



Reserve Activity Plan

2016 - 2020

CLARENCE PLAINS RESERVES



ADVICE PREPARED BY
TASFLORA FOR
CLARENCE CITY COUNCIL
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Weed Control and Native Vegetation Specialists

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1 BACKGROUND

This Reserve Activity Plan relates to several reserves within the Clarence Plains catchment on Hobart's eastern shore: the Clarence Plains Riparian Reserves, the Rokeby Beach Coastal Reserves and two currently undeveloped Public Reserves in the suburb of Rokeby. Central to these Reserves is the natural waterway of Clarence Plains Rivulet, with its surrounding native vegetation providing a biodiversity linkage between Clarendon Vale and Rokeby. The Reserves are valued by locals for their natural setting, recreational opportunities and heritage values.

The Reserves form part of the Clarence Plains Catchment, for which a *Clarence Plains Catchment Management Plan* was developed in 1998.¹ Tranmere-Clarence Plains Land and Coastcare Inc. (TACPLACI) has played an active role in caring for the public open space along Clarence Plains Rivulet between Goodwins Road and Rokeby Road over the past 20 years, and key activities undertaken under this plan have included restoration works (weed control, revegetation), the construction of a sealed walkway and the installation of Old Rokeby Historic Trail interpretation signs.

In 2014, a draft *Clarence Plains Environmental Management Plan* was developed to replace the 1998 plan.² However this plan has not yet been released for public consultation. A weed management plan and a bushfire management plan have also served to guide management activities in the Riparian Reserves between Goodwins Road and Rokeby Road.^{3,4} No specific on ground management plans have been endorsed or implemented for the remaining Public Reserves or Rokeby Beach area.

Tasflora has now been engaged by Council to develop a five year Reserve Activity Plan for on ground management activities within the Reserves, including the development of an implementation plan identifying immediate and ongoing management priorities to be undertaken during the period 2016-2020.⁵

The recommendations contained within this *Clarence Plains Reserves Activity Plan 2016-2020* are intended to provide guidance for on ground activities that can be implemented by Council, community groups and/or volunteers. It is acknowledged that it may not be possible to undertake all recommended activities due to resource constraints; rather the intent of this plan is to provide a guide to management

¹ Sinclair Knight Mertz (1998). *Clarence Plains Catchment management plan: final report*. Unpublished report for the Tranmere-Clarence Plains Land and Coastcare Inc.

² North Barker Ecosystem Services (2014). *Draft Clarence Plains environmental management strategy 2015-2030*. Unpublished report for Clarence City Council.

³ Tasflora (2009). *Weed management plan: 45 & 45A Goodwins Road, Clarendon Vale*. Unpublished report for Clarence City Council.

⁴ AVK Environmental Management (2010). *Draft bushfire management plan: 45 & 45A Goodwins Road, Clarendon Vale*. Unpublished report for Clarence City Council.

⁵ The *Clarence Plains Reserves Activity Plan 2016-2020* falls under Council's *Clarence Bushland and Coastal Strategy*, which summarises plans and strategies relevant to Reserves within the Clarence municipality.

concepts and outcomes that could be achieved if sufficient funding can be obtained.

2 OBJECTIVES

The objectives of the *Clarence Plains Reserves Activity Plan 2016-2020* are to:

- ensure the Clarence Plains Reserves are sustainably managed to preserve and enhance their natural, cultural and social values;
- identify priority management activities to be undertaken within the Clarence Plains Reserves by Council, community groups and/or volunteers as resources become available during the period 2016-2020; and
- encourage community engagement through raising awareness of the Clarence Plains Reserves' values and encourage participation in activities to minimise threats to these values.

3 SITE DESCRIPTION

The area covered by the *Clarence Plains Reserves Activity Plan 2016-2020* is illustrated in Figure 1. It includes the following Reserves which are owned and managed by Council:

- Clarence Plains Riparian Reserves - comprised of 45 and 45a Goodwins Road, 10 Reynolds Road, 21 Grange Road East, and 60a Droughty Point Road (primarily zoned as Open Space, with some smaller areas within these Reserves zoned as Particular Purpose under the Clarence Interim Planning Scheme 2015⁶);
- Public Reserves - comprised of 10 Grange Road West (zoned Open Space / Particular Purpose) and 36 Duntroon Drive (zoned General Residential); and
- Rokeby Beach Coastal Reserves, comprised of 89, 91a, 103 and 161 Droughty Point Road (all zoned Open Space).

4 SITE VALUES

4.1 Native flora

Native bushland vegetation occurs adjacent to Clarence Plain Rivulet within the Clarence Plains Riparian Reserves. A 4.5 hectare remnant patch of *Eucalyptus ovata* forest exists on the floodplain adjacent to Clarence Plains Rivulet at 45A Goodwins Road (refer Figure 2), with remnant pockets of this community also occurring along the length of the rivulet towards Rokeby Road. This community is listed as a threatened native vegetation community under the Tasmanian *Nature Conservation Act 2005*. Moving away from the floodplain, the *E. ovata* community grades into *Allocasuarina littoralis* (she oak) forest at 45A Goodwins Road (refer Figure 3). Remnant she oak forest also occurs at 60a Droughty Point Road. A full description of each of these native vegetation communities is provided at Appendix 1.

⁶ <http://www.iplan.tas.gov.au/pages/plan/book.aspx?exhibit=claipts>

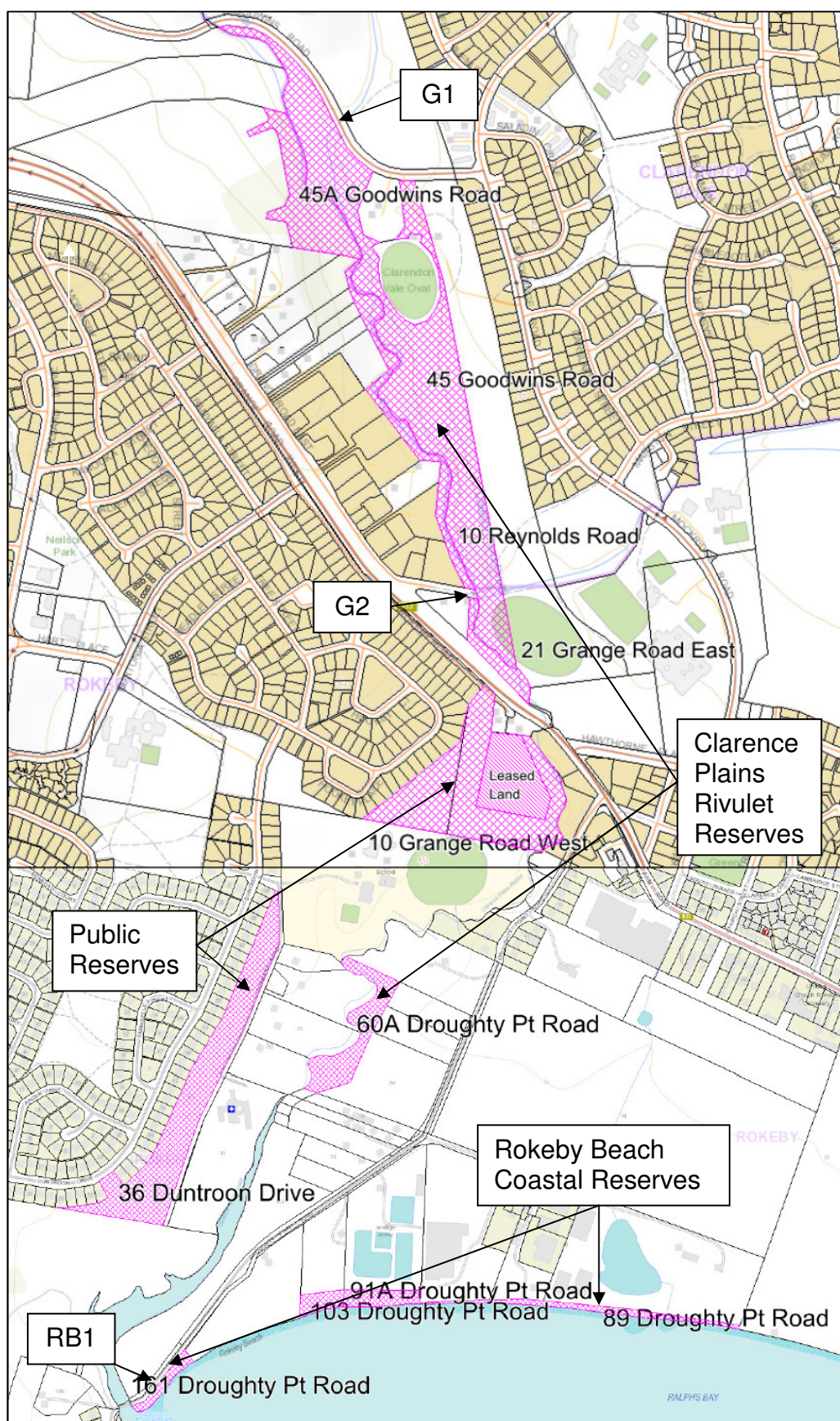


Figure 1: Areas covered by the *Clarence Plains Reserves Activity Plan 2016-2020*, including main Reserve entrances G1, G2 and RB1 (base map provided by Clarence City Council).



Figure 2: Typical *Eucalyptus ovata* forest along Clarence Plains Rivulet.



Figure 3: Typical *Allocasuarina verticillata* forest at 45A Goodwins Road.

Three threatened species listed under the Tasmanian *Threatened Species Protection Act 1995* (the TSP Act) and/or Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) have been previously recorded within the Clarence Plains Riparian Reserves: *Carex tasmanica* (curly sedge), *Eucalyptus risdonii* (Risdon peppermint), *Juncus amabilis* (gentle rush) and *Vittadinia gracilis* (woolly New Holland daisy). Further information on each of these threatened species is provided at Appendix 1.

Outside the scope of this plan, but of considerable conservation value, is the Clarence Plains Rivulet saltmarsh. This three hectare saltmarsh is located on private land near Rokeby Beach and is comprised of succulent saline herbland and saline sedgeland/rushland vegetation communities. Several threatened plant species occur in this area, and it provides habitat for a range of bird species. While effort has been made by Council to acquire this land, it remains in private ownership. Council should continue to pursue the purchase of (or acquisition of management rights to) this important saltmarsh area. In the event that the saltmarsh is acquired by Council, or management rights are obtained, an addendum to this plan will be developed to ensure best practice management of this area.

Recommendation 1: Continue to pursue the purchase of (or acquisition of management rights to) the Clarence Plains Rivulet saltmarsh.

