowth *E. viminalis* have established on the west boundary but several large old *E. viminalis* are experiencing die back in the southwest of the reserve.

A range of exotic species occur on the hill top and around the site margins including declared weeds African boxthorn, blackberry and serrated tussock. The understorey amongst the regrowth vegetation is a mixture of exotic and native herbs and grasses. A list of plant species recorded at the site is provided in Appendix 2.

The main recreational uses in the reserve are walking and dog walking. The reserve also provides an excellent vantage point for viewing Sydney to Hobart yachts and tall ships or just appreciating the views across the Derwent River and Storm Bay.

Access to the reserve is via South Arm Road into Fort Direction Road. No formal parking for the reserve exists on Fort Direction Road (although there is currently a grassy verge where 2-3 cars can park). Pedestrian access is largely via the unsurfaced track from Fort Direction Road, with people informally entering the reserve through adjacent residences off Fort Direction Road and possibly Roaring Beach Road. Mown tracks skirt the eastern side of the reserve and traverse the top of the hill. These mown tracks are slashed by Council (and possibly a neighbour) rather than being formed, constructed trails as part of a planned network.

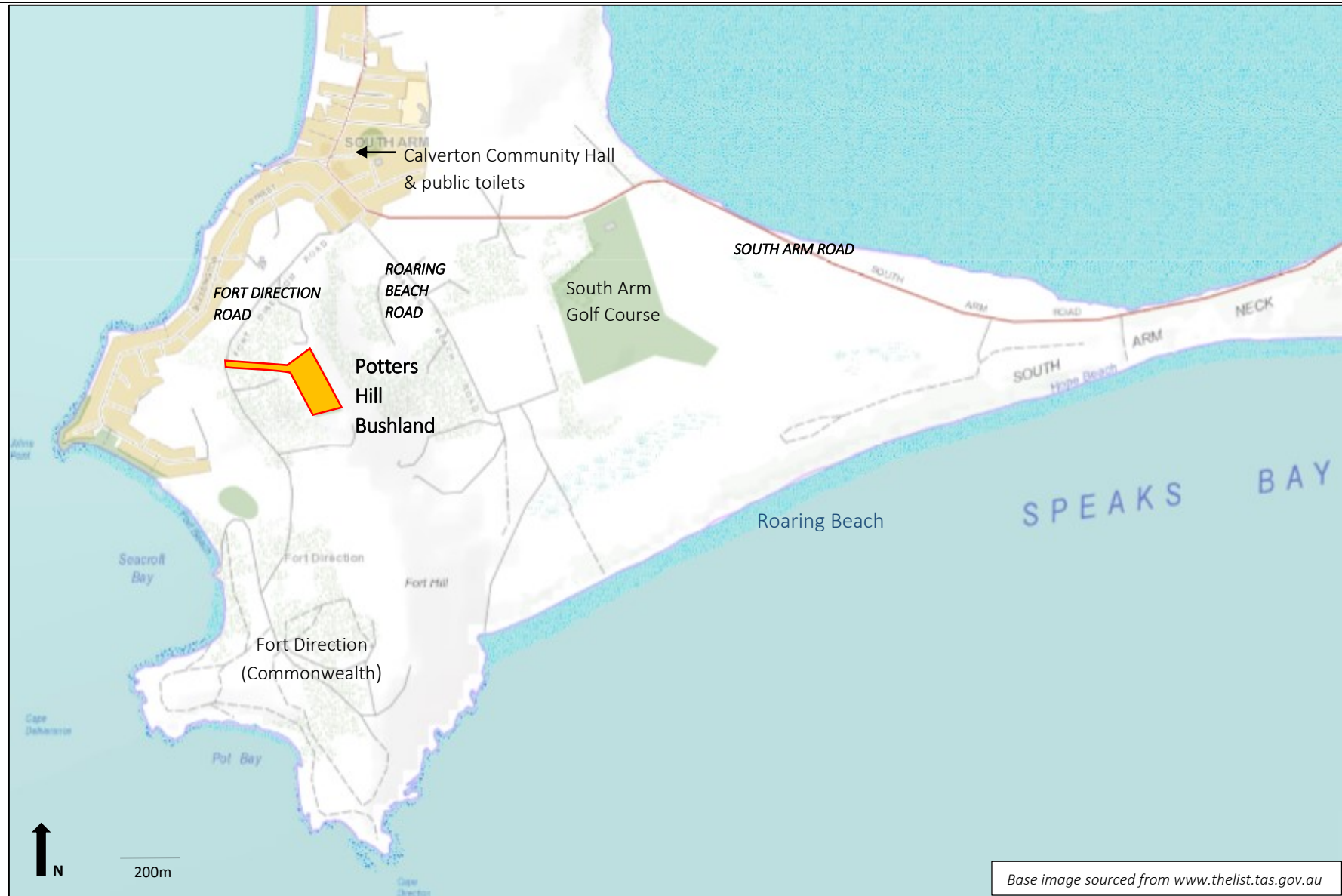


Figure 1 – Location Plan for Potters Hill Bushland Reserve

### 3. NATURAL VALUES OF SITE

#### 3.1 NATIVE VEGETATION COMMUNITIES

There are two (2) native vegetation communities and one (1) disturbance induced vegetation community occurring within the reserve. Descriptions of these communities are provided in Appendix 1 and their distribution is indicated in Figure 2.

- *Eucalyptus viminalis* forest and woodland (DVG) – this community occurs along the narrow entrance to the reserve and is the dominant vegetation type in the local area. The top of the hill is likely to have been dominated by this community prior to historic clearance and conversion to pasture.
- *Allocasuarina verticillata* forest (NAV) – this community occurs in the south western corner of the reserve. It is a regrowth community dominated by sheoak with some white gums saplings present (likely to have been DVG prior to disturbance).
- Agricultural land (FAG) – this is the dominant community occurring across the hilltop. The community contains dense cocksfoot grass and other exotic grasses and herbs with isolated native shrubs and grasses also present.

#### 3.2 NATIVE FLORA VALUES

The site was surveyed for flora species in August 2014. The intact white gum forest and sheoak remnant contained a wide range of native grasses and herb species. However due to the timing of the survey a number of native grass species were not able to be identified to species level. Additional surveys carried out in late spring or summer are likely to identify more species and is recommended.

The agricultural land contains a range of exotic grasses and herbs with isolated native grasses and herbs also present.

One (1) threatened flora species was recorded in the reserve. Coast houndstongue (*Cynoglossum australe*) – Listed as rare under *Threatened Species Protection Act 1995*.

*Description* - A perennial herb with erect, spreading, rough and hairy stems up to 1 metre high. The leaves are in a basal cluster and arranged alternately along the stem. The blue, pink or white flowers are produced in spring and summer.

This species is known from grasslands and open forests throughout south-east Australia and is widespread and locally frequent on the landward margins of coastal sand dunes and in dry places throughout Tasmania.

*Isolated specimens (up to 10) were recorded in the south western corner of the reserve amongst the sheoak woodland (Figure 2).*

One (1) threatened flora species has been recorded within 500m of the reserve and 11 species have been recorded with 5km of the reserve as per Natural Values Atlas Database (DPIPWE) (refer to Appendix 3 for list of these species). Whilst only one of these species was recorded in the reserve during the survey, some can be difficult to detect or can be overlooked and as such they may be present and identified in future surveys.





Figure 2 – Recorded natural values for the Potters Hill Bushland Reserve

## Weed Species

A range of exotic grass and herb species were recorded in the reserve predominantly in the agricultural land on the hilltop. The majority of the exotic species are not considered to be significant weed species in the context of a disturbed hilltop however where these species spread into native grassland they can outcompete native species and increase fire risk.

Three (3) declared weeds were recorded in the reserve (all 3 are also Weeds of National Significance - WONS) – African boxthorn, blackberry and serrated tussock (Figure 2). Weed management efforts will concentrate on these species as they have the potential to spread rapidly, out-compete native species for water nutrients and light and increase fire hazards.

Isolated radiata pine, tree lucerne and briar rose plants were also recorded.

### 3.3 NATIVE FAUNA VALUES

The small reserve provides very limited habitat for native fauna species due to the largely cleared and converted nature of the site. The intact woodland vegetation along the entrance and in the south east corner of the reserve provides some habitat for native woodland bird species however a lack of understorey species enables more aggressive native and introduced birds such as wattletails and miners to drive off small woodland species such as wrens, pardalotes and smaller honeyeaters.

The dense exotic grass on the hilltop provides suitable habitat for bandicoots; and significant evidence of this species, in the form of diggings, was evident. It is likely that either or both the southern brown bandicoot and the eastern barred bandicoot occur within the reserve.

Raptors such as swamp harriers and falcons are likely to forage over the site. A blue tongue lizard was also recorded in the reserve on the hilltop amongst the dense exotic grasses.

Due to the exposed nature of the site, revegetation efforts are unlikely to lead to the formation of high quality bird habitat (Birdlife Tas. report).

#### Birds

The bird fauna within the reserve was assessed during bird surveys carried out by Denis Abbott of Birdlife Tasmania. The reserve was found to have impoverished bird fauna due to the degraded nature of the site. Only ten (10) species were recorded with 2 of these being introduced species.

A species list of birds recorded in the reserve are contained in Appendix 4.

A list of threatened fauna species that have been recorded within 500m of the reserve and a comment on the likelihood of them occurring in the reserve is provided in Appendix 3.

### 3.4 GEOCONSERVATION VALUES

There are no listed geoconservation values within Potters Hill Bushland Reserve but two listed geoconservation sites are within 1km of the reserve.

1. **Fort Hill Stranded Marine Cliff** provides a good example of the process of sandy shoreline progradation (i.e. several stages in sand dune succession) which occurred in Tasmania after the sea reached its present level circa 6,500 years ago. This can be viewed at the west end of Hope Beach.

2. **South Arm Boat Ramp Permian Burrow Casts** are a notable and accessible example of the fossilised imprint of ancient sea life activity. The site is a sea cliff exposure.

### 3.5 CULTURAL HERITAGE

The original owners and occupiers of the land, where the reserve is located, are the Mumirimener people of the Oyster Bay Nation. No specific references to the 'use' of the hill by the Mumirimener people was found however due to its prominence in the landscape and the high number of significant midden sites across the South Arm Peninsula (refer to Appendix 8 for TASI search results) it is likely to have been used by the Mumirimener people.

### 3.6 EUROPEAN HISTORY

The Potter family has lived in the area since 1823 and farmed at the South Arm neck in those early days. The hilltop area that is now the Potters Hill Bushland Reserve was substantially cleared and farmed during this time.

The Potters Hill Bushland Reserve is a newly designated reserve in South Arm formed as part of a subdivision public open space requirement.

A more detailed history of the Potter family and the Potters Hill area can be found at the Clarence Heritage Archives.

## **4 COMMUNITY CONSULTATION**

Community consultation was undertaken as part of the development of the Reserve Activity Plan. This included consultation with the local community through a community ‘walk and talk’ event; and feedback through forms posted out to all South Arm residents. In addition, local community care groups were consulted, as well as Council staff in regard to the management of the reserve and possible future uses and connections to the reserve.

The aim of the consultation was to capture local knowledge and determine issues of importance from interested community members.

Following the initial community consultation process further consultation will be sought following the release of the ‘Draft Potters Hill Bushland Reserve Activity Plan’. The results of this future consultation will be incorporated into the final plan.

### **Stakeholder Consultation**

The following stakeholders were consulted regarding the use and management of the reserve.

- South Arm Peninsula Residents Association (SAPRA) – Project Manager for Labyrinth proposal to CCC.
- Council NRM Staff and Council Fire and Bush Regeneration Team (Robert Whittle)

### **Community Consultation**

One ‘walk and talk’ event was held on the 24<sup>th</sup> August 2014 and feedback forms were mailed to local residents as part of the community consultation. 17 adults and 2 children attended the Potters Hill Bushland Reserve ‘walk and talk’ event and provided verbal comments which were recorded. Further comments were received through returned feedback forms (13 forms returned).

The following is a brief summary of the main points from both the community ‘walk and talk’ and written community feedback.

### **Identified opportunities, issues and impacts**

The opportunities identified include:

- development of a labyrinth at the top of Potters Hill for public use and enjoyment;
- installation of seating to admire the view, wildlife (bandicoots and blue tongues), flora (native grasses and coast houndstongue) and catch one’s breathe ½ way up the access track;
- installation of picnic benches for picnicking;
- improve parking options at the entrance on Fort Detention Road which will enhance the accessibility of the reserve and will lead to increased use by passers-by;
- enhancement and stabilisation of the informal trail network in the reserve, including signage and interpretation, to provide opportunities for walking for health and dog walking;
- improving links between the reserve and the residential areas and destinations, including the Calverton Community Hall where there is a public toilet; and from the west end of Hope Beach at the end of Roaring Beach Road; potential to improve access for maintenance by Council; and

- potential for local ‘care’ groups, neighbours to the reserve and other community members to take on a shared responsibility for the on-ground management and enhancement of the reserve to provide a low-cost labour force.

The issues and impacts identified include:

- potential for spread of significant weed infestations within and outside the reserve – including weeds of national significance (WONS) such as serrated tussock, African boxthorn and blackberry;
- cocksfoot (*Dactylis glomerata*) is the dominant grass species and requires management that will encourage native species to persist and expand. The cocksfoot is presently out competing all natives where mowing has not occurred (it is also restricting the spread of serrated tussock. To maintain a balance between encouraging natives and restricting serrated tussock careful management is required);
- dieback of white gums on Potters Hill and the south western slope;
- potential for stressing/predation of bandicoots and other native wildlife if dogs are allowed to run off lead;
- potential for dog waste and the lack of dog tidy bags and rubbish bins;
- potential use of trail bikes in the reserve and the associated noise, intimidation, and damage to trails; and
- fire hazard – risk to surrounding properties and the potential for wildfire to burn the entire reserve damaging amenities and have a major impact on important bandicoot habitat.