4.2 Native fauna

The Clarence Plains Riparian Reserves contains suitable habitat for a range of native wildlife, including mammals, birds, reptiles, amphibians and invertebrates. Areas of native vegetation contain some or all of the following habitat attributes:

- mature or dead eucalypt trees with hollows, which provide potential den and nest sites for possums and hollow-nesting bird species, including the endangered swift parrot (*Lathamus discolor*) and Tasmanian masked owl (*Tyto novaehollandiae castanops*);
- mature, flowering eucalypt trees that provide a foraging source for possums and birds, including *Eucalyptus ovata* trees which may provide nectar for the swift parrot; and
- fallen timber and leaf litter, which provide shelter and foraging habitat for small birds, reptiles and invertebrates.

The immediate environments of Clarence Plains Rivulet and Stokell Creek provide a distinct and localised habitat for aquatic fauna, including fish, frogs and aquatic invertebrates. Platypuses (*Ornithorhynchus anatinus*) and galaxias species have been historically recorded. Many of these species are sensitive to changes to their riparian environment such as habitat loss, changing water flows, contaminants, erosion, in-stream barriers and weed infestations. Management of this riparian environment has been identified as an important ongoing issue for this area.

The sandy foreshore along Rokeby Beach provides habitat for shorebirds such as the pied oyster catcher (*Haematopus longirostris*) and the silver gull (*Chroicocephalus novaehollandiae*).

While no threatened fauna species have been previously recorded within the Reserves,⁷ there are small areas of potential foraging and/or nesting habitat for several threatened species, including the Tasmanian masked owl, the swift parrot, and the eastern barred bandicoot (*Perameles gunnii*). Further information on these species is provided at Appendix 1.

4.3 Cultural heritage

4.3.1 Aboriginal heritage

The municipality of Clarence, including the Clarence Plains catchment, was previously occupied by the Mumirimina band of the Oyster Bay tribe,⁸ and significant aboriginal heritage sites have been recorded within the Clarence Plains Catchment.⁹

Under the Tasmanian *Aboriginal Relics Act 1975* (the Aboriginal Relics Act), it is an offence to 'destroy, damage, disfigure, conceal, uncover, expose, excavate or otherwise interfere with a relic' unless a permit has been granted. It is therefore important to ensure that no artefacts or other cultural material are exposed or disturbed without a permit during Reserve management activities. In the event that an Aboriginal artefact is inadvertently uncovered, an Unanticipated Discovery Plan should be implemented immediately (refer Appendix 2) and the items reported to Aboriginal Heritage Tasmania for advice.

4.3.2 Historic heritage

An historical overview of the Clarence Plains area is provided in *Footprints: the people and places of early Clarence Plains and Rokeby*, which was published by TACPLACI in 2008.¹⁰ Within the Reserves, remnants of the first orchard in Clarence Plains can be observed along Clarence Plains Rivulet near Clarendon Vale House. Weeping willows, large fruit trees and hawthorn hedges along Clarence Plains Rivulet at 45 Goodwins Road are listed as a heritage place under the *Clarence Interim Planning Scheme 2015*. A section of the Old Rokeby Historic Trail (a Century of Federation Project undertaken by TACPLACI) follows the Clarence Plains Rivulet Track, with interpretation signs installed at several locations.

4.4 Recreational values

The Clarence Plains Rivulet Track provides a thoroughfare from Goodwins Road to Rokeby Road and is a popular route for walking, cycling, jogging and dog exercise. It also forms part of the Old Rokeby Historic Trail.

⁷ Department of Primary Industries, Parks, Water and Environment (2015). *Natural values report*. Unpublished report for Tasflora.

⁸ Alexander, A. (2003). *The eastern shore: a history of Clarence*. Clarence City Council, Rosny Park.

⁹ North Barker Ecosystem Services (2014). *Draft Clarence Plains environmental management strategy 2015-2030*. Unpublished report for Clarence City Council.

¹⁰ Andrew, W (2008). *Footprints: the people and places of early Clarence Plains and Rokeby*. Tranmere-Clarence Plains Land & Coastcare Inc., Howrah.

Ocean access for boats and kayaks is possible from Rokeby Beach at 161 Droughty Point Road.

4.5 Education values

There is a strong history of community commitment and enthusiasm for caring for the Clarence Plains Rivulet Reserves through TACPLACI, which was established in 1996. The group's activities have included revegetation, mulching, weeding and rubbish removal. The group regularly engages with the local community and schools to undertake working bees and walk and talk sessions on the natural and historical values of the area. The activities of TACPLACI provide an ongoing opportunity to share knowledge and promote community education of the Reserves' history, natural values and potential threats to these.

The Reserves' natural environment provides a useful platform for local school groups to undertake nature and science based studies. For example, revegetation activities have previously been undertaken in conjunction with Emmanuel Christian School along fence lines at 10 Grange Road West. Rokeby High School has also expressed a desire to undertake educational activities in the Reserves (eg water sampling stations; biome study points; opportunities to participate in planting, bush tucker or fitness trail activities; and outdoor education and science initiatives at Rokeby Beach).

4.6 Landscape setting and connectivity

The natural waterway of Clarence Plains Rivulet and its surrounding native vegetation provide a greenway linkage and biodiversity corridor between Clarendon Vale and Rokeby. Connectivity between areas of bushland provides an important ecological link for flora and fauna to enable gene flow between populations and to allow animals to move across the landscape for foraging, nesting and breeding.

Connectivity from a user perspective could be improved. While there is a direct walking track link along Clarence Plains Rivulet between Goodwins Road and Rokeby Road, there is no formal pedestrian linkage to through to Glebe Hill Estate in the north west or Rokeby Beach to the south, or to track networks in adjoining suburbs.

A feasibility study examining potential future track linkages and biodiversity corridors in the Pass Road, Rokeby area was completed in 2014.¹¹ This study identified existing and potential biodiversity and track linkages between the Reserves and other bushland areas within the Clarence Plains catchment (refer Figure 4).

A key outcome arising from this work was the concept of a continuous Council-managed Clarence Plains Rivulet Greenway: a track and biodiversity corridor linking Clarendon Vale with Rokeby Beach. The Greenway would consolidate existing vegetation links along the full length of Clarence Plains Rivulet between

¹¹ North Barker Ecosystem Service (2014). *Pass Road track and biodiversity corridor linkages feasibility study*. Unpublished report for Clarence City Council.

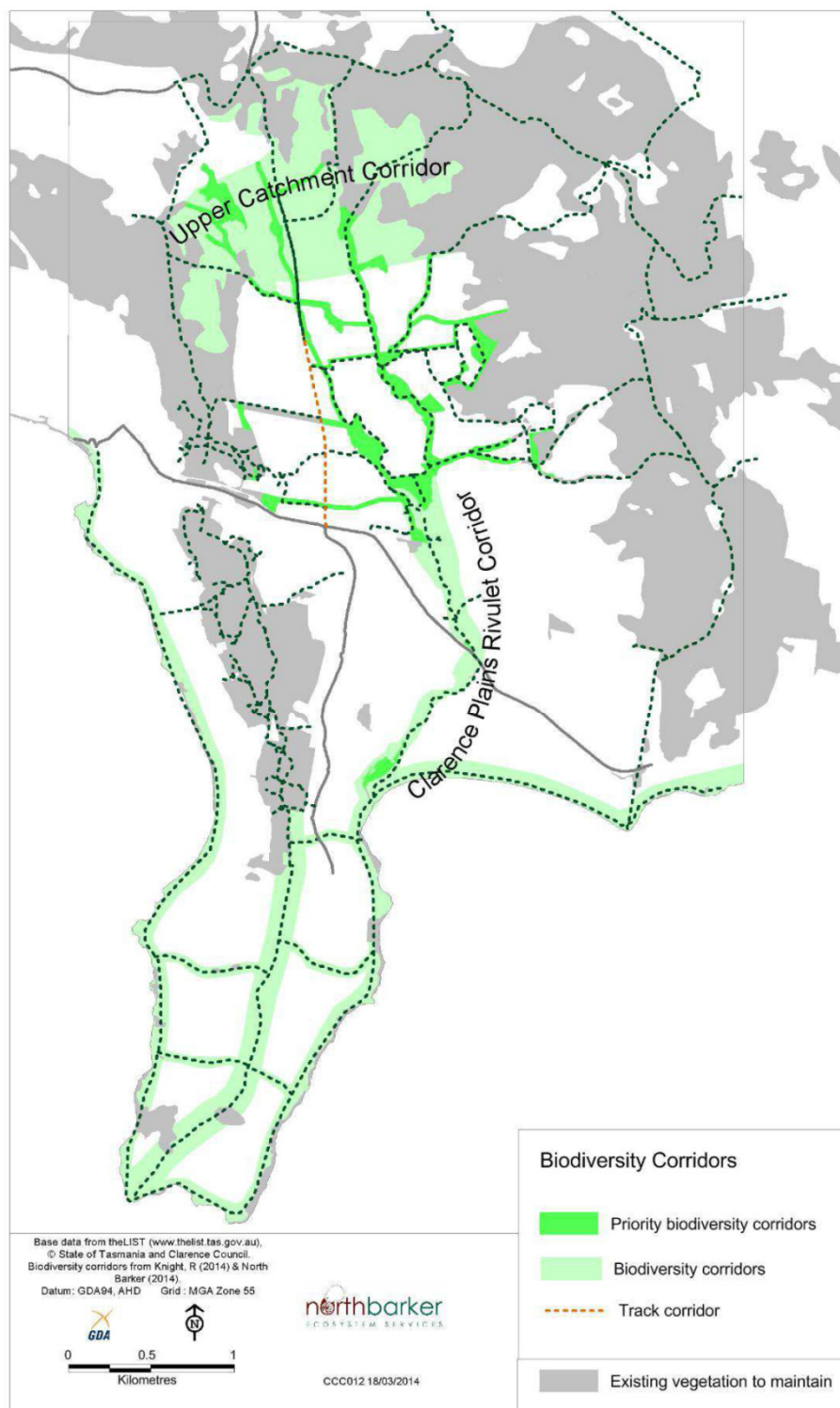


Figure 4: Direct and indirect biodiversity linkages between the Clarence Plain Riparian Reserves and other bushland areas, including the proposed Clarence Plains Rivulet corridor (Greenway).¹²

¹² Source: North Barker Ecosystem Service (2014). *Pass Road track and biodiversity corridor linkages feasibility study*. Unpublished report for Clarence City Council.

Goodwins Road and Rokeby Beach, while proving opportunities for landscaped parklands and other recreational opportunities adjacent to a Clarence Plains Rivulet walking track along the length of the Rivulet (further discussed in Section 12). Liaison and negotiation with private landowners to gain right of way via purchase, licence or lease agreements will be required to fully develop this link.

As the cost to develop a Clarence Plains Riparian Greenway is likely to be considerable, a feasibility study should be undertaken to determine the mechanisms for achieving this vision. This should include consideration of possible funding mechanisms, which may include the subdivision of the currently undeveloped Council owned public reserves at 36 Duntroon Drive (which is already zoned General Residential) and 10 Grange Road West. The feasibility study should also examine the most suitable location and mechanism (eg overpass) for allowing safe access across Rokeby Road.

Recommendation 2: Undertake a feasibility study into the development of a Clarence Plains Riparian Greenway, incorporating a continuous biodiversity corridor and walking track along Clarence Plains Rivulet between Goodwins Road and Rokeby Beach.

5 STAKEHOLDER CONSULTATION

A public meeting and community 'walk and talk' session was facilitated by Council and Tasflora on 15 November 2015 and attended by 12 local residents, including members of TACPLACI. The purpose of the session was to seek input on the values and management issues associated with the Reserves. A further meeting with members of the One Community Together project was held on 8 April 2016.¹³ A feedback form seeking input to the *Clarence Plains Reserves Activity Plan 2016-2020* was also mailed to local residents and relevant stakeholders.

The draft *Clarence Plains Reserves Activity Plan 2016-2020* was released for community consultation in June - July 2016. A Clarence Plains Reserves Activity Plan Report Card was developed as a key tool in encouraging stakeholder feedback on the draft plan and was mailed out to residents and other interested stakeholders. Fifteen submissions on the draft plan were received during the consultation period. A summary of the issues raised in these submissions is provided at Appendix 3.

Where possible, all relevant community feedback has been considered in the development of the draft *Clarence Plains Reserves Activity Plan 2016-2020*. However some issues identified during the consultation process are beyond the scope of this plan or pertain to management issues outside the Reserve. These issues have been noted by Council and will be addressed through other processes where feasible.

¹³ Further information about this project are available at:
https://www.facebook.com/onecommunitytogether/timeline?ref=page_internal

6 WEED MANAGEMENT

6.1 Weed species present

A list of environmental weed species occurring in the Reserves, including their status and recommended control methods, is provided at Appendix 4. To assist with identification, a picture of each weed species is also provided. The distribution of declared and other environmental weed species is illustrated in Appendix 5.

Several weed species found in the Reserves are classified as declared weeds under the Tasmanian *Weed Management Act 1999* (the Weed Management Act) and/or Weeds of National Significance (WONS). Where possible, these weeds should be targeted as a priority to prevent their further spread.

Significant primary weed control work has been undertaken at 45 and 45A Goodwins Road since the weed management plan for these areas was produced in 2009,¹⁴ with a significant decrease in weed infestations achieved through work undertaken by TACPLACI, weed contractors, Work for the Dole teams and Council. Ongoing maintenance is required to ensure eradication of species previously targeted, including blue periwinkle (*Vinca major*), cumbungi (*Typha* spp.), and blackberry (*Rubus fruticosus* aggregate). Exotic grasses and broadleaf weeds remain prevalent throughout.

Mature fruit trees [including mulberry (*Morus* sp.) and quince (*Cydonia oblonga*)], hawthorn (*Crataegus monogyna*) and weeping willows (*Salix* sp.) are heritage listed under the *Clarence Interim Planning Scheme 2015* and should not be targeted along Clarence Plains Rivulet between Goodwins Road and Rokeby Road due to their cultural significance to the Clarence municipality. However, seedlings of these species may be controlled.

6.2 Recommendations for primary weed control work

Due to the success of previous weed control work, there is limited primary weed control work required in the Reserves. Weed control along Clarence Plains Rivulet at 45 and 45A Goodwins Road has been particularly successful. In these areas priority should be given to an annual maintenance sweep using the techniques identified in Appendix 4 to ensure that previously controlled weeds do not become re-established (refer section 6.4).

Ongoing annual monitoring throughout all the Reserves for primary infestations of the declared weed Texas needle grass (*Nassella leucotricha*) should be undertaken. To date this weed has only been found in the Clarence municipality in Tasmania, and it has been previously recorded within 50m of 45a Goodwins Road.

Recommendation 3: Undertake ongoing annual monitoring throughout all the Reserves for primary infestations of Texas needle grass.

¹⁴ Tasflora (2009). *Weed management plan: 45 & 45A Goodwins Road, Clarendon Vale*. Unpublished report for Clarence City Council.

6.3 Non-priority weeds

Broadleaf weeds and exotic grasses are common through the Reserves and are not considered a priority for control except in revegetation areas and where their removal is desirable as part of an ongoing general Reserve maintenance program (eg along track edges) or fuel reduction purposes.

Recommendation 4: Undertake control of exotic grasses and broadleaf weeds only in revegetation areas and where necessary as part of a general Reserve maintenance program.

6.4 Maintenance of weed control work

Regeneration of weeds in the Reserves is likely to continue for many years due to the existing seed bank in the soil and the fact that some weed species have an inherent ability to resprout following primary control. Weed control activities will not be successful unless a commitment is made to undertaking ongoing follow-up maintenance activities.

Maintenance of primary weed control work should be undertaken annually, preferably in spring and summer when plants are least likely to be dormant. This can be achieved by performing an annual sweep to remove all new germinants of previously targeted weeds and undertake follow-up control on any plants that may have resprouted. Ongoing annual follow-up will be required until the soil seed bank is exhausted.

Recommendation 5: Undertake an annual sweep and follow-up control of all previously targeted weeds at 45 & 45A Goodwins Road.

Regeneration of serrated tussock (*Nasella trichotoma*) requires ongoing monitoring due to the close proximity of neighbouring properties with this species present. As well, several large infestations of blue periwinkle, cumbungi and blackberry remain along the length of Clarence Plains Rivulet even in areas where previous weed control has been completed. Ongoing control using the techniques identified in Appendix 4 will be required to eradicate these species.

Recommendation 6: Undertake ongoing monitoring and control of species with an inherent ability to regenerate, including serrated tussock, blue periwinkle, cumbungi and blackberry.

GPS weed mapping of environmental weeds occurring at 45 and 45A Goodwins Road has been undertaken during the development of this plan. In order to monitor the success of the weed control program, follow-up GPS weed mapping should be undertaken after five years to assess progress and facilitate planning of future weed control activities. As well, GPS mapping by contractors and volunteers as they control weeds should be encouraged, with data to be provided to Council to enable its database to be updated.

Recommendation 7: Undertake follow-up GPS mapping of all weeds in the Reserve after five years to monitor progress and inform future weed control priorities.

7 REGENERATION AND REVEGETATION

7.1 Regeneration

Natural regeneration should be encouraged within the Reserves as the most cost effective and natural means of restoring their original vegetation in areas where disturbance has occurred. Apart from weed control, management activities in areas of intact native vegetation should be limited to encourage the natural regeneration process.

7.2 Revegetation activities

The primary purpose of undertaking new revegetation activities is to preserve and enhance existing areas of remnant native vegetation, provide habitat for native birds and animals, and improve the visual amenity for users of the Reserves. However, revegetation activities are resource intensive, and should only be undertaken if there are resources available for ongoing maintenance (eg weeding, watering) of revegetation sites.

Selective revegetation activities have previously been undertaken along Clarence Plains Rivulet at various locations at 45 and 45A Goodwins Road, as well as along fence lines at 10 Grange Road East. Ongoing maintenance of many of these sites has resulted in the successful establishment of native plants following large scale weed control activities and/or in areas that were previously devoid of native vegetation. Sufficient resources should be made available for ongoing maintenance of these sites (eg weeding, watering) before establishing new sites.

Recommendation 8: New revegetation and landscaping activities should not be committed to unless sufficient resources are available to undertake ongoing regular maintenance of existing revegetation areas.

While further large scale revegetation activities are not considered necessary at 45 and 45A Goodwins Road, selected revegetation along Clarence Plains Rivulet may be desirable in areas where large areas of weeds have been previously removed and natural regeneration is not occurring. Other recommended revegetation and landscaping activities in the Reserves are summarised in Table 1. Where possible, plants should be grown from the seed or cuttings of plants local to the area to ensure local variants of plants are planted.¹⁵

Recommendation 9: Undertake targeted revegetation within the Reserves to regenerate bare areas following weed control activities, extend the existing biodiversity corridor, improve visual amenity, provide future shade, and expand the local edible landscape.

¹⁵ An overview of best practice revegetation and regeneration techniques has been produced by Greening Australia Victoria (2003) and is available at http://live.greeningaustralia.org.au/nativevegetation/pages/pdf/Authors%20C%2013_Corr.pdf

Table 1: Recommended revegetation activities to be undertaken within the Reserves.

Activity	Purpose	Recommended locations	Priority
Revegetation following weed control	May be desirable along Clarence Plains Rivulet where large areas of weeds have been previously removed and natural regeneration is not occurring	Ongoing assessment required where large tracts of weeds have been previously removed. Only to be undertaken if natural regeneration is considered unlikely to occur or if bank stabilisation is required.	As resources become available
Shelter belt planting	To provide an extension of the existing biodiversity corridor	Strip of native vegetation (trees and understorey) along edge of riparian zone at 10 Grange Road West 3-4 rows additional rows of shelterbelt plantings along fence lines at 10 Grange Road West	As resources become available
Canopy planting with she-oaks	To improve visual amenity and provide future shade	Adjacent to Rokeby Beach car park at RB1	As resources become available
Planting of edible native plants	Alignment with community desires to expand the local edible landscape	Identify and plant appropriate edible native species, together with associated interpretation signage	As resources become available

8 RIPARIAN ZONE MANAGEMENT

Clarence Plains Rivulet and Stokell Creek provide important habitat for aquatic fauna, as described in Section 4.2. Many of these species are sensitive to changes to their riparian environment such as contaminants, erosion, in-stream barriers and weed infestations. In particular, stormwater runoff has the potential to negatively impact on waterway health and species diversity.