A more detailed summary of feedback gathered during the community consultation phase is provided in Appendix 5.

Further feedback was received following the release of the draft RAPO during a comment period. This feedback has been incorporated into the final version of this plan.

## 5 MANAGEMENT ISSUES AND THREATS

As a result of the on-site survey and public consultation process, the following primary management issues have been identified in relation to the reserve. The management issues have been divided into those relating to natural values and those relating to public amenity and maintenance. All management actions are summarised in Table 1, Section 7 of this report.

### Natural Values Management Issues

- weed management;
- management of fauna habitat/trees;
- biodiversity corridors
- revegetation; and
- fire management.

### Public Amenity/Management Issues

- access to reserve (including walking linkages to the reserve and parking at the entrance);
- development/improvement of walking tracks;
- community input to manage reserve.
- installation of amenities including seating, tables and a labyrinth; and
- installation of reserve directional and interpretive signage.

### 5.1 WEED MANAGEMENT

The overall weed management strategy for the reserve will be to prioritise the control of declared weeds, WONS and environmental weeds with small isolated infestations targeted first, followed by targeting more widespread species. Monitoring and follow-up weed control will be vital to the overall success of the weed eradication program.

A maintenance program for exotic grasses and herbs will also be implemented and a community education campaign undertaken.

Currently, active management of weed species within the Potters Hill Bushland Reserve is restricted to sporadic slashing of tracks and fire breaks only. Future input from the local community will be important for the ongoing maintenance and management of weeds in the reserve (Refer to Section 5.10).

### Weed Management Actions

Descriptions of weed species that are to be controlled, their extent and control methodology is provided in Appendix 7.

- Control of serrated tussock within reserve. This highly invasive weed will need to be controlled prior to any significant works in the reserve to prevent seed from spreading through the reserve and surrounding areas. Control of the weeds on neighbouring land will need to be conducted in conjunction with control on the reserve to prevent re-infestation through a shared responsibility process.
  - WC1 - Control serrated tussock within the reserve.
  - WC2 – Control serrated tussock on neighbouring land.

- Control other declared weeds in reserve – Small populations of blackberry and African boxthorn occur in the reserve and on neighbouring land. These small populations should be eradicated to prevent further spread.
  - *WC3 – Eradicate blackberry and African boxthorn from reserve and approach adjoining landholders/land managers to coordinate control of declared weeds adjoining the reserve.*
- Control of environmental weeds – Environmental weeds including briar rose, radiata pine and tree lucerne are restricted to isolated populations. Ideally the control of the environmental weed species in the reserve should be undertaken in conjunction with the control of the declared weeds species. If there are limited funds available, environmental weeds should be controlled following control of the declared weeds.
  - *WC4 - Control environmental weeds species in the reserve in conjunction with the control of declared weeds. If insufficient funds are available, control isolated environmental weed species following control of declared weeds as funds become available.*
- Control of non-priority weeds – Exotic grasses and broadleaf weeds are widespread within the reserve. The control of these weeds is only a priority in areas that are to be re-vegetated and to reduce fuel loads for fire protection. As such slashing of the cleared land along the rear of properties adjoining the reserve, brush-cutting and foliage spraying of grasses and other broadleaf weeds around re-vegetated areas should occur on an annual basis.
  - *WC5 - Control grasses and broadleaf weeds around re-vegetated areas and along mown pathways on an annual basis.*
- Community Education – A number of the weed infestations and weed species, present in the reserve, have been introduced as a result of inappropriate slashing which degrades the natural values of the reserve. Educational material that highlights the impacts of slashing serrated tussock in bushland areas and provides suggestions for more appropriate plantings should be circulated to residents that border the reserve.
  - *WC6 - Mail out NRM South brochures: 'Creeping Back Yards' and 'Weed Warning-Serrated Tussock' to local residents.*
- Monitoring and Maintenance – The successful eradication of declared and environmental weeds from the reserve will require ongoing monitoring and follow-up weed control for a number of years. There is likely to be seedling regrowth from seed stored in the soil, re-sprouting of treated plants and reintroduction of weeds from seed sources outside the reserve (through wind, bird droppings and mammal movements) which will require treatment.
  - *WC7 - Conduct an annual survey of the reserve and remove seedlings and retreat any re-sprouted declared and environmental weeds.*
  - *WC8 – Conduct follow-up weed control on annual basis.*

## 5.2 MANAGEMENT OF FAUNA HABITAT/TREES

The reserve contains limited habitat for native fauna species however it appears to have a healthy bandicoot population. The woodland bird fauna is restricted on the site due to the lack of native trees and shrubs and exposed nature of the hilltop. Some reptile species, such as blue tongues, are known from the site.

As such the management of the site in terms of fauna habitat will be restricted to the maintenance of the existing woodland vegetation and management of the bandicoot habitat. Any future revegetation that is carried out on the site should consider the needs of native fauna species and consider expanding the existing intact native vegetation in the reserve.

Management and improvement of bandicoot habitat – the dense nature of the exotic grasses across the reserve hilltop provides excellent habitat for bandicoots and as such any management of the grass needs to be carried out in a manner that maintains the integrity of this habitat.

The bandicoots also benefit from having areas of slashed ground for foraging adjacent to dense grass for security. As such the slashing of a track network across around the reserve will improve the habitat for the bandicoot.

Any management (slashing) of the exotic grass for fire abatement should consider the needs of bandicoots and other small mammals by being carried out in a mosaic fashion to ensure there are always significant, and multiple areas of dense grass to provide shelter. Active fire management within the reserve will also ensure that a wildfire does not occur within the reserve which would burn out the entire reserve and heavily impact the bandicoot habitat.

- FH1 – *Manage exotic grasses in reserve to maintain and enhance bandicoot habitat.*

Woodland bird habitat - the reserve has an impoverished bird fauna mainly due to the lack of native trees and shrubs. Whilst it is unlikely that the reserve will provide a significant foraging area for woodland bird species, any future revegetation should consider the needs of woodland birds when determining revegetation locations and selecting species.

Retention of Dead Trees – there are a number of dead white gums in the reserve along the western face of the hill. The retention of dead trees is important as they have the potential to provide hollow habitat as they senesce. One very large and isolated white gum tree is present in the centre of the reserve just off the brow of the hill. This tree has only recently died however it provides an indication of the size of trees that occurred on the hill prior to clearing. It stands as a ‘natural statue of the past’ and could be used to highlight the potential impacts of climate change (i.e. warmer, drier conditions have led to the die back or loss of significant areas of white gum across the State).

The retention of the large dead tree would require an assessment of its stability to determine how the tree could be accessed by the public. Dependent on safety and risk factors the tree may be pruned and access available to the base of the tree or ‘fenced off’ to prevent close access if deemed unsafe.

- FH2 – *Retain large dead white gum in reserve. Assess stability of tree to determine level of access by public.*
- FH3 - *Consult with community re the future of the ‘tree’ and inclusion into interpretive signage.*



Dog access to reserve – the Potters Hill Bushland Reserve is a popular area for dog walking. Dogs are currently allowed in the reserve and as such it is recommended that, within the reserve, dogs must be under effective control at all times to minimise interactions with native fauna species using the reserve (in particular bandicoots).

There was some feedback during the consultation process that called for dogs to be on leash within the reserve and as such a review of the status of dog walking in the reserve may be appropriate.

The provision of dog litter bags and bins also needs to be considered.

- *FH4 - Review status of dog walking and provision of dog litter bags in Potters Hill Bushland Reserve as part of the CCC Dog Management Policy Review Process.*

Cat Control (domestic and feral cats) – feral cats are known to have significant impacts on native fauna through the predation of small mammals, birds and lizards and the spread of disease such as toxoplasmosis. Domestic cats that are allowed to roam bushland can have similar impacts to feral cats. The CCC supports the recently ratified *Cat Management Act 2012* which recommends de-sexing, micro chipping and keeping cats under control and inside at night.

- *The CCC supports the recently ratified Cat Management Act 2012 which recommends de-sexing, micro chipping and keeping cats under control and inside at night.*

### 5.3 BIODIVERSITY CORRIDOR LINK

Biodiversity corridors provide a connection between surrounding areas of native vegetation and Potters Hill. Currently Potters Hill is broadly linked with intact bushland (on private land) to the north west down towards the coastal reserve along Blessington Street; and to vegetation to the east and south towards Fort Direction and Roaring Beach (refer to Appendix 9). The maintenance of this native vegetation link is important to allow for the movement of native species between these areas and act to prevent the reserve or adjacent bushland from becoming isolated from larger intact areas of native vegetation. The maintenance of the link to adjoining bushland also maintains amenity, sense of place and a scenic framework for quality suburban lifestyle and wellbeing.

- *BL1 - Any future development of land adjoining the reserve or in the local area should consider the importance of maintaining biodiversity and greenway corridors in the landscape.*

### 5.4 REVEGETATION

Due to the disturbed nature of the reserve, there is scope for revegetation in the reserve. Undertaking revegetation works can provide additional habitat for fauna species and enhance the aesthetic values of the reserve.

Revegetation does however requires a long term follow-up maintenance to be successful, particularly in an exposed and dry site such as this reserve. Therefore it is recommended that revegetation works are only carried out if there is a commitment from the local community in conjunction with the Council to provide this maintenance.

An alternative to active revegetation in the reserve is to support natural regeneration. As a general rule encouraging natural regeneration is a more successful and cost effective method of regenerating an area than active planting because the regenerating plants are more suitable to the

local environment than nursery grown species. Supporting natural regeneration at this site may include the control of exotic species and protecting naturally germinating trees and shrubs from browsing until established.

Some revegetation using groundcover species is suggested to enhance the entrance to the reserve (refer to Section 5.6 and Appendix 12).

- *RV1 – Undertake revegetation works using native groundcover species as part of enhancement of Fort Direction entrance.*

The community consultation undertaken for the reserve strongly identified the desire to retain the expansive views from the top of the reserve and as such any revegetation works should keep this in mind.

The following broad recommendations are provided for future revegetation works.

- Only local native species should be planted in the reserve. Where possible plants should be grown from local provenance seed (refer to Appendix 6 for suggested species list).
- Any active revegetation using tall shrubs or trees should be restricted to clusters on the lower slopes of the reserve to ensure views are not significantly interrupted.
- Any revegetation on the top of the reserve should be restricted to discrete clusters around picnic or seating areas and only low ground cover species should be used.
- Revegetation should not be considered in the reserve unless there is a commitment to maintain the plantings.
- Revegetate small manageable areas planted progressively rather than large widespread areas planted.
- Supporting natural regeneration in the reserve is an effective way to increase the woodland habitat in the reserve.
- The understorey network is able to raise local provenance seeds if given appropriate details contact: Understorey Network Coordinator on (03) 6234 4286 or 0407 352 479 or email at [secretary@understorey-network.org.au](mailto:secretary@understorey-network.org.au).

## 5.5 FIRE MANAGEMENT

Fire management was identified as a concern for some residents surrounding Potters Hill Bushland Reserve (refer to Appendix 5). Fire management is an issue for the reserve in terms of vegetation management and the protection of infrastructure and fauna habitat.

The Potters Hill Bushland Reserve is surrounded by rural and residential properties with lots to the southwest and northwest containing significant amounts of native woodland vegetation. Whilst its location on a hilltop reduces the threat it represents to surrounding properties (fire will need to travel down the slope to impact houses) an uncontrolled fire within the reserve may increase the speed and intensity of a fire. In addition, any amenities that are installed in the reserve would come under threat in a bushfire.

The development of a basic fire management plan is therefore recommended.

- *BF1 – Coordinate shared responsibility for development and application of a Local Area Bushfire Management Plan including Potters Hill Bushland Reserve (rather than a separate Reserve BFMP). Engage with adjoining landowners in order to develop an*

*overall plan and to share cost to develop a sub-regional plan that would covers fire prone properties in close proximity to reserve.*

There following key factors should be considered when developing the fire management plan:

- any controlled burns in the reserve should be restricted to open grassy areas. The sheoak remnant should not be burnt.
- minimise fuel loads to reduce risks to adjoining residences and infrastructure.
- include adjacent properties with intact vegetation to southwest and northwest of the reserve in the development of a sub-regional fire plan. Plan to be developed as shared responsibility.

## 5.6 ACCESS TO RESERVE

The reserve is currently accessed from one formal entrance point off Fort Direction Road. There are also a number of private accesses from the rear of adjoining properties (at 72, 88, 116, 130 and 140 Fort Direction Road and 60 Roaring Beach Road).

The formal access is maintained and indicated by a sign (Figure 3) and there is some space for informal car parking on the side of the road near the entrance. The main entrance also allows Class 5 vehicle access for Council vegetation and fire management staff/contractors.

Issues identified during the site surveys and through community consultation included – providing a pedestrian crossing over the road drain into the reserve, provide car parking spaces, restricting access to the reserve by vehicles and motorbikes and installing seating halfway up the access track.

- *A1 – Enhance access into reserve from Fort Direction Road (refer to Appendix 12 for indicative entrance plan). Includes providing pedestrian crossing from road to entrance into reserve across road drain; additional landscaping; and installation of barriers to restrict access by vehicles.*
- *A2 - Provide parking adjacent to Fort Direction Road providing 2 or 3 car parks to Australian Standards (refer to Appendix 12).*
- The main access is inclined and it has been suggested that a bench or inviting rock or log for sitting be installed half way up the access track to provide a rest place (Figure 4).
  - *A3 – Install seating in position that does not prevent Class 5 vehicle access. The seating may be a bench or take a natural form of a rock or log.*



Figure 3 – Fort Direction Road entrance



Figure 4 – Possible position for rest seat half way up access track (refer to Appendix 10).

### 5.7 WALKING TRACKS AND FUTURE LINKAGES

The existing walking track to the top of the hill does not require specific modifications with the exception of the addition of seating in a location some way up the hill for a rest among the trees (as per Section 5.6).

There are currently mown walking tracks within the reserve across the top and along the eastern and northern margins. These tracks are to be maintained with the addition of the labyrinth (Refer to Section 5.8) and seating in the first year of this action plan. Subsequently, the walking tracks may be reviewed with consideration to flora and fauna issues to determine if additional or different tracks could be provided.

- *A4 – Consider modifying tracks in the future depending on new infrastructure (Labyrinth and seating) and flora and fauna considerations.*

The development of a walking track alongside Fort Direction Road to the reserve from the South Arm township has been identified as an important link to the town and Calverton Community Hall for parking and public toilets (refer to Appendix 9). This would increase usage of the reserve and provide a longer walk for residents and visitors.

- *A5 – Design and plan safe roadside walkway to the reserve along the side of Fort Direction Road from South Arm Main Road. Walking track to meander through existing trees to minimise tree removal.*

The creation other walking linkages to other reserves and nearby natural features including Blessington Street and Blessington Foreshore Reserve; Roaring Beach Road and Hope Beach was identified during the community consultation (Refer to Appendix 9 for diagram outlining indicative trail connections).

Any future development of adjoining land should consider the provision of walking links to Potters Hill Reserve to increase its connectivity and usage. Connection to Blessington Road through Defense land may also be investigated.

- *A6 – Plan safe walking linkages to: Blessington Street and Blessington Foreshore Reserve; the Calverton Community Hall (parking and public toilets); and Roaring Beach Road and Hope Beach.*

## 5.8 AMENITIES

The community feedback for the reserve identified a general site to install some minimal amenities on the hilltop with general consensus regarding seating and/or picnic table and the installation of a labyrinth (refer to Appendix 10).

### Seating and Picnic Tables

The installation of seating on the top of the hill was well supported through community feedback. Seating would be located so as to take in the expansive views from the hilltop with locations to be determined through community consensus. Suggested locations for seating were on the highest rise in the middle of the reserve; and towards the southern end of the reserve. Any installation of seating towards the southern end of the reserve needs to take into account the privacy of adjacent private residences. A seat half way to hilltop is also to be installed (refer to Section 5.6).

- *AM1 – Design and install seating in the reserve. Installation of picnic tables at one location to be considered.*

### Labyrinth

There is also strong support for the installation and maintenance of a labyrinth on the hilltop as it is seen as a low cost, low maintenance and suitably meditative activity for young and old to enjoy once at the top of the hill. Other benefits include:

- Destination point for tourists and Tasmanians;
- Beautiful design element in a public space;
- Space for quiet meditation and reflection and for activity that stimulates right brain activity;
- Unusual and interesting centrepiece for South Arm community events;
- To be used and enjoyed by all ages.

The labyrinth would be constructed by volunteers and fund raising could cover the construction material costs. The materials to be used include: stone slabs or brick for the entry paving; recycled bricks to form the path edges and crushed rock for the pathway. Some shallow excavation will be required to settle the stone slabs, bricks and crushed rock into place.

The labyrinth has the potential to attract people with an interest in labyrinths and mazes that would not only enjoy the labyrinth in this wonderful location but also the local views, beaches and area in general.

- The opportunity for the stakeholder, SAPRA, to create a labyrinth in the reserve will engender community ownership and increase use as well as provide an interesting attraction for visitors from farther afield.
  - *AM2 – Enable SAPRA to create a labyrinth at the top of Potters Hill for public use. Council will be required to meet with SAPRA to confirm logistics and provide access and transport of equipment and construction supplies to the top of the hill.*
  - *AM3 – CCC to draft up a contractual agreement for management of Labyrinth by SAPRA or newly formed community group in perpetuity.*

## 5.9 RESERVE SIGNAGE

As noted earlier in this plan, the entrance to the reserve from Fort Direction Road is well marked (Figure ) but there is a desire to provide additional directional signage from South Arm Road or the Calverton Community Hall where additional parking and public toilets exist. If the walking track from the community hall to the Potters Hill Bushland Reserve along the side of Fort Direction Road (refer to Section 5.7) was provided then directional signage would help point people in the direction of the new point of interest including the Labyrinth. Refer to Signage Plan – Appendix 11.

Community consultation indicated support for interpretive signage within the reserve indicating:

- the location and distance to significant points of interest e.g. Mount Wellington and Betsey Island Nature Reserve on the points of a compass or directional sign;
  - the indigenous and European history of Potters Hill and the area including Fort Direction and other visible points of interest on South Arm; and
  - the natural history of the area including the types of flora and fauna that can be expected on the reserve. Information regarding impacts of historic land management and climate change could also be included with the large dead tree providing a talking point (refer to Section 5.2).
  - Interpretive signage regarding landscape scale features such as geological formations.
- The installation of interpretive signs will further enhance the reserve by offering an educational attraction to locals, schools and visitors.
    - *RS1 – Install an interpretive sign in the form of a compass including the location and distances to points of interest seen from Potters Hill Bushland Reserve on the points of the compass.*
    - *RS2 – Install interpretive sign(s) about the reserve (including aboriginal and European history, natural values and landscape scale features) of the reserve. May include on one sign as part of RS1. Development of signage content to be undertaken as collaboration between local community, local schools and CCC.*
    - *RS3 – Install direction signage to the Reserve at South Arm Road and/or the Calverton Community Hall (refer to Appendix 11).*

## 5.10 COMMUNITY INPUT INTO RESERVE MANAGEMENT

The ongoing management and maintenance of the reserve will require a coordinated and cooperative approach between the Clarence City Council (CCC) and the local community. This may include the formation of a 'Potters Hill Landcare Group' or a sub-committee of SAPRA.

In particular, with an improvement of the amenities in the reserve, including the design and installation of seating, signage, tracks and the 'labyrinth', there will be additional maintenance required. Given the limited resources of the CCC, the community input will be vital.

The formation of a Landcare group can be supported with assistance from Chris Johns, CCC Natural Areas Volunteer Coordinator and care groups can apply for funding to assist with management and amenity improvements through funding programs run by the CCC (grants (up to \$5000) through the

Council Landcare grants program to fund weed control and rehab. Grants can be used to fund a crew of 4 persons to spray and undertake follow-up) or NRM South and Tasmanian Landcare.

- *C1 – Work towards forming a Potters Hill Landcare Group or sub-committee of the SAPRA to manage and maintain the reserve and in particular the labyrinth (refer to Section 5.7).*

Any future Landcare group or subcommittee volunteer workers that undertake work within the reserve are entitled to work under safe conditions under the Tasmanian Work Health and Safety Act 2012. As such the following applies to any future volunteer workers within the reserve;

- \* All volunteers are considered 'workers' when working for Council on Council owned land. Council therefore has a duty of care to provide a safe workplace for volunteer workers
- \* All volunteers have rights and responsibilities. Volunteers have the right to a safe work environment, to be treated fairly and with respect, to public liability insurance, to safe equipment, tools and personal protective equipment (PPE), to adequate instruction to perform tasks, to contribute their suggestions and to receive acknowledgement for their contributions.
- \* Volunteers also have the right to refuse work if they consider it unsafe.
- \* Volunteers also have the responsibility to care for the health and safety of others, to respect others, to follow policies, procedures and instructions, and to care for their own health and safety.
- \* With this in mind, all future volunteers need to refer to the relevant Council Safe Work Method Statements (SWMSs) before undertaking works in Council reserves, including cut and paste work, brush-cutting and spreading of mulch. These are available from Council's Natural Areas Volunteer Coordinator (Chris Johns, phone
- \* 6245 8773 or email [cjohns@ccc.tas.gov.au](mailto:cjohns@ccc.tas.gov.au)). All spot spraying should be undertaken by certified operators (e.g. Council staff, contractors).

## **6 MONITORING AND EVALUATION**

An informal review of the actions and outcomes of the Potters Hill Bushland Reserve Activity Plan should be undertaken annually and a complete review of the plan undertaken at the end 5 years.

Ongoing monitoring and maintenance of areas where weed control actions (and revegetation actions) have occurred should be undertaken on an annual basis. In addition, the remaining areas of the site (such as the intact remnants) that do not currently contain weeds should be monitored on an annual basis to ensure new weed infestations do not become established.

In addition to monitoring the reserve for new weed infestations or regrowth of treated infestations, the condition of the vegetation should also be monitored. This can be achieved through the establishment of photopoint monitoring.

Monitoring programs for the reserve may be developed by CCC and/or SAPRA as a community activity.

- *WC7 - Conduct an annual survey of the reserve and remove seedlings and retreat any re-sprouted declared and environmental weeds.*

- WC8 – *Conduct follow-up weed control on annual basis.*

### 6.1. PHOTOPOINTS

It is recommended that the photopoints are set-up to record current condition of the site and future achievements in weed control and revegetation. These photopoints should be photographed annually and the photos stored for future reference. The procedure for setting up photopoints is outlined in Appendix 13.



## 7 IMPLEMENTATION PLAN

The following provides a plan for the implementation of all actions identified in the plan for a 5-year period from 2015 to 2019.

The implementation plan outlines:

- the actions to be undertaken and their location,
- treatment methods,
- desired outcomes,
- timing, estimated costing, and
- priorities for each action.

Actions are prioritised into three categories based on their strategic importance, achievability, timing, and the availability of funds.

1. **high** priority – to be implemented within years 1-3.
2. **medium** priority – to be implemented as required years 4-5.
3. **low** priority – to be implemented as funding permits.

Many of the actions are dependent on the availability of funding and as such priorities may change over the course of the plan period. Other actions will be carried out by means of a collaborative approach between Council, the care group and adjacent property owners to achieve implementation.

A review of action priorities should be undertaken on an annual basis and changes made as required.

The actions outlined in this plan should form the basis for future funding applications through internal Council grant sources and external grants from State and Federal programs.

Table 1 – Implementation Plan for Potters Hill Bushland Reserve

Action #	Action	Outcome	Timing	Responsibility	Cost	Priority
<b>WEED CONTROL</b>						
WC1	Initial treatment of all serrated tussock in the reserve.  Initial foliage spray of mature plants (Nov-Jan). Follow-up foliage spray 2mths after initial spray. Monitor controlled areas and spray any seedlings (ongoing).	Control serrated tussock in reserve. Remove from pathways prior to any installation of amenities or extension of mown tracks.	Spring-summer for foliage spraying. All year round for others methods.  2015	CCC	\$5000	1
WC2	Approach adjoining landholders/land managers to coordinate control of serrated tussock adjoining the reserve.	Reduce re-infestation of reserve from populations outside reserve	Spring – summer for foliage spraying. All year round for others methods.	CCC, SAPRA, Community	Nil	1
WC3	Control African boxthorn and blackberry within reserve.	Eradicate these weeds from reserve	Summer-autumn 2015/16	CCC, SAPRA, Community	\$1000	1
WC4	Control environmental weeds species in the reserve in conjunction with the control of declared weeds. If insufficient funds are available, control isolated environmental weed species following control of declared weeds as funds become available.	Radiata pine, briar rose and tree lucerne are removed from reserve.	Summer-autumn 2015/16	CCC	\$1200	2
WC5	Control grasses and broadleaf weeds in re-vegetated areas and along mown pathways on an annual basis.	Revegetation areas are not competing with vigorous grass species.	Annually for duration of plan.	CCC, SAPRA, Community	\$1000 per year	2
WC6	Mail out NRM South brochures: 'Creeping Back Yards' and 'Weed Warning-Serrated Tussock' to local residents.	Garden dumping eliminated and inappropriate planting of weed species reduced.	2015	CCC, SAPRA, Community	Nil	1

Potters Hill Bushland Reserve Activity Plan – South Arm

Action #	Action	Outcome	Timing	Responsibility	Cost	Priority
WC7	Conduct an annual survey of the reserve and remove seedlings and retreat any re-sprouted declared and environmental weeds.	Weeds species do not re-establish and no new infestation establish.	Annually for duration of plan.	CCC, SAPRA, Community	\$500 per year	2
WC8	Carry out follow-up weed control in reserve	Ensure controlled weed do not re-establish or new weed establish in reserve	Annually – Spring	CCC, SAPRA, Community	\$2000 per year	1
<u>FAUNA MANAGEMENT</u>						
FH1	Manage exotic grasses in reserve to maintain and enhance bandicoot habitat.	Provide increased foraging areas for bandicoots	2015-2019	CCC	\$500 per year	2
FH2	Retain large dead white gum in reserve. Assess stability/safety of tree to determine level of access by public	Retain trees for future hollow habitat and to provide 'natural statue of the past' for interpretation on past management and climate change.  Assess stability/safety of tree to determine access to tree by public	2015	CCC – qualified arborist	\$2000	2
FH3	Consult with community re the future of the 'tree' and inclusion into interpretative signage	Safe reserve management		CCC, Community	n/a	2
FH4	Review status of dog walking in Potters Hill Bushland Reserve as part of the CCC Dog Management Policy Review Process	Assess dog requirements in reserve through established process. Reduce dog litter in reserve	2015	CCC	\$500	1
<u>BIODIVERSITY CORRIDOR</u>						
BL1	Consider biodiversity corridor links in any future development applications for land surrounding reserve.	Maintain biodiversity links to reserve	2015-2019	CCC		1