Some water sensitive urban design (WSUD) work has previously been undertaken in the upper section of the Clarence Plains Riparian Reserves to improve water quality and flows. A section of Stokell Creek at 45 Goodwins Road has been rock lined in an attempt to prevent erosion, although there is some concern that this may catch upstream rubbish and provide a substrate for weed regeneration.¹⁶

Annual monitoring of water quality levels has been undertaken at two sites within the Clarence Plains Riparian Reserves by TACPLACI and the Derwent Estuary Program, in conjunction with Council. Water quality at 45 Goodwins Road has decreased since 2002, while it has improved slightly south of Rokeby Road.¹⁷ Over the next 12 months Council is developing a Clarence Plains Rivulet

¹⁶ North Barker Ecosystem Services (2014). *Draft Clarence Plains environmental management strategy 2015-2030*. Unpublished report for Clarence City Council.

¹⁷ Ibid.

Stormwater System Management Plan, the development of which will include consultation with key stakeholders such as Department of State Growth, the Derwent Estuary Program, NRM South and TACPLACI.

Recommendation 10: Continue and enhance the existing water quality monitoring program in Clarence Plains Rivulet in conjunction with the development of the Clarence Plains Rivulet Stormwater System Management Plan.

9 FAUNA HABITAT MANAGEMENT

As described in Section 4.2, the Reserves plays an important role in providing habitat for a range of wildlife, including mammals, birds, reptiles, amphibians and invertebrates. Native revegetation activities proposed in Section 7 will play a role in enhancing the habitat values of the Reserves.

A variety of canopy layers, dead trees, hollow logs, fallen timber and leaf litter are required to provide important habitat for wildlife, including mammals, birds, reptiles and invertebrates. Leaf litter and dead wood are often viewed as a fire risk in bushland reserves located in urban areas. However, it is important that fauna habitat requirements are considered when planning bushfire management activities in the Reserves. The former bushfire management plan for 45 and 45A Goodwins Road recognised this.¹⁸

Recommendation 11: Consider fauna habitat requirements when planning future bushfire management activities in the Reserves.

Uncontrolled domestic dogs and cats have the potential to harass or kill native wildlife. 45 Goodwins Road is currently used for off-lead dog exercise (with dogs to remain under effective control) under Council's Dog Management Policy.¹⁹ Council promotes responsible cat ownership, and will continue to encourage local residents to meet their obligations under the *Cat Management Act 2009* through having their cats microchipped, desexed and under effective control (eg indoors at night).

10 VEGETATION AND FAUNA MONITORING

An assessment of the condition of the threatened *Eucalyptus ovata* forest at 45A Goodwins Road was undertaken in April 2016 (refer Appendix 6). Native vegetation condition monitoring is undertaken to determine the current condition of a native vegetation community and to assess trends in vegetation composition and condition over time. Information from regular vegetation condition assessments (VCAs) will enable an evaluation of the impact and effectiveness of management actions on the Reserve's native vegetation. The TASVEG VCA method should be undertaken by trained Council staff or consultants using standard TASVEG VCA

¹⁸ AVK Environmental Management (2010). *Draft bushfire management plan: 45 & 45A Goodwins Road, Clarendon Vale*. Unpublished report for Clarence City Council.

¹⁹ Clarence City Council (2015). Dog Management Policy. Clarence City Council, Tasmania.

forms.²⁰

Recommendation 12: Undertake a follow-up vegetation condition assessment (VCA) of the *Eucalyptus ovata* forest community at 45A Goodwins Road in 2020.

Photo points were established within the VCA zone. It is recommended that additional photo points be established at several other locations within Clarence Plains Rivulet Reserves to facilitate monitoring of vegetation condition and annual regeneration growth.

Recommendation 13: Establish photo points at several locations along Clarence Plains Rivulet to facilitate monitoring of annual regeneration growth.

The Reserves each contain unique habitat for a range of wildlife species, and it is expected that species diversity could increase over time with ongoing appropriate vegetation management practices. Fauna surveys (including mammal, bird, reptile and invertebrate surveys, as well as an aquatic fauna survey of Clarence Plains Rivulet) and habitat assessments to confirm the species present in the Reserves are recommended to be undertaken now and at the end of the plan (ie 2016 and 2020) as a basis for monitoring species diversity over time.²¹ Monitoring of ground fauna using hair sampling devices is also recommended to establish the existence of stray and feral cats in the Reserves and identify the extent of local native ground fauna that cats may be impacting upon.

Recommendation 14: Undertake fauna surveys and establish a series of hair sampling devices along Clarence Plains Rivulet in 2016 and 2020 to assess species diversity and further inform on ground management activities.

An analysis of all completed VCAs, fauna surveys and photo points should be undertaken in 2020 to determine trends and implications for ongoing vegetation management in the Reserves. This should be undertaken in conjunction with a review of the *Clarence Plains Reserves Activity Plan 2016-2020* scheduled for 2020 (refer Section 19).

Recommendation 15: Undertake an analysis of all photo points, VCAs and fauna surveys in 2020 to determine trends and inform future management activities.

11 RESERVE ENTRANCES

The location of the three main entrances to the Reserves are illustrated in Figure 1. Immediate management issues identified for existing entrances are summarised in Table 2. No major landscaping is recommended at main entrances until priority

²⁰ Full details of the TASVEG VCA method can be found at: [http://dipwe.tas.gov.au/conservation/flora-of-tasmania/monitoring-and-mapping-tasmanias-vegetation-\(tasveg\)/vegetation-monitoring-in-tasmania](http://dipwe.tas.gov.au/conservation/flora-of-tasmania/monitoring-and-mapping-tasmanias-vegetation-(tasveg)/vegetation-monitoring-in-tasmania)

²¹ If possible, bird surveys should be undertaken in conjunction with BirdLife Tasmania using standard BirdLife Australia monitoring techniques. A local zoologist has indicated an interest in surveying bat numbers, which should also be conducted if possible.

management options for the proposed Clarence Plains Riparian Greenway have been identified (refer Section 4.6).

Table 2: Recommended management activities to be undertaken at Reserve entrances.

Issue	Description	Recommendation
Signage	There is no clear sign identifying the Reserve name at main Reserve entrances	Standard Reserve name signs to be installed at G1 and G2
	Information about dog and other restrictions are not present or are above head height	Existing signage should be installed and/or moved to eye height at G1, G2 and RB1 to clearly inform users of restrictions on certain activities in the Reserves
Access for mobility aids and prams	Access to the Clarence Plains Rivulet walking track is difficult from Mockridge Road for people who rely on mobility aids (eg wheelchairs, mobility scooters) and prams due to high kerb side gutters	Install pram ramps or curb ramp crossings at appropriate locations along Mockridge Road
Landscaping	RB1 would benefit from native tree planting to improve visual amenity and provide future shade	Refer Section 7.2

Recommendation 16: Improve Reserve entrances by installing additional signage, improving access and undertaking landscaping activities as recommended in Table 2.

12 TRACKS AND TRAILS

Connectivity from a user perspective could be improved. As discussed in Section 4.6, it is recommended that the feasibility of developing a continuous Council-managed Clarence Plains Rivulet Greenway providing a recreational track and biodiversity corridor between Clarendon Vale and Rokeby Beach be investigated (refer Recommendation 2).

Community consultation has also indicated the desire for pedestrian linkages from 45A Goodwins Road to Glebe Hill Estate and Rokeby Road to enable a round trip via Grange Road East. These linkages were also identified in the Pass Road track and biodiversity corridor linkages feasibility study in 2014,²² as illustrated in Figure 5.

Recommendation 17: Create a sealed pedestrian linkage from 45 Goodwins Road to Glebe Hill Estate.

²² North Barker Ecosystem Service (2014). *Pass Road track and biodiversity corridor linkages feasibility study*. Unpublished report for Clarence City Council.

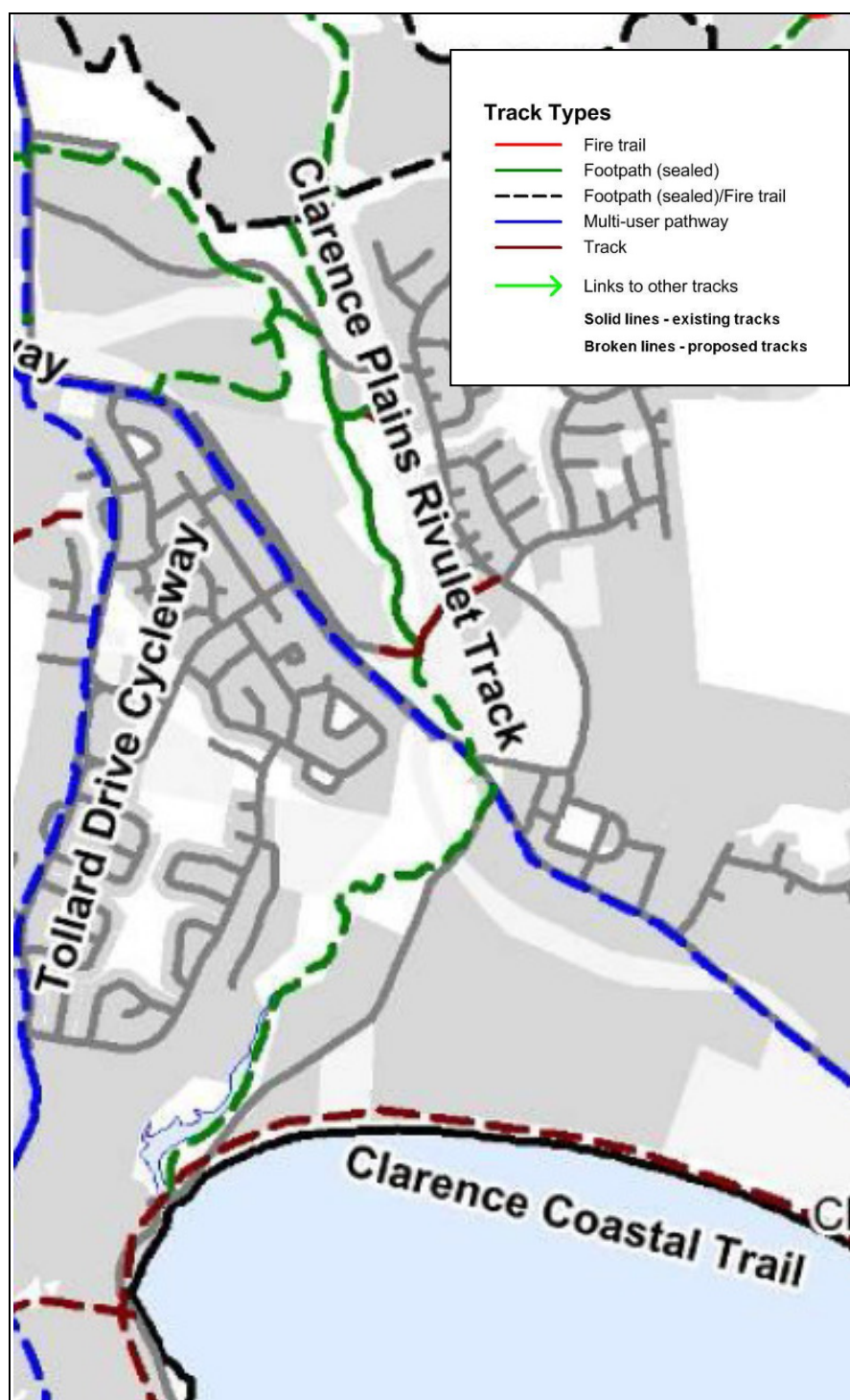


Figure 5: Existing and new track linkages identified as part of the Clarence Plains Rivulet Track.²³

²³ Adapted from North Barker Ecosystem Service (2014). *Pass Road track and biodiversity corridor linkages feasibility study*. Unpublished report for Clarence City Council.

Recommendation 18: Create a sealed pedestrian linkage from the northern end of 45A Goodwins Road to Rokeby Road, enabling a round trip via Grange Road East

Key management identified with the Reserves' existing tracks and trails networks are summarised in Table 3.

Table 3: Track management issues identified within the Reserves' existing track network.

Issue	Description	Recommendation
Track condition	The existing informal access to Emmanuel Christian School via 10 Grange Road East is not defined and would benefit from formal demarcation	Providing a gravel walkway, mend existing fences and undertake selective revegetation in conjunction with the local school
Public access to 60A Droughty Point Road	Public access to 60A Droughty Point Road is only possible via private property	Negotiate with identified adjacent landowners in Chipmans Road or Droughty Point Road to facilitate formal access. This may provide an important future link to the proposed Clarence Plains Rivulet trail.

Recommendation 19: Enhance the walking track between 10 Grange Road West and Emmanuel Christian School.

Recommendation 20: Establish formal access to 60A Droughty Point Road.

13 INFRASTRUCTURE

There is currently limited community infrastructure located within the Reserves, and the natural environment would be enhanced through minimising significant additional infrastructure installation, particularly given the observed potential for vandalism indicated by community consultation.

As 45A Goodwins Road is used for dog exercise, it is recommended that a dog waste bin and bag dispensers be installed at existing (and future) main entrances to this Reserve if Council resources permit. Dog faeces were also observed adjacent to the car park car at Rokeby Beach, indicating that a dog waste bin and bag dispenser would be beneficial in this area, which will also fulfil a dual role of providing a rubbish bin for day visitors.

Recommendation 21: Install dog waste bag dispensers and bins near the stone bridge near G1, and at Reserve entrances G2 and RB1.

Due to the scenic location of Rokeby Beach at RB1, and to further promote this area's recreational value, it is recommended that new outdoor seating and a shade shelter be designed and installed adjacent in this area, taking into account Crime Prevention Through Environmental Design (CPTED) principles.

Recommendation 22: Design and install new outdoor seating and a shade shelter at RB1 using Crime Prevention Through Environmental Design principles.

The ocean along Rokeby Beach is a popular kayaking area. The opportunity exists to promote RB1 as a preferred kayak launching site, with the opportunity for kayakers to paddle around the coast to the Tranmere Coastal Reserve and beyond. Interpretation signage could be installed in this area promoting an eastern shore kayak trail, including preferred launching sites and wash down areas.

Recommendation 23: Promote a preferred kayak launch site at RB1.

Any additional installation of new infrastructure within the Reserves will be subject to limited funding, depending on the outcome of the feasibility study into the Clarence Plains Riparian Greenway. With this in mind, no additional infrastructure beyond that discussed above is proposed within the next five years unless significant funding becomes available. A further review of the infrastructure requirements of the Reserve should be undertaken in 2020.

Recommendation 24: Undertake a review of the infrastructure requirements of the Reserves in 2020.

14 BUSHFIRE MANAGEMENT

A five year Bushfire Management Plan encompassing 45 and 45A Goodwins Road was prepared in 2010, which has served to guide bushfire management activities in the Riparian Reserves between Goodwins Road and Rokeby Road.²⁴ This plan ceased operational use in June 2016. The area has since been included in Council's five year Fire and Bushland Management Operational Works Program that includes planned burning, manual fuel reduction and fire break construction as required.

15 COASTAL EROSION AND INUNDATION

Prior to undertaking any on ground work within the foreshore area in the Rokeby Beach Coastal Reserve, the *Tasmanian Coastal Works Manual: A best practice management guide for changing coastlines* should be consulted to ensure best practice coastal management techniques are implemented.²⁵

Recommendation 25: The Tasmanian Coastal Works Manual should be consulted prior to undertaking any on ground activities.

Rokeby Beach foreshore has been identified as having a medium term risk of

²⁴ AVK Environmental Management (2010). *Draft bushfire management plan: 45 & 45A Goodwins Road, Clarendon Vale*. Unpublished report for Clarence City Council.

²⁵ Page, L. and Thorp, V. (2010). *Tasmanian Coastal Works Manual: A best practice management guide for changing coastlines*. Department of Primary Industries, Parks, Water and Environment, Tasmania.

ongoing recession due to climate change and coastal processes.²⁶ Current erosion along the shoreline near 161 Droughty Point Road is illustrated in Figure 6.



Figure 6: Coastal erosion along Rokeby Beach.

Ongoing monitoring of recession rates and a detailed risk assessment of hazards to the shoreline should be undertaken to inform future adaptation management responses.

Recommendation 26: Undertake a detailed risk assessment of hazards to the shoreline at Rokeby Beach to inform future adaptation responses.

16 OTHER MANAGEMENT ISSUES

The community consultation process identified that trail bikes are an ongoing problem at 45 Goodwins Road and 36 Duntroon Drive. Management actions to prevent entry from G1 and G2 at 45 Goodwins Road will not be effective as there are many alternative unrestricted access points to this Reserve along Mockridge Road. Similarly, options for restricting access to 36 Duntroon Drive are limited as this large parcel of land is currently unfenced along the length of Chipmans Road.

While the ongoing trail bike access issue is best addressed through strategies developed by the broader One Community Together initiative, Council has indicated that it will work in partnership with Tasmania Police and local community organisations to develop strategies (including barriers) to address illegal trail bike

²⁶ SGS Economics & Planning and UNSW Water Research Laboratory (2009). *Climate change impacts on Clarence coastal areas*. Clarence City Council, Hobart.

activities in the reserves. Specifically, the Clarence Plains Riparian Greenway feasibility study should consider trail bike mitigation (eg via gates and barriers) along the proposed walking track within its scope.

The community consultation process also identified that free ranging horses in the vicinity of 60A Droughty Point Road are an ongoing problem, with horses roaming freely up to Clarence Plains Rivulet in this area. This issue should also be addressed within the Clarence Plains Riparian Greenway feasibility study.

Recommendation 27: Consider mitigation options for illegal trail bike access and free ranging horses within the scope of the Clarence Plains Riparian Greenway feasibility study.

17 COMMUNITY PARTICIPATION AND AWARENESS

Community participation and awareness has an important role to play in protecting the natural, cultural and recreational values of the Reserves. Education of locals, visitors and some residents living adjacent to the Reserves is desirable to foster behavioural change and encourage community ownership and appreciation of the Reserves' values. Key management issues identified as requiring community awareness and enforcement are summarised in Table 4.

Recommendation 28: Consider, and fund as necessary, community education to facilitate behavioural change and encourage ownership and appreciation of the values of the Reserve.

Table 4: Management issues requiring community education and awareness within the Reserves.

Issue	Description
Garden waste dumping	Dumping of garden waste in the Reserves encourages the spread of weeds and is visually unattractive for all users.
Removal of native vegetation	Removal of native vegetation in the Reserves (eg to improve views, reduce bushfire risk, collect fire wood) is illegal. It encourages the establishment of weeds and reduces species diversity and animal habitat. Seed collection should only be undertaken with Council approval.
Environmental weeds	Weeds in adjacent gardens pose a threat to existing native vegetation within the Reserves.
Wildlife	Trapping and relocation of native wildlife is not permitted.
Cats and dogs	Cats and dogs can kill native wildlife. Dogs must be kept under effective control in the Reserves. Cats should be microchipped, desexed and kept indoors at night.
Litter	Reserve users should take all rubbish with them.

Interpretation signs provide an important opportunity to display information on the Reserves' values, provide directional information and educate users about the potential negative impact of inappropriate activities. An interpretation sign is proposed along the existing Clarence Plains Rivulet track near the stone bridge at

the northern end of 45 Goodwins Road to display a trail map of the Reserve (once northern linkages to Glebe Hill Estate and Rokeby Road have been established – refer Section 12) and provide information on flora and fauna values (including prominent local flora and fauna species), cultural heritage (expanding on that already provided by the existing Old Rokeby Historic trail signage, including aboriginal heritage) and opportunities for community involvement in managing the Reserve through TACPLACI activities. Future interpretation signage should be considered during the design of the proposed Clarence Plains Rivulet Greenway.

Recommendation 29: An interpretation sign should be installed near the stone bridge at the northern end of 45 Goodwins Road to provide directional information and educate users about the natural and cultural values of Clarence Plains Rivulet.

The TACPLACI group, Work for the Dole teams and local schools (eg Emmanuel Christian School, Rokeby High School) have been actively involved in caring for the Reserves (in particular 45 and 45A Goodwins Road) over many years. Ongoing engagement with these groups, as well as seeking opportunities for Green Army involvement in Reserve management activities, should be pursued where appropriate.

Recommendation 30: Actively engage with TACPLACI, Green Army and Work for the Dole teams to seek support for Reserve management activities.

Recommendation 31: Support opportunities for local schools, landcare groups and other community groups to participate in the long term development of the proposed Clarence Plains Riparian Greenway.

Littering along Clarence Plains Rivulet was identified as an ongoing issue during the community consultation process. Involving the community in ongoing clean ups in the Reserves (as has previously occurred through TACPLACI and other community initiatives) will have the dual effect of cleaning up with minimal costs, boosting community ownership of the Reserves and increasing the chance of long-term behaviour change by removing existing rubbish that may make visitors more likely to drop their own litter. Clean Up Australia Day provides the opportunity for the local community to participate in cleaning up rubbish along Clarence Plains Rivulet and Rokeby Beach, and other volunteer litter collection activities could be organised through interested local community groups.

Recommendation 32: Continue to provide opportunities for the local community to share the responsibility for rubbish clean ups in the Reserves through participation in Clean Up Australia Day and other volunteer litter collection activities.