Potters Hill Bushland Reserve Activity Plan – South Arm

Action #	Action	Outcome	Timing	Responsibility	Cost	Priority
<u>REVEGETATION</u>						
RV1	Revegetate entrance to reserve using native groundcover species.	Improve entrance amenity	2015-17	CCC, SAPRA, Community	\$2000	2
<u>FIRE MANAGEMENT</u>						
BF1	Develop Fire Management Plan for Potters Hill Bushland Reserve. Large adjoining private bushland lots to be included in overall plan.	Fire Management Plan developed and implemented	2015	Council – Fire & Vegetation Officer/Community	\$5000	1
<u>ACCESS TO RESERVE AND LINKAGES</u>						
A1	Enhance access into reserve from Fort Direction Road. Includes providing pedestrian crossing from road; additional landscaping (RV1); and installation of barriers to restrict access by vehicles.	Improve access to reserve.	2015/16	CCC, Contractor	\$10000	2
A2	Provide parking adjacent to Fort Direction Road access by installing culvert in ditch and providing 2 or 3 angle car parks in the road right-of-way.	Parking in road right-of-way for 2 or 3 cars at reserve entrance.	2015-2016	CCC, Contractor	\$8000	2
A3	Install bench (or suitable rock) halfway up hill in position that does not prevent Class 5 vehicle access.	A rest and view point on the access track	2015-2017	CCC, Contractor	\$1000	2
A4	Design and plan roadside walkway to the reserve along the side of Fort Direction Road from South Arm Main Road.	Provide walking link between South Arm township and reserve to increase usage	2015-2019	CCC, Contractor	\$20000	2

Potters Hill Bushland Reserve Activity Plan – South Arm

Action #	Action	Outcome	Timing	Responsibility	Cost	Priority
A5	Consider modifying internal tracks in the future depending on new infrastructure (Labyrinth and seating) and flora and fauna considerations.	Provide interest for repeat visitors	2016-2019	CCC, SAPRA, Community	\$1000	2
A6	Consider options for formalised safe walking linkages to: Blessington Street and Blessington Foreshore Reserve: the Calverton Community Hall (parking and public toilets); and Roaring Beach Road and Hope Beach. Ensure ongoing maintenance of links.	Provides links to other reserves and natural features in the area.	2015-2019	CCC	\$10000	2
<u>AMENITIES</u>						
AM1	Design and install seating in the reserve. Installation of picnic tables at one location to be considered	Increase usage of reserve. Provide a location to sit and take in views and to picnic on hilltop in reserve.	2015-2019	CCC, SAPRA, Community	\$2000	1
AM2	Enable SAPRA to create a labyrinth at the top of Potters Hill for public use. Council will be required to meet with SAPRA to confirm logistics and provide access and transport of equipment and construction supplies to the top of the hill.	Collaboration provides new attraction (Labyrinth) in reserve.	2015-2019	CCC, SAPRA, Community	\$2000	3
AM3	CCC to draft up a contractual agreement for management of Labyrinth by SAPRA or newly formed community group in perpetuity.	Ensure the labyrinth is maintained by community without input from Council	2015-2019	CCC, SAPRA, Community	n/a	1
<u>RESERVE SIGNAGE</u>						
RS1	Install an interpretive sign in the form of a compass including the location and distances to points of interest seen from Potters Hill Bushland Reserve on the points of the compass.	Signage plan developed including directional signage erected to increase use of and awareness of surroundings.	2015-2016	CCC, SAPRA, Community	\$5000	1

Potters Hill Bushland Reserve Activity Plan – South Arm

Action #	Action	Outcome	Timing	Responsibility	Cost	Priority
RS2	Install interpretive sign(s) about the reserve (including aboriginal and European history and natural values) of the reserve. May form part of RS1.	Interpretive signage erected to increase use and awareness of the reserve.	2015-2016	CCC, SAPRA, Community	\$2000	2
RS3	Install direction signage to reserve at South Arm Road or the Calverton Community Hall.	Increase awareness of reserve for locals and tourists from South arm township	2015-2017	CCC, SAPRA, Community	\$500	1
<u>COMMUNITY INPUT</u>						
C1	Work towards forming a Potters Hill Landcare Group or sub-committee of the SAPRA to manage and maintain reserve an in particular the labyrinth	Ensure maintenance of reserve	2015-2019	CCC, Community	\$1000	1

*Costs are estimates only. A formal fee proposal from appropriate registered contractors should be obtained (including hygiene procedures) prior to commencement of the project.*

## **REFERENCES**

Baker ML, Duretto MF (2012). *A Census of the Vascular Plants of Tasmania & Index to The Student's Flora of Tasmania & Flora of Tasmania Online* (Tas. Herbarium, Tas. Museum & Art Gallery: Hobart) [www.tmag.tas.gov.au](http://www.tmag.tas.gov.au)

Harris, S and Kitchener, A. (2005). *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation*. Department of Primary Industries Water and Environment. Printing Authority of Tasmania. Hobart.

Michaels, K. (2006). *A Manual for Assessing Vegetation Condition in Tasmania, Version 1.0*. Resource Management and Conservation, Department of Primary Industries, Water and Environment, Hobart.

*Threatened Species Protection Act 1995*. Tasmanian State Government, No 83 of 1995. Government Printer, Hobart, Tasmania.

---

## APPENDIX 1 – VEGETATION COMMUNITY DESCRIPTIONS

---

### **TASVEG Unit - *Eucalyptus viminalis* grassy forest and woodland**

#### **TASVEG Code - DVG**

General Description – *Eucalyptus viminalis* grassy forest and woodland (DVG) is characteristically low to medium height (15 -25 m) open grassy forest dominated by *E. viminalis*. The understorey is generally grassy, and sometimes very rocky. Low shrubs may form a sparse layer. The specific composition of the understorey depends largely on the fire and grazing regimes.

Site Specific Description - this community occurs along the narrow entrance to the reserve and is the dominant vegetation type in the local area. The top of the hill is likely to have been dominated by this community prior to historic clearance and conversion to pasture. White gum (*E. viminalis*) is the dominant eucalypt with isolated blue gums (*E. globulus*) occurring in woodland adjacent to the reserve. Drooping sheoak (*Allocasuarina verticillata*) is common at the lower end of the reserve entrance adjacent to Fort Direction Road with scattered prickly box (*Bursaria spinosa*) and broadleaf hopsbush (*Dodonaea viscosa*) also present. The low shrub layer is virtually absent with only low shrub such as peachberry heath (*Lissanthe strigosa*) and native cranberry (*Astroloma humifusum*) recorded. There are a range of native grass and herb species present although identification to species level for many species was not possible due to the timing of the survey. Silver tussockgrass (*Poa labillardierei*), velvet tussockgrass (*Poa rodwayi*), wallabygrass (*Rytidosperma* sp.), kangaroo grass (*Themeda triandra*), sagg (*Lomandra longifolia*), variable swordgrass species (*Lepidosperma laterale*), dwarf riceflower (*Pimelea humilis*), kidneyweed (*Dichondra repens*), climbing saltbush and scaly buttons are also common.

Small clusters of serrated tussock were recorded along the entrance strip and scattered plants along the mown track at the top of the hill.

### **TASVEG Unit – *Allocasuarina verticillata* forest**

#### **TASVEG Code – NAV**

General Description – *Allocasuarina verticillata* forest and woodland varies from pure stands with 100 % litter layer or with little else but leaf litter beneath the trees, to woodlands in which umbrageous trees are interspersed in a species-rich sward dominated by tussock grasses. These woodlands and forests occupy very dry sites and some have emergent eucalypts or *Callitris rhomboidea*.

Site Specific Description – this community occurs in the south western corner of the reserve. It is a regrowth community dominated by sheoak with some white gums saplings present (likely to have been DVG prior to disturbance) (Figure 1). Drooping sheoak (*A. verticillata*) is the dominant tree species with scattered prickly box (*Bursaria spinosa*) and dollybush (*Cassinia aculeata*) also present. A range of native grasses and herbs were recorded in this remnant including the following; tussock grass (*Poa* sp.), speargrass (*Austrostipa* sp.), bower spinach (*Tetragonia implexicoma*), native cranberry (*Astroloma humifusum*), cotton fireweed (*Senecio quadridentatus*), climbing saltbush, scaly buttons (*Leptorhynchus squamatus*) and coast houndstongue (*Cynoglossum australe*).

A range of exotic grasses and herbs also occur in this community similar to the adjacent FAG land.



**TASVEG Unit – Agricultural land**

**TASVEG Code – FAG**

General Description – Tasmania’s improved pastures support sheep and cattle grazing, the best examples of which contain exotic temperate grass mixes and clovers. Croplands are diverse and range from common temperate vegetables and orchard fruits through to a variety of crops.

The mapping unit occurs in agricultural areas, most commonly on lowland fertile dolerite and basalt soils, but also occurring over a range of geology types and altitudes.

Site Specific Description – This disturbance induced community occurs across the hilltop (Figure 2) where exotic grasses and herbs are dominant with scattered native grass and herb species present in more open areas or at the edge of the NAV and DVG. Cocksfoot (*Dactylis glomerata*) is the dominant grass species with phalaris (*Phalaris aquatic*) and tall fescue (*Festuca arundinacea*) less common. Common herbs and flat weeds include cats ear (*Hypochoeris radicata*), clover (*Trifolium* sp.), plantain (*Plantago lanceolata*) and fumitory (*Fumaria muralis*). Native grasses and herbs are present amongst this community scattered amongst the exotic species or occurring in small localised patches where cocksfoot has not completely suppressed them. Tussockgrass (*Poa* sp.) and wallabygrass (*Rytidosperma* sp.) species were recorded with isolated native cranberry (*Astroloma humifusum*), climbing saltbush (*Einadia nutans*) and rush (*Juncus* sp.) also present.

There are a small number of environmental weed species in this community including scattered infestation of serrated tussock (*Nassella trichotoma*) along the mown tracks and on neighbouring land; isolated blackberry along fence lines and two (2) African boxthorn plants under the dead white gum on the western side of the hill (Figure 3).

## APPENDIX 2 – FLORA SPECIES LIST

### Flora species list recorded at Potters Hill Bushland Reserve

Recorder: A. Welling

Date: August 2014

e = endemic

i = introduced

d = declared weed

#### *Dicotyledonae*

Family name	Species name	Common name
<b>AIZOACEAE</b>		
	<i>Carpobrotus rossii</i>	Native Pigface
	<i>Tetragonia implexicoma</i>	Ice plant
<b>ASTERACEAE</b>		
	<i>Cassinia aculeata</i>	Dolly Bush
i	<i>Hypochoeris radicata</i>	Cat's ear
	<i>Leptorhynchos squamatus subsp. squamatus</i>	Scaly buttons
	<i>Senecio</i> sp.	
	<i>Senecio quadridentatus</i>	Cotton Fireweed
<b>BORAGINACEAE</b>		
rare	<i>Cynoglossum australe</i>	Hound's Tongue; Forget-me-not
<b>CASUARINACEAE</b>		
	<i>Allocasuarina verticillata</i>	Sheoak
<b>CHENOPODIACEAE</b>		
	<i>Einadia nutans subsp. nutans</i>	Climbing Salt-bush
	<i>Rhagodia candolleana subsp. candolleana</i>	Coastal Saltbush
<b>CONVOLVULACEAE</b>		
	<i>Dichondra repens</i>	Kidney-weed

---

EPACRIDACEAE

	<i>Astroloma humifusum</i>	Native Cranberry
	<i>Lissanthe strigosa subsp. subulata</i>	Peachberry heath

FABACEAE

	<i>Bossiaea prostrata</i>	Creeping Bossiaea
i	<i>Chamaecytisus palmensis</i>	Tree Lucerne
i	<i>Trifolium arvense</i>	Clover

FUMARIACEAE

i	<i>Fumaria muralis</i>	Fumitory
---	------------------------	----------

GERANIACEAE

i	<i>Erodium</i> sp.	Storksbill
i	<i>Geranium dissectum</i>	Cut-leaf Cranesbill
	<i>Geranium</i> sp.	Geranium

HALORAGACEAE

	<i>Gonocarpus tetragynus</i>	Common Raspwort
--	------------------------------	-----------------

MIMOSACEAE

i	<i>Acacia longifolia subsp. longifolia</i>	Mainland wattle
	<i>Acacia mearnsii</i>	Black Wattle

MYRTACEAE

	<i>Eucalyptus viminalis subsp. viminalis</i>	White Gum
--	--	-----------

OXALIDACEAE

	<i>Oxalis perennans</i>	Native Oxalis
--	-------------------------	---------------

PITTOSPORACEAE

	<i>Bursaria spinosa subsp. spinosa</i>	Prickly box
--	--	-------------

PLANTAGINACEAE

i	<i>Plantago lanceolata</i>	Narrow Leaf Plantain
---	----------------------------	----------------------

---

POLYGALACEAE

*Comesperma volubile* Blue Love Creeper

RANUNCULACEAE

*Ranunculus* sp. Buttercup

ROSACEAE

*Acaena echinata* Sheep's Burr

*Acaena novae-zelandiae* Buzzy

i *Rosa rubiginosa* Briar Rose

i, d *Rubus fruticosus* Blackberry

SAPINDACEAE

*Dodonaea viscosa subsp. spatulata* Broadleaf hopbush

SOLANACEAE

i, d *Lycium ferocissimum* African Box-thorn

THYMELAEACEAE

*Pimelea humilis* Dwarf Rice-flower

VIOLACEAE

*Viola hederacea* Ivy-leaf Violet

*Gymnospermae*

Family name	Species name	Common name
-------------	--------------	-------------

PINACEAE

i	<i>Pinus radiata</i>	Monterey Pine
---	----------------------	---------------

*Monocotyledonae*

Family name	Species name	Common name
-------------	--------------	-------------

CYPERACEAE

	<i>Lepidosperma laterale</i>	Variable Sword-sedge
--	------------------------------	----------------------

---

---

JUNCACEAE

<i>Juncus australis</i>	Austral Rush
<i>Juncus pallidus</i>	Pale Rush
<i>Luzula</i> sp.	Luzula

LILIACEAE

<i>Dianella brevicaulis</i>	Black Anther Flax-lily
<i>Thysanotus patersonii</i>	Twining Fringe-lily

ORCHIDACEAE

<i>Thelymitra</i> sp.	Sun orchid
-----------------------	------------

POACEAE

i	<i>Aira caryophyllea</i>	Hair Grass
i	<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass
	<i>Austrostipa flavescens</i>	Spear Grass
	<i>Austrostipa</i> sp.	Spear Grass
i	<i>Bromus hordeaceus</i>	Soft Brome
i	<i>Dactylis glomerata</i>	Cock's Foot
i	<i>Festuca arundinacea</i>	Tall Fescue
i, d	<i>Nassella trichotoma</i>	Serrated tussock
i	<i>Phalaris aquatic</i>	Canary grass
	<i>Poa labillardierei</i>	Silver Tussock
	<i>Poa rodwayi</i>	Velvet Tussock
	<i>Rytidosperma caespitosum</i>	Common wallaby grass
	<i>Rytidosperma setaceum</i>	Bristly wallaby grass
	<i>Rytidosperma</i> sp.	Wallaby grass
	<i>Themeda triandra</i>	Kangaroo Grass

XANTHORRHOACEAE

<i>Lomandra longifolia</i>
----------------------------

### **APPENDIX 3 – THREATENED FLORA AND FAUNA RECORDS**

#### *THREATENED FLORA RECORDED WITHIN A 500M RADIUS OF RESERVES*

<b>Species</b>	<b>Status TSPA</b>	<b>Status EPBCA</b>	<b>Comments</b>
<i>Cynoglossum australe</i> coast houndstongue	r		A number of small populations were recorded in the reserve amongst the sheoak forest and edge of the <i>E. viminalis</i> woodland.