Under the Tasmanian *Work Health and Safety Act 2012*, 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 who may undertake management activities within the Reserves.

- **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 volunteers need to refer to the relevant Council Safe Work Method Statements (SWMSs) before undertaking works in the Reserves, including cut and paste work weed control work, brushcutting and spreading of mulch. These are available from Council's Natural Areas Volunteer Coordinator (Chris Johns, phone 6217 9715 or email cjohns@ccc.tas.gov.au). All spot spraying should be undertaken by certified operators (eg Council staff, contractors).

18 IMPLEMENTATION PLAN

A map illustrating the location of on ground management activities recommended within the Reserves is provided at Figure 7. This is based on the key recommendations contained within this plan, which are summarised in detail at Appendix 7.

Based on these recommendations, an Implementation Plan with associated performance measures has been developed and is provided at Table 5. It identifies three stages of management activities to be undertaken within the Reserves:

- Priority 1 - immediate (6-12 months) management activities.
- Priority 2 – medium term (1-3 years) management priorities.
- Priority 3 – long term (5 years) management priorities.

The intent of the Implementation Plan is to provide a guide to outcomes that could be achieved within the Reserve by Council, contractors and/or volunteer groups within the period 2016-2020 if sufficient resources are available.

The Implementation Plan provides an indication of the level of funding required to achieve these outcomes.²⁷ While it would be desirable to undertake all the recommended activities, it is acknowledged that this may not be possible due to resource constraints, and implementation will ultimately be guided by what is achievable with resources as they become available. Federal, State and Local Government grants programs may provide an opportunity to obtain resources to implement many of the recommendations contained within this report.

²⁷ Funding details are based on an internal Council document which provides a detailed five year cost estimate for all planned activities. This has been developed primarily for Council budgetary processes and potential grant applications. Specific details may be sought by contacting Council's NRM Planner (Phil Watson, phone 6217 9713 or email pwatson@ccc.tas.gov.au).

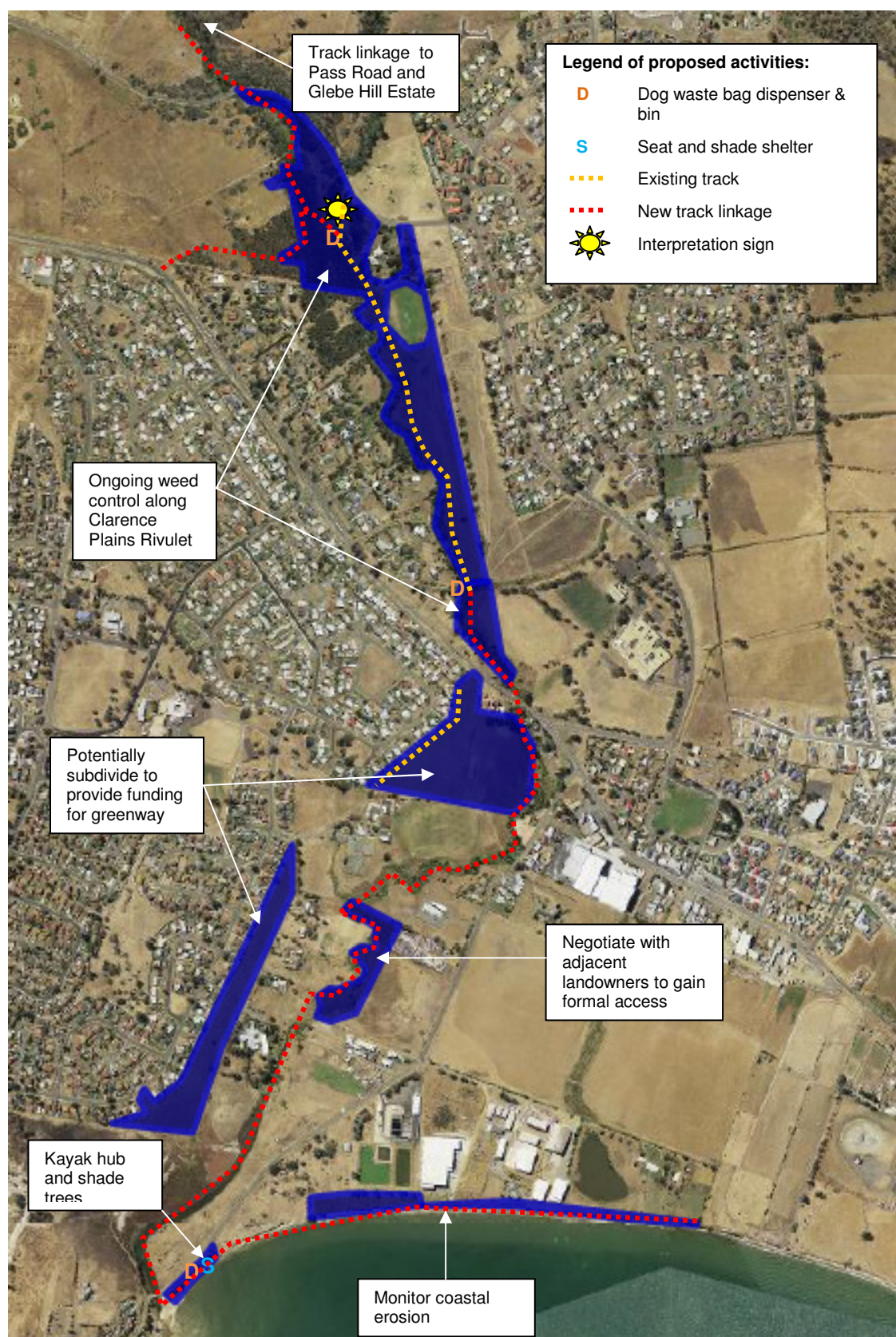


Figure 7: Overview of key proposed on ground management activities in each Reserve (aerial photo sourced from the LIST)

Table 5: Implementation Plan for undertaking recommended management activities within the Reserves.

Priority	Rec. No.	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ²⁸
Landscape and connectivity						
2	R2	Undertake a feasibility study into the development of a Clarence Plains Riparian Greenway (as described in Section 4.6)	N/A	Feasibility study completed and implementation commenced by 2020	Council or contractor	\$20,000
Weed control						
1,2,3	R3	Undertake ongoing annual monitoring throughout all the Reserves for primary infestations of Texas needle grass	Spring – summer for spot spraying	No Texas needle grass recorded in the Reserves	Council, contractor and/or volunteer groups	\$5,000 per annum
1,2,3	R5	Undertake annual sweep and follow-up control of all previously targeted weeds at 45 & 45A Goodwins Road	Spring – summer for spot spraying; year round for other techniques			
1,2,3	R6	Undertake ongoing monitoring and control of species with an inherent ability to regenerate, including serrated tussock, blue periwinkle, cumbungi and blackberry	Spring – summer for spot spraying; year round for other techniques			
3	R7	Undertake follow-up GPS mapping of all weeds	Spring - summer	Weed maps and Council database are updated within 5 years	Council, contractor and/or volunteer groups	\$600

²⁸ Funding estimate is based on total costs required to undertake all recommended activities over the period 2016-17 to 2020-21.

Priority	Rec. No.	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ²⁸
Regeneration and revegetation						
1,2,3	R9	Undertake targeted revegetation within the Reserves to regenerate bare areas following weed control activities, extend the existing biodiversity corridor, improve visual amenity, provide future shade, and expand the local edible landscape (refer Table 1)	Autumn – winter	Revegetation sites established and maintained for 5 years	Council, contractor or volunteers	\$1,500 per annum
Riparian zone management						
2	R10	Continue and enhance the existing water quality monitoring program in Clarence Plains Rivulet	N/A	Performance indicators established	Council, Derwent Estuary Program & volunteers	N/A
Vegetation and fauna monitoring						
1,3	R12	Undertake a follow-up vegetation condition assessment (VCA) of the <i>Eucalyptus ovata</i> forest community at 45A Goodwins Road in 2020.	In season for highly seasonal vegetation (eg annuals)	VCA completed in 2020	Council or contractor	\$3,000 (N/A if performed by Council staff)
1,2,3	R13	Establish photo points at several locations along Clarence Plains Rivulet to facilitate monitoring of annual regeneration growth.	Spring	Photo points established and annual photos taken	Contractor	\$2,000
1,3	R14	Undertake surveys to update the fauna record of the Reserves	N/A	Terrestrial and aquatic fauna surveys and bird surveys completed 2016 & 2020 Hair sampling devices established along Clarence Plains Rivulet	Contractor and/or BirdLife Tasmania and/or University of Tasmania	\$5,000

Priority	Rec. No.	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ²⁸
Reserve entrances						
2	R15	Install Reserve Entrance signs as per Table 1	N/A	Reserve Entrance signs installed as per Table 1	Council	\$600
2	R15	Install pram ramps or curb ramp crossings at appropriate locations along Mockridge Road	N/A	Access point for prams and mobility aids installed at an appropriate location along Mockridge Road	Council	\$1,500
Tracks and trails						
2	R17	Create a sealed pedestrian linkage from 45 Goodwins Road to Glebe Hill Estate	N/A	Pedestrian link established from 45 Goodwins Road to Glebe Hill Estate	Council or contractor	TBC
3	R18	Create a sealed pedestrian linkage from the northern end of 45A Goodwins Road to Rokeby Road,	N/A	Pedestrian link established from the northern end of 45A Goodwins Road to Rokeby Road,	Council or contractor	TBC
1	R19	Formalise the walking track between 10 Grange Road West and Emmanuel Christian School.	N/A	Existing track between 10 Grange Road West and Emmanuel Christian School formalised	Council or contractor	TBC
2	R20	Establish formal access to 60A Droughty Point Road	N/A	Formal access to 60A Droughty Point Road negotiated with an adjacent landowner	Council	N/A
Infrastructure						
2	R21	Install dog waste bag dispensers and bins near the stone bridge near G1, and at Reserve entrances G2 and RB1	N/A	Dog waste bag dispensers and bins installed	Council or contractor	\$1,500
1	R22	Design and install new outdoor seating and a shade shelter at RB1	N/A	Seating and shade shelter installed	Council	\$2,500

Priority	Rec. No.	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ²⁸
2	R23	Promote a preferred kayak launch site at RB1	N/A	RB1 used as a kayak hub	Council	N/A
3	R24	Review the infrastructure requirements of the Reserves in 2020	N/A	Infrastructure review completed in 2020	Council	N/A
Coastal erosion and inundation						
3	R25	Undertake a detailed risk assessment of hazards to the shoreline at Rokeby Beach to inform future adaptation responses	N/A	Assessment completed	Council	N/A
Community participation and awareness						
2	R29	Install an interpretation sign near the stone bridge at the northern end of 45 Goodwins Road	N/A	Interpretation signage installed	Council, contractor or volunteers	\$1,500
1,2,3	R32	Participate in Clean Up Australia Day and other volunteer litter collection activities	N/A	No large build up of litter in Reserves	Council and volunteers	N/A
Implementation plan						
1,2&3	R33	Undertake annual review against all performance measures	N/A	Review of all performance measures completed annually	Council	N/A
3	R34	Undertake a full review of the <i>Clarence Plains Reserves Activity Plan 2016-2020</i>	N/A	<i>Clarence Plains Reserves Activity Plan 2016-2020</i> reviewed within five years	Council and/or contractor	\$10,000

A review of progress against all performance measures should be undertaken annually during the period 2016-2020 to help prioritise available resources.