*Notes on preferred habitats for threatened plants sourced from the Threatened Species Unit (DPIPWE)*

#### *THREATENED FAUNA RECORDED WITHIN A 500M RADIUS OF SITE.*

<b>Species</b>	<b>Status TSPA</b>	<b>Status EPBCA</b>	<b>Comments</b>
<i>Brachionichthys hirsutus</i> spotted handfish	e	NS	Marine species
<i>Lathamus discolor</i> swift parrot	e	EN	No foraging trees recorded in the reserve although isolated trees occur on private property adjacent to reserve.

## **APPENDIX 4 – BIRD SURVEYS**

Birds noted by A. Welling, 24<sup>th</sup> August 2014 – swamp harrier, noisy minor, plover, eastern rosella, musk lorikeet

A bird survey of the reserve was undertaken by Denis Abbott, Sue Drake and Bruce Longmore from Birdlife Tasmanian on the 9<sup>th</sup> October. The results from this survey are provided below.

***Potters Hill:*** *walked up corridor from the reserve sign on Fort Direction Rd.*

*Date: 9 October, 2014 Time: 11.00-11.20*

***Birds Seen/heard:***

*Australian Magpie*

*Blackbird*

*Eastern Rosella*

*Kelp Gull*

*Masked Lapwing*

*Noisy Miner*

*Starling*

*Welcome Swallow*

*This list has 2 feral species (Blackbird and Starling), the Kelp Gull and Welcome Swallow overfly the area, which leaves 4 resident species.*

*The reserve is covered in pasture grass with a line of eucalypts and copses of Allocasuarina verticillata along the river-side fence-line. Most of the large eucalypts are dead and there is no bush in what must have been a grazing paddock. There is a large bush of Tree Lucerne, Chamaecytisus palmensis, an invasive weed, which should be removed. The most numerous birds were the Starlings and the Noisy Miners. It is difficult to see how Potters Hill could be transformed into good bird habitat. Even with mass planting of native species the site would have little shelter, being the top of a hill and subject to winds from all directions.*

## APPENDIX 5 – SUMMARY OF COMMUNITY CONSULTATION

### Initial Community Consultation

As part of the development of the Reserve Activity Plan (RAP) for Potters Hill Bushland Reserve, consultation was undertaken with adjoining landowners and stakeholders, user groups and the broader community. Direct consultation was undertaken with the following stakeholders – South Arm Peninsula Residents Association (SAPRA) Inc. In addition, a ‘walk and talk’ session was held in the reserve on 24<sup>th</sup> August 2014. This event was facilitated by the Clarence City Council and Andrew Welling.

The event was attended by 17 adult residents and 2 children.

In addition to information gathered at the community event, 14 written feedback forms or emails were received regarding the Potters Hill Bushland Reserve. The responses received during stakeholder meetings, the ‘walk and talk’ session and through the feedback forms is summarised in Table 2. In addition, the table is cross referenced to Table 1 using the Action #s which indicate what actions will be taken to address specific community consultation comments. Where “none” is noted in the Response column, no action is recommended to address this comment at this stage.

*Table 2: Community Consultation Comments Summary*

	Management Issues/Comments	Number of written supportive responses	Walk & Talk supporters	Response/ Action Number
1	Develop a 12m diameter Labyrinth from stone, crushed rock and recycled bricks as per Jonathan Cruickshank Labyrinth Plan 30.04.2014.	8	3	AM2, AM3
2	Install a fixed compass pointing out local points of interest and more distant geographical highlights (e.g. Mt Wellington)	5	3	RS1
3	Weed and natural vegetation remediation to support wildlife	5		FH1, B1
4	Imaginative seating that allows people to enjoy the views but also interact i.e. not in rows. Natural seating e.g. logs, stumps, large branches, rocks that may provide habitat as well.	5	3	AM1
5	2 Picnic tables (and toilet facility) [possible stage 2 if benches are inadequate]	4	1	AM1, A3 link to toilet in South Arm
6	Provide angled parking for 2 or 3 cars to the south of the reserve entrance on Fort Direction Road. The road right-of-way is wide enough however the ditch would have to be modified.	3	1	A2
7	Add interpretive boards to provide information about geology of the peninsula, history and facts about Potters Hill.	3	2	RS2



	Management Issues/Comments	Number of written supportive responses	Walk & Talk supporters	Response/ Action Number
8	Fire-fighting access and fire management (burn and/or slash) and a fire break/walking track around the perimeter.	3		BF1
9	Establish additional tracks: from Potters Hill to Fort Beach from the end of Fort Road; and down towards the end of Roaring Beach Road to Hope Beach.	2		A6
10	Brochure and access map (of trail from Calverton Hall to Potters Hill) promoting walk as a major recreation option; including short history of the reserve and photos.	2		None
11	Signage from the main road	2	1	RS3
12	Community members wish to help maintain the area	2		C1
13	A seat 1/2 way up the access track to rest among the native veg.	2	1	A3
14	Construct a simple shelter from the weather	1		None (review based on usage)
15	Some mowed pathways around the perimeter and perhaps one or two through the site should be retained.	1		A5
16	Signage regarding dogs on lead and poo bags	1	1	FH4
17	Install fitness trail like Lindisfarne and Domain slipway	1		None
18	Maintain vegetation on the access track	1		Refer reveg section
19	Install hand rail up one side of the access track	1	1	None
20	Access does not need to be modified	1		None
21	Access tracks: Leave the existing access track from Fort Detention Road as natural as possible i.e. no vehicles except legitimate Council vehicles. Maintain the beautiful natural stroll between the trees (and orchids). Gravelled tracks are not necessary.	1		A1
22	Barrier on access track to prevent car, motorbike and quad access	1		A1
23	Include a BBQ area		3	None
24	Promote the area with events e.g. CCC to promote Family Fun Days to watch/coincide with the Sydney to Hobart yacht race; or Tall ships passing up the Derwent River		2	None
25	Include a flying fox for children		1	None
26	Views are major attraction so don't plant too much that will block views		4	Refer reveg Section
27	Build a small tower to enable a view of the Ironpot and lighthouse		1	None

### **Major Stakeholder Feedback**

The feedback gathered from the major stakeholders are summarised below:

South Arm Peninsula Residents Association (SAPRA) support modifications to the reserve as discussed at the 'walk and talk' with emphasis on the installation of a 12m x 12m Labyrinth which will provide a:

- destination point for tourists and locals,
- beautiful design element for the public space,
- quiet place for meditation and reflection,
- unusual and interesting centre piece for community events,
- passive recreation activity that stimulates the right brain activity, and
- activity useable by all ages

### **Council Fire and Vegetation Officer (FVO)**

The existing arrangement allows for Class 5 vehicle access which is adequate for brush-cutting once or twice/year. It would be possible to: run a top slasher on the hill top to put lines through the tall grassed area dependent on growth; and brush cut or slash the perimeter. It is the FVO's intention to maintain the present condition and address weed issues as they arise however FVO recommends applying for weed management funding that could be used to contract the work.

The FVO has developed Bushfire Management Plans for other reserves in the Council and is happy to generate for Potters Hill Bushland Reserve Bushfire Management Plan in addition, to conducting a soil and vegetation survey.

### **Community Consultation Period for Draft Reserve Activity Plan**

The Draft Potters Hill Bushland Reserve Activity Plan will be released for public comment in 2014 and the comments will be reviewed and integrated into the final RAP prior to Council endorsement.

## APPENDIX 6 – REVEGETATION NOTES AND SPECIES LIST

Some minor revegetation may be undertaken on the hilltop around amenities such as the seating and the labyrinth. Any species used for revegetation should be low species so they do not obscure views from the hilltop. The following general notes are provided as a guide to undertaking revegetation works.

**Site preparation** – Areas to be planted should be foliage sprayed prior to planting to kill exotic grasses and reduce competition for the seedlings. In addition the ground should be scalped at the time of planting to remove the root mass and break up the ground.

**Species selection** – Species selected for the revegetation projects should occur locally and plants grown for the site should ideally be grown from seed of local provenance and be well-established and hardened off prior to planting. Refer to table below for a suggested revegetation species list.

**Plant protection** – All trees and shrubs should be protected from browsing by rabbits and native animals by using tree guards. The condition of these guards should be monitored and any damaged or missing guards replaced until the plants are well established. Tree guards should be the core flute type rather than plastic bags due to the windy conditions experienced on the exposed hilltop.

**Watering** – dependent on the weather conditions following revegetation projects some plants (in particular trees and shrubs) may require supplementary watering during warm, dry periods until they become established.

### Suggested Revegetation Species list

Species name	Common Name	Form	Location to be planted
<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	white gum	tree	Away from hilltop – only to be planted if follow-up maintenance can be guaranteed
<i>Allocasuarina verticillata</i>	drooping sheoak	tall shrub	Around margins of reserve – not to obscure views.
<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	prickly box	tall shrub	Around margins of reserve – not to obscure views.
<i>Dodonaea viscosa</i> subsp. <i>spatulata</i>	broadleaf hopsbush	shrub	Around margins of reserve – not to obscure views.
<i>Dianella</i> sp.	flaxlily	lily	Around picnic areas, clusters on hilltop; Entrance
<i>Lomandra longifolia</i>	sagg	sedge	Around picnic areas, clusters on hilltop; Entrance
<i>Lepidosperma laterale</i>	variable sword sedge	sedge	Around picnic areas, clusters on hilltop
<i>Themeda triandra</i>	Kangaroo grass	Grass	Around picnic areas, clusters on hilltop
<i>Carpobrotus rossii</i>	pigface	groundcover	Around picnic areas, clusters on hilltop; Entrance and picnic areas, clusters on hilltop.
<i>Rhagodia candolleana</i>	Coastal saltbush	groundcover	Around picnic areas, clusters on hilltop.

## **APPENDIX 7 – WEED SPECIES WITHIN THE RESERVE**

### **Weed Descriptions, Extent & Control Strategies**

The declared weeds within Potters Hill Bushland Reserve include serrated tussock, blackberry and African boxthorn. These weed species are also listed as Weeds of National Significance (WONS).

#### **African boxthorn (*Lycium ferocissimum*)**

**Description** – Boxthorn is an erect, dense woody shrub which can grow to 5 metres high. It has fleshy oval leaves and an extensive root system. Its most prominent feature are the stout spines on all parts of the stem. These spines can be up to 15 cm long on the main stems and are smaller on the smaller branches.

**Extent of Infestations** – two (2) plants were recorded under the large dead tree on the western side on the hilltop and a single plant was recorded amongst the NAV vegetation.

#### **Blackberry (*Rubus fruticosus* X)**

**Description** – Blackberry canes are long and thorny and grow in thickets. Canes can grow up to 6 metres in length and thickets can extend to hundreds of square metres in area. They produce white to pink flowers in clusters in spring and summer and purple-black berries in late summer to autumn. Seeds are spread by animals and birds eating the fruit and passing the seed some distance away from the thicket.

**Extent of Infestations** – Isolated and impoverished blackberry plants were recorded in the northeast corner of the reserve bordering on private property.

#### **Serrated tussock (*Nassella trichotoma*)**

**Description** - Serrated tussock is a tufted perennial grass growing up to 50cm high forming large weeping tussocks. It resembles closely native *Poa* species, and positive identification of seedlings and plants without flower heads can be difficult.

Serrated tussock is very vigorous and can quickly dominate areas of pasture and out-compete native grasses. It is responsible for the loss of hundreds of thousands of hectares of grazing land throughout Australia and is considered to be one of Australia's worst weeds. The seed is easily spread by wind and can travel significant distances where there are no barriers (such as fences) to intercept the seeds.

**Extent of Infestation** – Isolated serrated tussock plants occur mainly within the slashed paths across the top of the reserve and small infestations in the white gum woodland along the entrance to the reserve (Figure 2). The dense nature of the exotic grasses on the hilltop has restricted the distribution of this weed to mowed areas.



*Figure 2 – Serrated tussock grass along slashed access path and on top of Potters Hill*

### **Control Strategies & Actions**

The reserve will be managed primarily for public access and amenity, and weeds. As such it is likely that declared or environmental weeds will persist if ignored. Therefore the treatment of declared weeds as part of the improved amenities and ongoing management is important to minimise the spread of weeds from the site to other areas and the strict adherence to weed hygiene protocols will also be required.

The blackberry and serrated tussock infestations on the site are relatively minor and do not represent a major weed management issue. The overall strategy will be to control the serrated tussock plants prior to on-ground works e.g. benches and labyrinth installation, and the physical removal of the small blackberry infestation as part of ongoing management. Strict adherence to hygiene protocols for all vehicles and machinery using the site will be required and all top soil is to be retained on the site or removed under strict conditions.

**African boxthorn Control** – The isolated plants can be controlled using the cut and paint method whereby plants are cut close to the ground and the stem is painted with herbicide within 30 seconds of the cut. Care should be taken where treating this species due to the long sharp spines.

**Blackberry Control** – The blackberry infestations are relatively minor and can be physically removed prior to, or in conjunction with, the initial construction works on the site. Due to their impoverished nature (likely as a result of frequent slashing during footpath maintenance) they do not represent a high risk of spreading and as such physical clearance of the plants is sufficient.

**Serrated Tussock Control** – The control of serrated tussock in Tasmania is governed by a number of strategies and plans including the '*Serrated Tussock Statutory Weed Management Plan*', *Tasmanian Serrated Tussock Strategy, 2005* and the *South East Weed Management Plan 2001*.

Under the *Serrated Tussock Statutory Weed Management Plan* a zone classification is assigned to all municipalities based on the extent of serrated tussock infestations in each municipality. The Clarence Municipality is classified as a Zone B municipality due to the widespread nature of this weed. Containment is the primary management objective to prevent the spread of the weed outside the Municipality, however measures to prevent the spread of the species to any serrated tussock free properties within Zone B should also be implemented.

The serrated tussock infestations occurring within the reserve should be controlled prior to the commencement of any other site works to minimise opportunity to spread seed and to prevent further production of seed. Once site works commence the management of the top soil is important to ensure any serrated tussock seed present does not spread from the site.

Details of control methods are provided below:

**Foliage Spraying** – All plants should be foliage sprayed.

- Foliage spray all plants on site to prevent further seed production using selective herbicide such as flupropanate (e.g. Taskforce®, Kenock®) or Glyphosate (e.g. Round-Up®, Round-Up Bioactive®) that are registered for the control of serrated tussock in Tasmania. This can be applied by spot spraying or boom-spray between November and March.
- If Glyphosate is used on the site a follow-up application should be applied 2 months after the initial application.
- Ongoing control of regrowth tussocks will need to be undertaken, particularly on slashed paths. When the initial control is undertaken using selective herbicide such as flupropanate, treatment of regrowth should utilise an alternative poison such as glyphosate (e.g. Roundup®, Weedmaster® etc.) to prevent the grass from developing resistance to herbicides.
- All application should be conducted as per herbicide label instructions.
- Further information on the control of serrated tussock can be obtained from the DPIPW website <http://www.dpipwe.tas.gov.au/inter.nsf/WebPages/LBUN-8AT23L?open>

**Manage Soil (seed) Movement** – Implement strict vehicle hygiene protocols to prevent the movement of seed off the site. This will also ensure that any other weed seed or soil based pathogens are not transported to or from the site.

- Prior to any works on the site, vehicle hygiene measures should be implemented to prevent spread of seed or soil based pathogens in soil to other sites. In general, all vehicles and machinery entering the site should adhere to the '*Tasmanian Washdown Guidelines for Weed and Disease Control*'.
- All machinery should be clean when it enters the site, and cleaned on site before removal. Cleaning should include the removal of soil, mud etc. and blowing off any dry plant material.
- The loading and unloading of machinery should be carried out on paved areas.
- Vehicle access to the site should be restricted to essential vehicles and machinery only to minimise the opportunity for weed seed and pathogens to leave the site.

- Any topsoil removed during the construction of the labyrinth and bench installations should be stockpiled on the site for later use on the site.
- Topsoil that is reused on site will need to be monitored for emergence of serrated tussock seedlings.
- The removal of topsoil from the site is not recommended however if topsoil is to be removed it must be disposed of at an approved waste management facility for deep burial. Transportation of material containing declared weed seed requires a permit from DPIPWE.
- All gravel, fill and topsoil brought to the site should be sourced from certified weed free suppliers and quarries in accordance with *Australian Standard AS4419 Soil for Landscaping and Garden Use* to ensure weed seed is not introduced.
- Failure to adhere to hygiene guidelines could result in the spread of serrated tussock seed from the site to other areas and is in breach of the *Weed Management Act 1999*.

### Disposal of Debris.

All weed debris from the reserves should be bagged (where appropriate) and disposed at an approved waste management facility.

## **APPENDIX 8 – RESULTS OF TASI SEARCH**

**From:** aboriginal@heritage.tas.gov.au  
**Sent:** Thursday, December 4, 2014 11:17 AM  
**To:** andrew@wellingconsulting.com.au  
**Subject:** Application for an Aboriginal Heritage Desktop Assessment  
**Attachments:** Unanticipated Discovery Plan.pdf

---

### **RE: ABORIGINAL HERITAGE DESKTOP ASSESSMENT**

#### **AHTP2077 - Development of a Reserve Activity Plan for Potters Hill Reserve**

---

Dear Andrew,

Aboriginal Heritage Tasmania (AHT) has completed a search of the Aboriginal Heritage Register (AHR) regarding the proposed RAA at Potters Hill Reserve and can advise that there are no Aboriginal heritage sites recorded within the property. There are however, extensive midden sites all along the coast in this area. As the proposal for the RAA is relatively low impact, and given the distance of the Reserve from the coast (>500m), it is believed that there is a low probability of Aboriginal heritage being affected by the works.

Accordingly there is no requirement for an Aboriginal heritage investigation and AHT have no objection to the project proceeding.

Please be aware that all Aboriginal heritage is protected under the *Aboriginal Relics Act 1975*. If at any time during works you suspect Aboriginal heritage, particularly shell midden material, cease works immediately and contact AHT for advice. Attached is an Unanticipated Discovery Plan, which you should have on hand during ground disturbing works, to aid you in meeting your requirements under the Act.

If you have any queries please do not hesitate to contact AHT.

Kind Regards,

Emily Smith

#### **Aboriginal Heritage Tasmania**

Department of Primary Industries, Parks, Water and Environment  
5th Floor, Marine Board Building, 1 Franklin Wharf  
GPO Box 44, Hobart, TAS, 7001

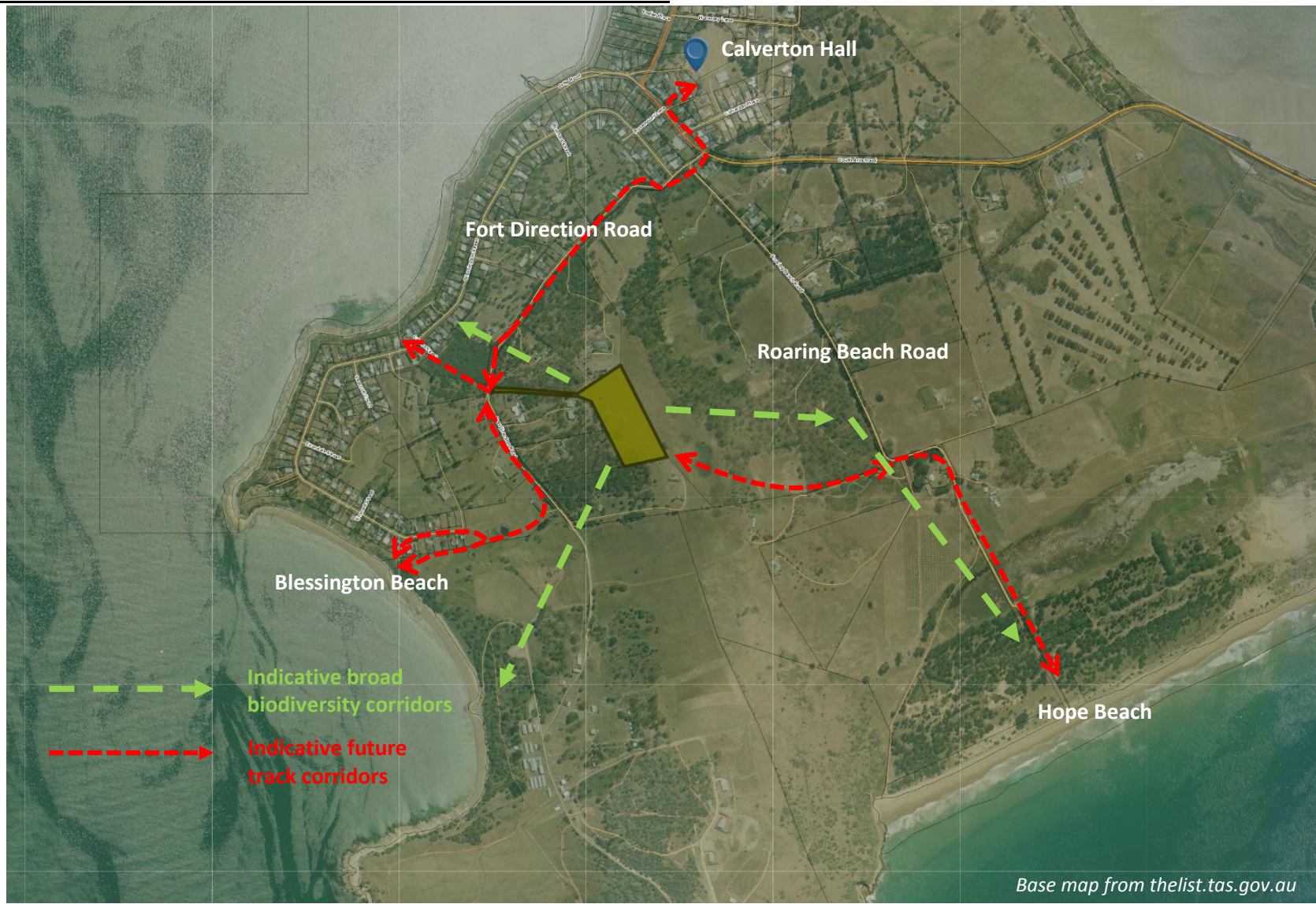
p 03 6165 3152  
e [aboriginal@heritage.tas.gov.au](mailto:aboriginal@heritage.tas.gov.au)

[www.aboriginalheritage.tas.gov.au](http://www.aboriginalheritage.tas.gov.au)