Recommendation 33: Review progress against all performance measures identified in the Implementation Plan annually.

19 FUTURE PRIORITIES

A review of the *Clarence Plains Reserves Activity Plan 2016-2020* should be undertaken in 2020. The purpose of this review should be to:

- assess progress towards achieving the objectives of the *Clarence Plains Reserves Activity Plan 2016-2020*;
- assess progress against all performance measures;
- analyse photo point data and all completed flora and fauna assessments to determine trends and implications for ongoing vegetation management; and
- determine ongoing management priorities for the Reserves for the next five years.

Recommendation 34: Review the Clarence Plains Reserves Activity Plan 2016-2020 in 2020 to assess progress and determine ongoing management priorities for the Reserves.

APPENDIX 1: CONSERVATION SIGNIFICANCE OF THE RESERVES' NATIVE FLORA AND FAUNA

The native vegetation communities occurring within the Clarence Plains Riparian Reserves are summarised in Table A1.1. Of these, the *Eucalyptus ovata* forest community is listed as a threatened native vegetation community under the Tasmanian *Nature Conservation Act 2005*.

Table A1.1: Conservation status of native vegetation communities occurring within the Reserves.

Community name	TASVEG code	Description	Conservation status
<i>Eucalyptus ovata</i> forest	DOV	Community dominated by <i>Eucalyptus ovata</i> (back gum). Typical subspecies include <i>Acacia dealbata</i> (silver wattle), <i>Bursaria spinosa</i> (prickly box) and <i>Dodonaea viscosa</i> (native hop). Occurs along Clarence Plains Rivulet.	Endangered
<i>Allocasuarina verticillata</i> forest	NAV	Vegetation dominated by <i>Allocasuarina verticillata</i> (sheoak) trees. Occurs at 45A Goodwins Road and 60 Droughty Point Road.	Not threatened

Three threatened species listed under the Tasmanian *Threatened Species Protection Act 1995* (the TSP Act) and/or Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) have been previously recorded within the Clarence Plains Reserves. These are summarised in Table A1.2.

Table A1.2: Flora species of conservation significance recorded within the Reserves.

Flora species	Common name	Conservation status ²⁹	Habitat / Comments
<i>Eucalyptus risdonii</i>	Rison peppermint	Rare	Historical single record at 10 Grange Road East. The accuracy of this record is questionable as it was dated 1910 with an accuracy of ± 2 km.
<i>Juncus amabilis</i>	gentle rush	Rare	Single record at 10 Grange Road East, and two records immediately adjacent to 60A Droughty Point Road.

²⁹ Lower case = TSP Act; UPPER CASE = EPBC Act

Flora species	Common name	Conservation status ²⁹	Habitat / Comments
<i>Vittadinia gracilis</i>	woolly New Holland daisy		Historical single record at 10 Grange Road East. The accuracy of this record is questionable as it was dated 1910 with an accuracy of ± 2 km

The Reserves also contains potential habitat for several threatened fauna species listed under the TSP and/or EPBC Act, including two endangered species. These are summarised in Table A1.3.

Table A1.3: Fauna species of conservation significance for which suitable habitat exists within the Reserves.

Fauna species	Common name	Conservation status ⁹	Habitat / Comments
<i>Lathamus discolor</i>	swift parrot	Endangered ENDANGERED	Nesting habitat is hollows in mature eucalypts with stem diameter >70cm at breast height. Forages in mature <i>Eucalyptus globulus</i> and <i>E. ovata</i> trees. Potential nesting and foraging habitat exists at 45 and 45A Goodwins Road.
<i>Tyto novaehollandiae</i> subsp. <i>castanops</i>	masked owl (Tasmanian)	Endangered VUNLERABLE	Inhabits dry eucalypt forest and woodland with old growth eucalypts containing hollows. Potential nesting habitat exists at 45 and 45A Goodwins Road.
<i>Perameles gunnii</i>	eastern barred bandicoot	VULNERABLE	Inhabits grassy woodlands, native grasslands and mosaics of pasture and shrubby ground cover. Potential nesting and foraging habitat exists within the Clarence Riparian Reserves.

APPENDIX 2: UNANTICIPATED DISCOVERY PLAN

Unanticipated Discovery Plan

For proponents and consultants dealing with Aboriginal Heritage in Tasmania

This paper provides a Plan that should be followed when dealing with unanticipated discoveries of Aboriginal Cultural Heritage such as sites and objects. The plan provides guidance to project personnel so that they may meet their obligations with respect to Aboriginal heritage in accordance with the *Aboriginal Relics Act 1975* and the *Coroners Act 1995*.

The Unanticipated Discovery Plan is in two sections. The first section primarily explains mitigation strategies that should be employed when any Aboriginal Cultural Heritage sites or items are discovered excluding skeletal remains (burials), while the second process deals specifically with skeletal remains (burials).

Discovery of Cultural Heritage Items

- Step 1: Any person who believes they have uncovered Aboriginal Cultural Heritage material should notify all employees or contractors that are working in the immediate area that all earth disturbance works must cease immediately.
- Step 2: A temporary 'no-go' or buffer zone of at least 10m x 10m should be implemented to protect the suspected Aboriginal Cultural Heritage site or relics. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected Aboriginal Cultural Heritage relics have been assessed by a recognised Aboriginal Heritage Officer or Archaeologist.
- Step 3: Aboriginal Heritage Tasmania (AHT) in Hobart (ph 6233 6613) needs to be notified and consulted as soon as possible and informed of the discovery. AHT will then provide further advice in accordance with the *Aboriginal Relics Act 1975*.

Discovery of Skeletal Material

- Step 1: Call the Police immediately. Under no circumstances should the suspected skeletal remains be touched or disturbed. The area must now be considered a crime scene. It is a criminal offence to interfere with a crime scene.
- Step 2: Any person who believes they have uncovered skeletal material should notify all employees or contractors that are working in the immediate area that all earth disturbance works must cease immediately.
- Step 3: A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal remains. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected skeletal remains have been assessed by the Police and or Coroner.
- Step 4: Should the skeletal remains be determined to be of Aboriginal origin, the Coroner will contact the Tasmanian Aboriginal Land and Sea Council (TALSC) to arrange for repatriation of the remains, as per the *Coroners Act 1995*.

Unanticipated Discovery Plan

**Guide to the most common sites of Aboriginal Significance****Stone Artefact Scatters**

Stone artefacts are the tangible evidence found in regard to past Aboriginal lifeways. Stone artefacts indicate areas that were used by Aboriginal People, either for camping, hunting or other activities such as the manufacture of stone tools. Archaeologists can also determine the duration a site may have been occupied, the amount of times that the site may have been occupied, and the number of people that the area may have supported at any given time.

Some stone artefacts are the result of Aboriginal People fracturing or 'flaking' fine-grained rocks to produce sharp cutting or scraping implements. These were then used, for example, for cutting up animals and then scraping the hides. Volcanic rocks such as basalt were flaked and then ground down to form axes for a number of chopping and cutting tasks. The results of such activities can be seen in the archaeological record (i.e. scatters) in the form of modified stones such as cores, retouched flakes, hammerstones and flaked pieces. From these scatters, by understanding site density and frequency patterns, inferences can be made in relation to past Aboriginal lifeways.

Shell Middens

Shell middens by definition are prehistoric refuse pits. They are the leftover waste of resources exploited which formed the basis of Aboriginal diet. Midden sites can range in size from large mounds to small scatters of shell. Middens usually also contain as well as shell, the remains of animals exploited for food as well as artefacts of stone, bone and shell. These sites are usually found near waterways and coastal areas.

Rockshelters

Rockshelters can either be shelters which contain archaeological deposits from living floors or art rock shelters, and may occur in any area of rocky terrain. Sediments on the floor of the rockshelter can contain preserved stratified deposits of archaeological material. Art types found in rockshelters can vary greatly. It can be in the form of painting, stencils of body parts, tools and equipment, or engravings. Style variations in painting can cover animal or human figurines, supernatural beings, and geometric patterns. Engravings can have similar variations as they can depict tools, humans, human parts, animals and birds and their tracks, geometric patterns and supernatural beings. Pecking is also a form of engraving.

Quarries or Stone Procurement Sites

Quarry sites occur where outliers of suitable tool-making stone appear. A quarry can be generally recognised by evidence of human manipulation and extraction of suitable material and the debris left by the processing of the suitable material. Some quarries can cover vast areas with extremely high amounts of lithic discard. Ochre or pigment was also quarried.

Burials

Burials can occur anywhere, though they are generally found close to areas where there was a high population concentration. Burials can occur where there are soft sediments such as sand hills, they can be found in caves and rockshelters and sometimes they can be associated with hollow trees.

APPENDIX 3: SUMMARY OF STAKEHOLDER CONSULTATION

During November – December 2015, identified stakeholders were invited to provide comments relevant to the development of the *Clarence Plains Reserves Activity Plan 2016-2020*.

A public meeting and community ‘walk and talk’ session was facilitated by Council and Tasflora on 15 November 2015 and attended by 12 local residents, including members of Tranmere-Clarence Plains Land and Coastcare Inc (TACPLACI). The purpose of the session was to seek input from on the values and management issues associated with the Reserves. Key issues raised during the walk and talk included:

- cultural and heritage values need to be recognised;
- trail bikes at 45 Goodwins Road are a major problem, although noted that deterrence is difficult;
- Emmanuel Christian School has been active in the past, and new opportunities for engagement should be investigated;
- concern about horses at 10 Grange Road West, and a suggestion that green corridors should be considered in this area;
- suggestion to build a stone arch bridge to the north of the mulberry trees along Clarence Plains Rivulet to link the new Pass Road subdivision (since completed);
- linkage is needed to 60A Droughty Point Road;
- suggestion that rows of revegetation or copses could be planted through 36 Duntroon Drive; and
- Rokeby Beach coastline is receding, and sea grasses are no longer present.