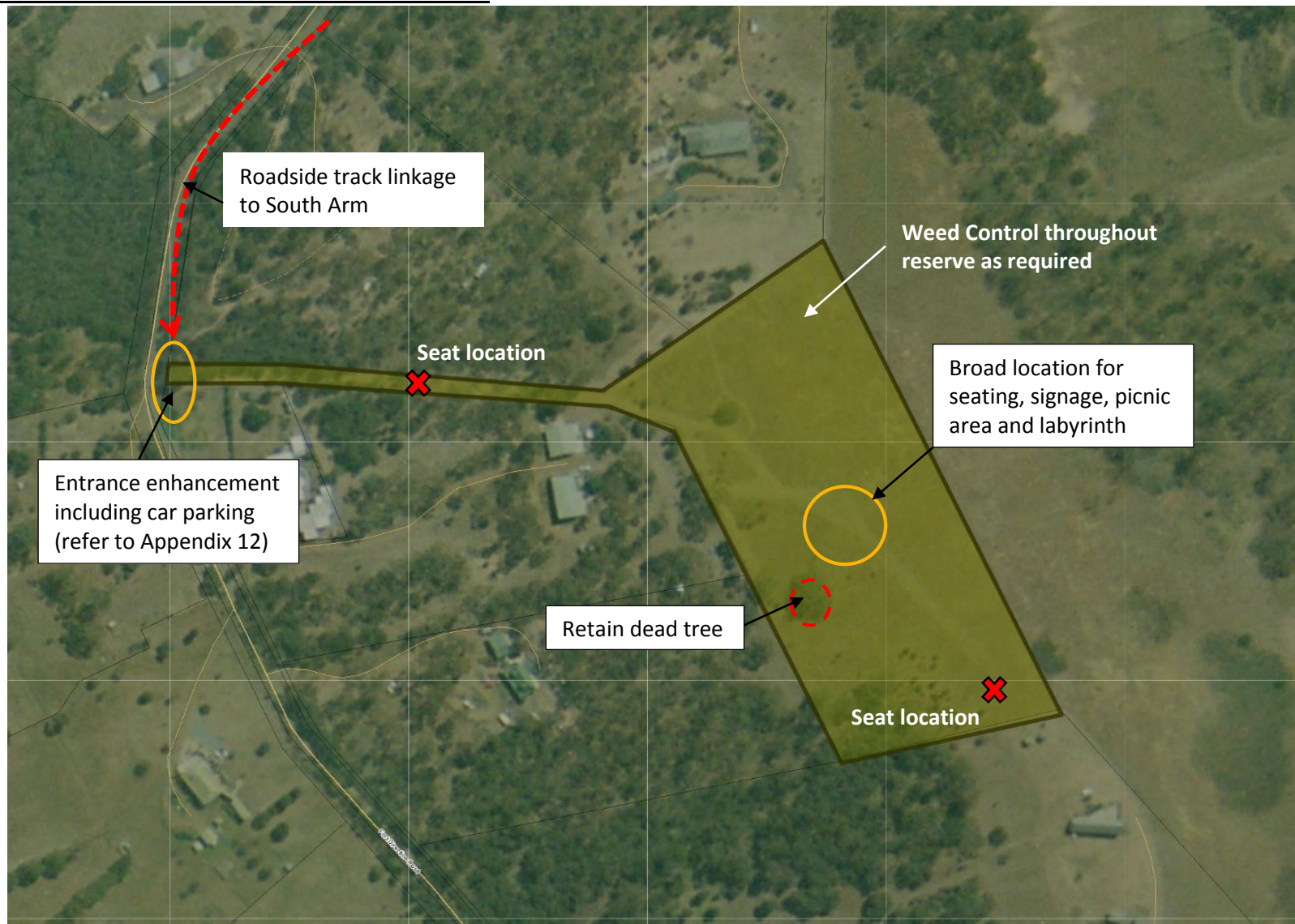


## APPENDIX 9 – BIODIVERSITY CORRIDOR AND TRACK LINKAGE PLAN





## APPENDIX 10 –PLAN OF KEY ON-GROUND ACTIONS

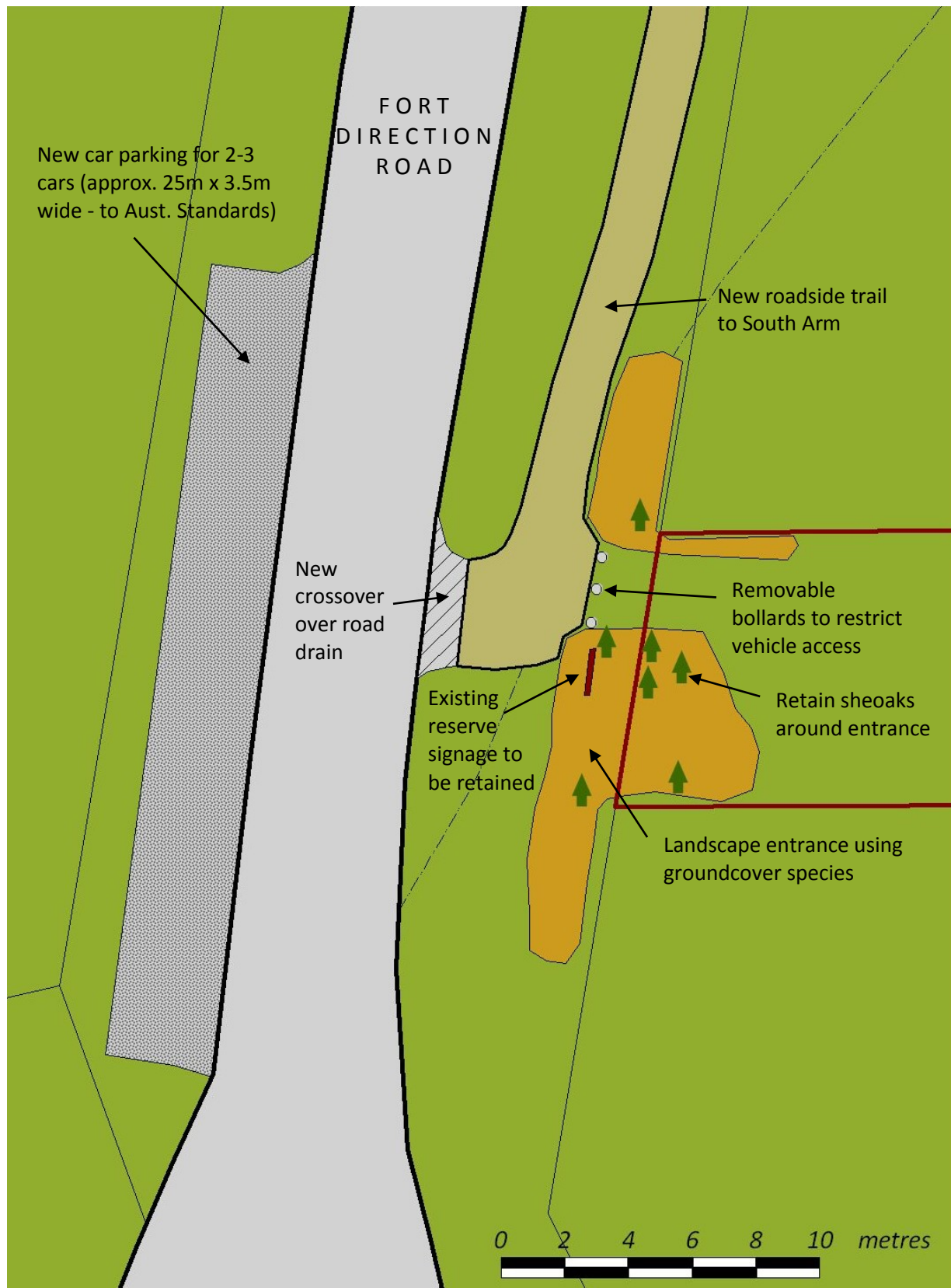




## APPENDIX 11 – SIGNAGE PLAN



## APPENDIX 12 – ENTRANCE LANDSCAPE PLAN



*\* plan is approximate only with location of existing trees and sign and space for carparking indicative.*



## APPENDIX 13 – SETTING UP PHOTOPPOINTS




**Photopoint Monitoring**
FACT SHEET

### WHAT IS PHOTOPPOINT MONITORING ?

Photopoint monitoring is a simple, fast and inexpensive technique to record and monitor visual changes in the natural environment over time. It involves taking a series of images of a fixed area or subject at regular time intervals, which can then be compared to show physical change at a given location.

Consistency is critical to the success of photopoint monitoring. Photos must be taken at the same location, with the same camera direction angle, focus points and preferably camera settings at each time point, for an effective permanent visual record of environmental change.

Photopoint monitoring is most effective only when its strengths as a method match the objectives of the study, in terms of the nature and magnitude of the change that is expected to occur. When considering using photopoint, you need to be clear about the **appropriateness**, **capabilities** and **limitations** of the method.

### Appropriateness

Photopoint monitoring is a useful technique for recording the effectiveness of on-ground management actions at the site scale (10m-100m) and is most appropriate when used to capture environmental changes which are visible to the eye. Photopoint monitoring may be best used to support other monitoring efforts aimed to quantify environmental change.

**The photo series can detect change in condition due to:**

- Weed growth/management
- Grazing pressure/management
- Feral animal impacts/management
- Erosion impacts/management
- Recreational or human impacts/management
- Revegetation
- Reintroduction of native animals
- Regeneration
- Dieback

### Capabilities

- Low measurement error and variation
- Requires minimal training
- Readily obtainable equipment
- Low impact on monitoring site
- Provides a standardised and precisely replicable result that can be achieved by different people at different points in time
- Generally, it can be conducted by one person; however two people may be preferable due to safety considerations and transporting of equipment
- Complements quantitative monitoring techniques/data i.e. vegetation condition monitoring and species survival counts
- Potential to store data electronically and link to site records and/or GIS maps/data point
- Photos provide a permanent visual record of site conditions that transcends periodic changes in staff and expertise
- Photos may be a more effective communication/extension tool when dealing with the public and decision makers than highly quantitative charts, tables and graphs

### Limitations

- Will only detect changes large enough to be seen by the eye from the camera position
- Is a qualitative rather than quantitative monitoring technique. These limitations can be overcome if additional quantitative techniques are applied, such as counts (see Appendix 1).
- May not provide any evidence of cause of change in the variable of interest
- External effects, such as light may make detection of changes more difficult. Extreme wind and rain also present challenges
- Cannot be used in dense woody vegetation as branches and foliage obscure camera field of view.
- Overtime representation of objects may be restricted by the size and number of fields of view or photopoint markers can become obscured by vegetation, or lost due to soil erosion or vandalism
- Results will almost always be relative to the site where they are taken and comparison between sites may be limited
- Interpretation requires collection of 'metadata', e.g. date, time, plant species names
- Changes in operators or technology/equipment may affect results. This can be avoided by following a set method.

## One picture is worth a thousand words

Page 1

## Photopoint Monitoring

NRM SOUTH

### THE METHOD

There are five stages to photopoint monitoring:

1. **Project planning**
2. **Equipment acquisition**
3. **Photopoint monitoring**
4. **Photo archiving**
5. **Repeat monitoring**

It is essential that all stages are implemented to ensure that the photopoint standard is maintained and that the project goals and objectives are achieved.

#### Project Planning

There is no guarantee that photopoint monitoring will produce useful data for every kind of restoration or management project. In the planning phase consideration should be given to:

- the aims of the project,
- the management actions to be conducted,
- relevant indicators and other supporting monitoring techniques, *(see Appendix 1)*,
- the nature, magnitude, and time frames of the expected change, *(see Appendix 1)*,
- the monitoring frequency, *(see Appendix 1)*,
- the level of confidence in monitoring results required to inform further management, and
- the archiving systems and requirements.

#### Tips for selecting monitoring sites:

- The location of a photopoint monitoring site should be carefully chosen. Choose an easily recognizable location with minimal access issues. Proximity to a road or track will aid efficiency for future monitoring. Remember to obtain permission to restricted areas or private land.
- Avoid steep slopes, where possible, as this can make photo consistency more difficult and complicate interpretation.
- The photo view needs to illustrate a distinct feature that you want to monitor, e.g. a boundary between grazed and un-grazed vegetation, an area subject to weed control, or the growth of revegetation or plants regenerating. Choose a location which will clearly capture the feature you want to monitor. The more specific the photo, the easier it will be to interpret the sequence of photos.
- The view through the camera to the central focus point needs to be uncluttered. Anticipate things like plant growth which may obscure views in future monitoring.
- The photos need to be representative of the site and maximize subject matter in the field of view.

#### How to select monitoring frequency:

Photos can be taken at different time intervals depending on the changes expected at the site. Baseline photos should be taken to capture the site before management actions are implemented or environmental changes are expected e.g. revegetation or weed control, before an area is opened up for recreation

Following the baseline photos, timeframes for further comparison may be:

- **Short:** before and after. This will help capture short events such as implementation of management actions.
- **Medium:** very 6 – 12 months, when a site is changing quite rapidly or a lot of visible work is being carried out.
- **Long:** every year to few years, when more subtle changes are occurring.

The frequency of monitoring may change over time as management actions or condition improvement/decline on the site. For example, photos may be taken frequently as management works are implemented, and then drop to a medium and then long timeframe as management actions slow or cease and the environment responds over time.

Additionally, photos can be taken at any point in time, of anything of interest occurring on the site, e.g. a new species occurs at the site.



Above: Photopoint monitoring series of regeneration after a fire.

## NRM SOUTH

## Photopoint Monitoring

## Equipment

For each monitoring point you will need:

- 2 steel or aluminum posts/star dropper (with protectors), approx 1.8m long, per photopoint site.
- Hammer or post driver for driving in star droppers
- Tape measure (up to 50m)
- Coloured flagging tape (optional)
- Camera
- GPS
- Map or aerial photo of the site/location
- Aluminium tags and soft tie-wire or cable ties (or other means of identifying the photopoint position)
- Field Data Sheet
- Data Board
- Marker pen
- Clipboard

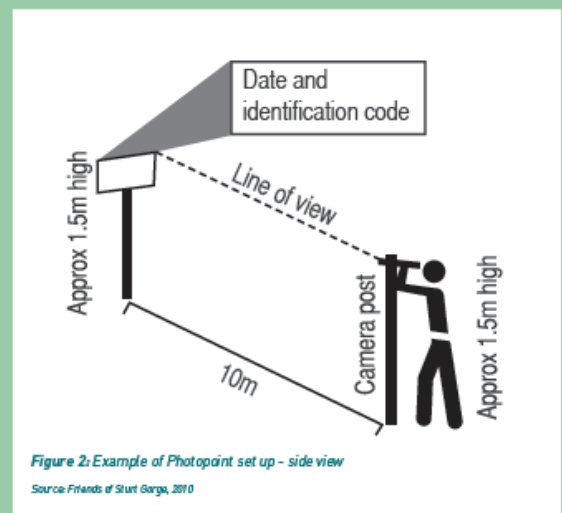
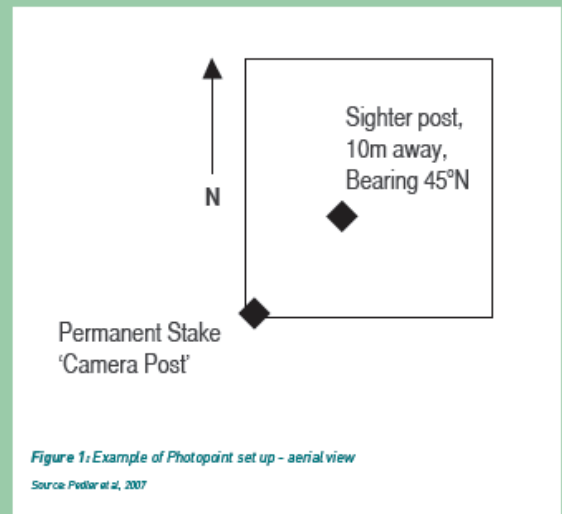
## Conducting photopoint monitoring

At your chosen site, fix a 'camera post' and 'sighter post' firmly into the ground so they are difficult to remove. If vandalism is likely to be a problem, marker pegs can be placed at the base of each post to mark their location in a less conspicuous manner.

- The 'camera post' is where the photos will be taken from and should have approximately the eye height of the average person (1.5m) remaining above the ground). An identification tag should be permanently tied to the 'camera post'. An identical tag can also be attached to a marker peg on the ground if vandalism is a problem.
- The 'sighter post' is approximately 10m away from the 'camera post' in the direction that you want to take the photo (Fig. 1a). Place the Data Board in the field of view, with the site identification and relevant monitoring information visible, e.g. date, time etc. The writing on the Data Board needs to be large enough to be visible.
- Hold the camera on the 'camera post', facing the 'sighter post', and focus the centre of view on the top of the 'sighter post' (Fig. 1b).

Fill in the Photopoint Field Data Sheet, making sure it corresponds with the information on the Data Board. When taking the compass bearing of the 'sighter post', be careful to keep the compass away from the metal star dropper as this can influence the reading. Take two steps back and line up both droppers before taking the reading.