A further meeting with members of the One Community Together project³⁰ was held on 8 April 2016 to discuss the concept of a Clarence Plains Riparian Greenway, for which there was general support. Other key issues raised included:

- strong opposition to a tunnel under Rokeby Road to facilitate pedestrian access;
- potential for opportunities to link community gardens to the existing edible landscape at 45 Goodwins Road;
- support for community group participation in Clean up Australia Day or other clean up activities at Rokeby Beach;

³⁰ Further information about this project is available at:
https://www.facebook.com/onecommunitytogether/timeline?ref=page_internal

- consideration needs to be given to the proposed Clarence Plains Rivulet track surface so all the community can use it, noting that side tracks will also need upgrading to facilitate access;
- suggestion to rename Clarence Plains Rivulet to an aboriginal or historical name; and
- is water quality improving or degrading, based on historical data?

A feedback form seeking input to the *Clarence Plains Reserves Activity Plan 2016-2020* was also mailed to local residents and stakeholders. A written response was received from one stakeholder, who noted that Goodwins Road has inadequate pedestrian access, and that a pedestrian pavement is needed to connect users to Pass Road and Rokeby Road to provide a round trip for walkers and cyclists. This issue is specifically addressed in Section 12.

The draft *Clarence Plains Reserves Activity Plan 2016-2020* was released for community consultation in June - July 2016. A Clarence Plains Reserves Activity Plan Report Card was developed as a key tool in encouraging stakeholder feedback on the draft plan and was mailed out to residents and other interested stakeholders. Fifteen submissions on the draft plan were received during the consultation period. There was general support for the draft plan, including the concept of a Clarence Plains Riparian Greenway. An evaluation of specific issues raised in these submissions is provided at Table A3.1.

Where possible, all relevant community feedback has been considered in the development of the *Clarence Plains Reserves Activity Plan 2016-2020*. However some issues identified during the consultation process are beyond the scope of this plan or pertain to management issues outside the Reserves. These issues have been noted by Council and will be addressed through other processes where feasible.

Table A3.1: Summary of written responses received on the draft *Clarence Plains Reserves Activity Plan 2016-2020*.

Issue	Comment
Site values (Section 4)	
1 The plan should recognise European settlement in the Clarence Plains area	No change to plan recommended. Section 4.3.2 provides an overview of European heritage relevant to the Reserves.
2 Omitted from the plan was any mention of the Saltmarsh at the mouth of the Clarence Plains Rivulet...It is vital to protect this important eco-system... the pressures on this special patch are increasing and overwhelming, and there is no protective vegetation buffer for the Saltmarsh.	The saltmarsh is in private ownership, hence it is outside the scope of the Plan. In the event that the saltmarsh is acquired by Council, an addendum to this plan can be developed to ensure best practise management. The RAP will be amended to include a very brief section on the saltmarsh and including a recommendation which promotes the importance of Council continuing to pursue the purchase or management rights to the saltmarsh.
Regeneration and revegetation (Section 7)	
3 We encourage the planting of appropriate edible native plants along the route to align with community desires to expand the local edible landscape	Table 1 will include a recommendation to identify and plant appropriate edible native species, together with associated interpretation signage.
Riparian zone management (Section 8)	
4 Water quality is imperative to the plan (that means removing all cars in the creek polluting all the waterways connected to it)	No change to plan recommended. Section 16 addresses general rubbish removal in Clarence Plains Rivulet.
5 What is the water quality of the rivulet and is the watercress growing in it fit for human consumption?	No change to plan recommended. The plan recommends ongoing water quality monitoring in the creek. It is beyond the scope of the plan to report on current water quality given that this may change over the five years covered by the plan.
Fauna habitat management (Section 9)	
6 Work needs to be done to protect and encourage the birds (notes that finches, scarlet robins and blue wrens have been observed)	No change to plan recommended. Sections 9 and 10 make recommendations to monitor and protect these values.

Issue	Comment
Reserve entrances (Section 11)	
7 Need to consider access to the Clarendon Vale Rivulet walking track for people who rely on mobility aids (eg kerb side gutters on the high school side of Mockridge Road are difficult for wheelchair or mobility scooters due to the height of the gutters)	The plan will be amended to include a recommendation to install pram ramps or curb ramp crossings in this area.
8 Will upgrading the walking track between 10 Grange Road West and Emmanuel Christian School impact the school?	No change to plan recommended. The intent is to gravel the surface and repair existing fences as well as potentially selectively revegetate in appropriate locations as a possible Council supported school land care- style activity. The upgrade will not directly affect the school.
9 Will establishing formal access to 60A Droughty Point Road affect Emmanuel Christian School?	No change to plan recommended. This recommendation would involve a staged project based on initial discussions with identified property landowners in Chipmans Road or Droughty Point Road to facilitate formal access. Only with the agreement of the property owner would a right of way be delineated. This may provide an important future link to the proposed Clarence Plains Rivulet trail from Glebe Hill to the Droughty Point Beach
10 Emmanuel Christian School has a boundary on the Clarence Plains Rivulet... has there been any consideration of the state of the rivulet or public access to that area? Is the upgrade of the walking track likely to affect Emmanuel Christian School at all (eg, boundary fencing)?	No change to plan recommended. Section 4.6 describes the Clarence Plains Riparian Greenway concept which will involve a major improvement of a few degraded sections of the rivulet, including that mentioned in the feedback comment. However, any development in this area will be considered as part of the proposed feasibility study, which will necessarily include consultation with relevant property owners.
11 Overhead access [across Rokeby Road] to Droughty Point is preferred by the community	No change to plan recommended. Section 4.6 notes that the preferred option for pedestrian access across Rokeby Road will be examined via the proposed feasibility study into a Clarence Plains Riparian Greenway.

Issue	Comment
12 An underpass to cross Rokeby Road is not desirable but if it is pursued it must address the safety issues that have arisen with other underpasses in the local area	No change to plan recommended. Section 4.6 notes that the preferred option for pedestrian access across Rokeby Road will be examined via the proposed feasibility study into a Clarence Plains Riparian Greenway.
13 Would like to see a pathway much more improved than the current one to Grange Road (path is uneven)	No change to plan recommended. This will be addressed via the proposed feasibility study into a Clarence Plains Riparian Greenway.
14 Would like a footpath of some kind to from Rokeby Beach along the length of the rivulet to Grange Road.	No change to plan recommended. This will be addressed via the proposed feasibility study into a Clarence Plains Riparian Greenway.
15 The risk of trail bike use of any upgraded track / path must be addressed in the design eg. in the use of gates periodically along the path (eg. where the path narrows)	No change to plan recommended. The ongoing issue of trail bikes has been noted by Council via the community consultation process, and will be addressed along the proposed rivulet path via the proposed feasibility study into a Clarence Plains Riparian Greenway.
16 We see value in exploring access corridors that are safe and visible that cross the South Arm Highway near the turn off to Mockridge Road and again further up towards Howrah to allow access to residents on the western side of the highway.	No change to plan recommended. Access corridors will be addressed via the proposed feasibility study into a Clarence Plains Riparian Greenway.
Infrastructure (Section 13)	
17 Toilet facilities would be appreciated at Rokeby Beach	No change to plan recommended. This suggestion should be considered in the context of the potential increase in future use of the beach arising from the proposed Clarence Plains Riparian Greenway. With this in mind, this proposal will be considered during the next review of infrastructure requirements in the Clarence Plains Region in 2020.
18 We would encourage the construction of seats along the trail with space set aside for future art instalments that are in keeping with the values of the area	No change to plan recommended. This will be addressed via the proposed feasibility study into a Clarence Plains Riparian Greenway.



Issue	Comment
Community participation and awareness (Section 16)	
19 All trees and plants along the rivulet should be named for public record and the same for all the wildlife there	While it naming all native species along the rivulet would be resource intensive and potentially subject to vandalism, section 16 will be amended to note that prominent local native flora should be identified on the proposed interpretation signage.
20 Improve signage for historic trail	No change to plan recommended. Section 16 recommends that an interpretation sign be installed that expands on the historic heritage information that is already provided by the existing Old Rokeby Historic trail signage.
21 Rokeby High School views the reserve as a natural and local outdoor educational facility in-which we would like to work more closely, in terms of providing quality education (eg water sampling stations, biome study points, opportunities to join in on planting and bush tucker or fitness trails, outdoor education and science initiatives at the beach)	The plan will be amended to note Rokeby High School's historical and future interest in participating in Reserve management activities.
22 Suggest that lighting and art in this space [the proposed Greenway] is given a priority to promote safe use and also serve as a beacon for the values attracted to urban development for all this who live and drive past the space.	No change to plan recommended. This will be addressed via the proposed feasibility study into a Clarence Plains Riparian Greenway.
Other management issues	
23 We encourage Clarence City Council to commit adequate resources to implement the recommendations	No change to plan recommended. Section 16 notes that due to resource constraints, implementation will ultimately be guided by what is achievable with resources as they become available.
24 The DoE has recently made significant contributions to the physical presentation of the spaces adjacent to the reserves and we encourage development and funding that assists quality interagency brands help to collaborate their efforts to create a positive and vibrant destination to live and engage in healthy lifestyles.	No change to plan recommended. It is envisaged that the proposed Clarence Plains Riparian Greenway will strongly complement these activities.

Issue	Comment
<p>25 The people who own properties along lower Duntroon Drive should have the right to purchase a portion of land on the reserve that extends from their own property...the reserve in question (36 Duntroon) generally has trail bike riders on it all the time and this would help prevent this as well ... Money made from the sale could be used to do a better job of the rest of the reserves and their upkeep.</p>	<p>No change to plan recommended. This will be addressed via the proposed feasibility study into a Clarence Plains Riparian Greenway.</p>
<p>26 It would be a grave mistake to sell off Council owned land at 36 Duntroon Drive and 10 Grange Road West to fund a 'feasibility study'. The close proximity of these land parcels to the Rivulet environs should make them a <i>vital asset</i> to the plan... we strongly urge you to instead consider revegetating these areas as inclusion in the "Greenway" plan.</p>	<p>No change to plan recommended. The feasibility study will be a stand-alone study and funded through general revenue, independent of whatever mechanism may be available to fund the development of the Greenway. Although the Plan does mention that one of many options for funding the development of the