Ideally use the same type of camera with the same settings each time. A good choice is a SLR camera with 50mm lens. The 'auto' setting allows for ease of use and consistency, but if you use manual settings remember to record them. Zoom should not be used as it changes the width of the field of view. Turn on date stamping features on the camera if available and unlikely to obscure important elements of the picture (see *Hints and Tips* for more).



## Photo Archiving

At the time of taking the photo it is important to collect supporting data to support the interpretation of the image and enhance the value of the monitoring effort. The more complete the supporting information the more you will be able to assess the environmental change and, if relevant, the impacts of management actions. See the 'Photopoint Field Data Sheet' template for essential information fields.

When downloading photos, clearly label each photograph with the site ID, site no. and date. Filing photos and corresponding field data sheet either electronically or in hard copy a folder system will help accessibility and efficiency in the future.

There is no substitute for reliable monitoring to help determine the success or failure of management action



## Photopoint Monitoring

NRM SOUTH

### ADDITIONAL PHOTO MONITORING TECHNIQUES



#### Spot photograph

A spot photograph is an image taken looking vertically down on a marked spot or a quadrant from head height (Fig. 3). This is used for recording ground cover, species and organic litter for a standard sized area.

Figure 3: Spot photograph monitoring  
Source: Grodecki & van Willing 2010

### Photo Quadrat Monitoring

The purpose of photo quadrat monitoring is to derive more detailed quantitative data, which can be compared between the baseline and subsequent data sets taken at the same location over time. This additional data can also be spatially related to the contents of the photopoint photos over time. Like photopoint monitoring, you must be clear about your objectives when considering photo quadrat monitoring. If the additional data is not needed then time will be wasted. Additionally, the 'site observations' section of the Photopoint Field Data Sheet can be used to collect as much or as little supporting data as the user requires and can fill information gaps to support photopoint photos. Appendix 1 in this booklet suggests when alternative measurements could be taken to support photopoint monitoring. Photo quadrat monitoring could be used as a method to 'count' where this is indicated.

To undertake photo quadrat monitoring, divide the most distant 5m section of the photopoint into 10 (1m x 1m) quadrats (see Figure 4). Within each quadrat, record the information required, for example mark a point for species present, species height and so on. If revegetation or regeneration survival rates is one of the variables you want to monitor, pegs can be used to mark the seedlings planted or new germinants. If seedlings / germinants are no longer present when you return you could conclude that the plants have died, unless the plants experience prolonged dormancy or the site has been tampered with.

This technique should not be used to assess the condition of vegetation community. The Vegetation Condition Assessment method has been developed for this purpose (<http://www.dpiw.tas.gov.au/inter.nsf/WebPages/PWOD-7PM7CH?open>).

There are several variations on photopoint monitoring using quadrats, please research the best one for your site. All methods require knowledge about plant species.

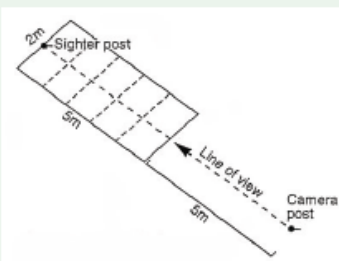


Figure 4: An example of photo quadrat monitoring for further vegetation monitoring data, aerial view.

Source: Friends of Sturt Gorge, 2010

Page 4

### HINTS AND TIPS:

- In addition to the fixed photopoint shots, consider taking multiple photos to create a panorama, to help with interpretation of context and subject in the future.
- Do not use a wide angle or telephoto lens as this alters the perspective of the photo and makes it difficult to repeat.
- Minimize sun glare in the photo and try to take photos at the same time of day. Although not always possible, locate photopoint posts north – south, and take the photo facing south with the sun behind you and the sunlight shining on the landscape facing you. This helps prevent glare and avoid direct sun light in the shot.
- Taking photos on a cloudy but bright day can help avoid strong shadows.
- Photos taken between 9am and 3pm will help reduce shadowing and different colour cast which may conceal some features. Auto settings used appropriately for different light levels can help reduce the problems of over exposure. Set the light exposure levels for the monitoring site by excluding the sky. To do this lower the camera and obtain exposure whilst the top of the camera is no higher than the horizon and lock the exposure at that level.
- Photos repeated annually should be taken at the same point in the season.
- Take a copy of the previous or original photo to the site with you and use it to compare with the field of view to ensure consistency.

### Bibliography

The following material was used as a source of reference for this publication.

- BushBroker, 2009, *Photopoint Monitoring*, Victorian Government Department of Sustainability and Environment, Melbourne. Viewed 6 February, 2011, <http://www.dse.vic.gov.au/CA256F3100024B62800F8B465098ED0A028CA257648003A45DA5File/BB+Info+sheet+19++Photopoint+monitoring.pdf>
- Friends of Sturt Gorge, 2010, viewed February 1, 2011, <http://users.sa.chariot.net.au/~fosp/friends/photopoints.htm>
- Grodecki, A and van Willing, G, Department of Environment and Resource Management, 2010, *Land Manager's Monitoring Guide – Photopoint Monitoring*, State of Queensland (Department of Environment and Resource Management). Viewed February 2, 2011, [http://www.derm.qld.gov.au/monitoring\\_guide/indicators/photopoints/pdf/photopoint\\_indicator\\_aug2010.pdf](http://www.derm.qld.gov.au/monitoring_guide/indicators/photopoints/pdf/photopoint_indicator_aug2010.pdf)
- King Island Natural Resource Management Group, 2003, *Photo Point Monitoring For Fenced Remnants*, King Island Natural Resource Management Group, King Island. Viewed February 2, 2011, <http://www.kingisland.net.au/~naturalresources/publications.htm>
- Lucey, P and Barraclough, C, 2001, *A User Guide to Photopoint Monitoring: Techniques for Riparian Areas – Field Tested Edition*, Aqua-Tex Scientific Consulting Ltd, Kimberley, B.C. Viewed February 1, 2011, <http://www.shim.bc.ca/methods/pdfs/ppmAgatex.pdf>
- O'Connor, P, Bond, A. And Jones, E, 2005, *Photo Monitoring Guidelines*, University of Adelaide, Adelaide.
- O'Connor, J and Bond, A, 2007, 'Maximising the effectiveness of photopoint monitoring for ecological management and restoration', *Ecological Management and Restoration*, Vol 8, No.3, p. 228-233.
- Pedler, J, Croft, S and Milne, T, 2007, *Volume 1: Field Guide to Bushland Monitoring NAYP*, Nature Conservation Society of South Australia, Adelaide.
- Wheatbelt Natural Resource Management, 2010, *Land manager Monitoring Guide*, Wheatbelt Natural Resource Management, Western Australia. Viewed February 2, 2011, [http://www.wheatbeltnrm.org.au/resources/WNRM\\_Land\\_Manager\\_Monitoring\\_Guide\\_V1.1.pdf](http://www.wheatbeltnrm.org.au/resources/WNRM_Land_Manager_Monitoring_Guide_V1.1.pdf)

### FOR MORE INFORMATION

Please contact the Biodiversity Coordinator, NRM South

Phone: 6221 6111

Website: [www.nrmsouth.org.au](http://www.nrmsouth.org.au)



CARING  
FOR  
OUR  
COUNTRY





**Photopoint Sighter Board:**

Date:	
Time:	
Property / Site ID:	
Photopoint Site No:	
GPS Coordinates:	
Purpose of Photo:	



## **APPENDIX 14 – POTTERS HILL BUSHLAND RESERVE REPORT CARD**

## THE DRAFT POTTERS HILL BUSHLAND RESERVE ACTIVITY PLAN RECOMMENDS:

1. Providing seats, an interpretative sign and picnic area to enjoy the panoramic vistas
2. Improving parking and ease of access off Fort Direction Road
3. Planning and developing a hill top labyrinth based on long term volunteer management
4. Developing a signed road reserve trail linking Potters Hill to South Arm township
5. Enhancing bandicoot habitat by managing weeds and promoting natural regeneration
6. Forming natural surface trails around the reserve
7. Co-ordinating shared responsibility for a local area Fire Management Plan
8. Investigating additional access from Roaring Beach Road
9. Convening of a dedicated Potters Hill Volunteer group with support of SAPRA

### STAY WITH US...

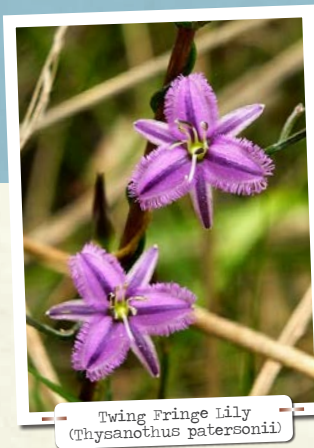
Council invites your comments on the draft Plan. The Plan will guide the community and Council as we work together to improve the management of the Reserve. You can find the draft plan at [www.ccc.tas.gov.au/consultation](http://www.ccc.tas.gov.au/consultation)

### USE THE ONLINE FORM OR CONTACT

BY 27 JANUARY 2015

Andrew Welling 0400 151 205  
[andrew@wellingconsulting.com.au](mailto:andrew@wellingconsulting.com.au)

Phil Watson 6245 8619  
[pwatson@ccc.tas.gov.au](mailto:pwatson@ccc.tas.gov.au)



Twing Fringe Lily  
(Thysanotus patersonii)



Bower spinach  
(Tetragonia implexicoma)

*The scenic vista from  
this wonderful reserve  
is spectacular'*

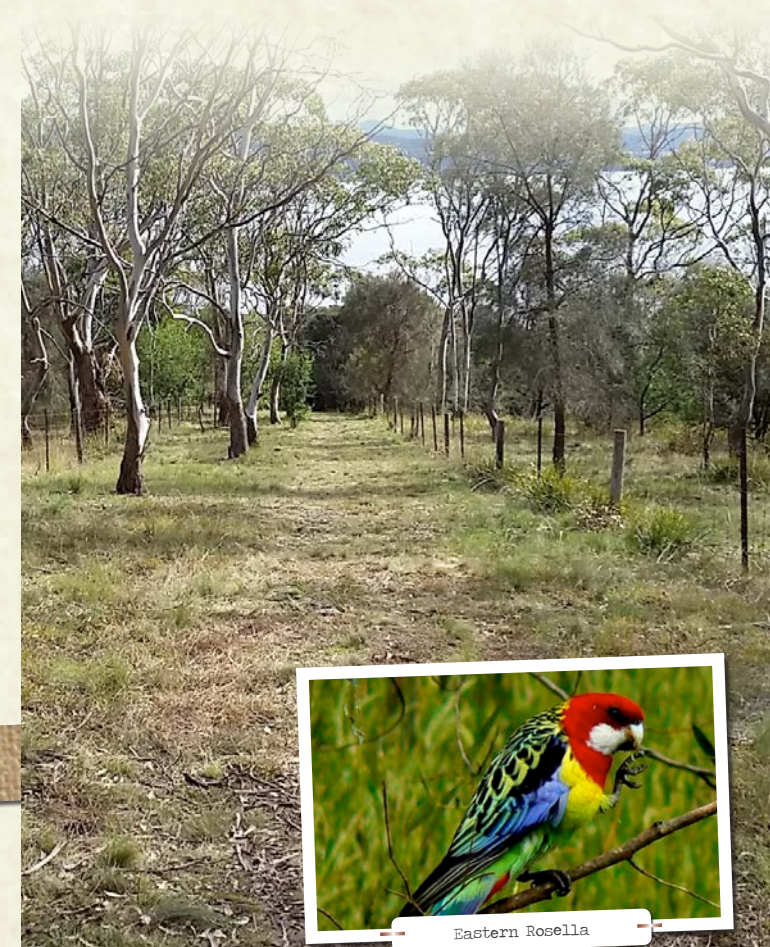
Local resident



View from top of hill towards Betsy Island

## POTTERS HILL BUSHLAND RESERVE

## REPORT CARD

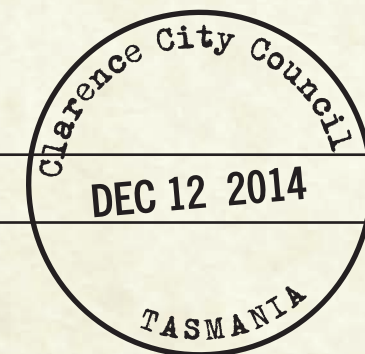


Eastern Rosella

Your Community and  
Council working together  
to care for our Reserve



*In the Spring of 2014, Clarence City Council asked the community about the Potters Hill Bushland Reserve...these are the results.*



	EVALUATION				DESCRIPTION	COMMENTS
	OUTSTANDING	VERY GOOD	PASS	CAN DO BETTER	POTTERS HILL BUSHLAND RESERVE	
LOCATION & LANDSCAPE					Hilltop reserve providing magnificent views across Derwent River, South Arm and south across Storm Bay.	<i>The Potters Hill Reserve has a wonderful 360 degree view and this is its great asset</i>
VEGETATION					Reserve contains open grassy reserve with intact white gum woodland along entrance corridor.	
ANIMALS AND BIRDS					Reserve provides excellent habitat for bandicoots and foraging habitat for raptors.	<i>We regularly see bandicoots in the reserve and surrounding area</i>
ACCESS					Limited access to reserve via Fort Direction Road.	<i>... a track down towards Roaring Beach would open up the area for more walking</i>
USAGE					Opportunity for increased usage with improved access, signage and information panel, installation of seating and labyrinth.	<i>Provide an information panel at top talking about Potters and history</i>
THREATS					Serrated tussock, fire and obscurity from the South Arm community and tourists.	

Stay with us on the journey of caring for the Potters Hill Bushland Reserve. Your comments are highly valued!  
Go to <http://www.ccc.tas.gov.au/consultation> to comment.

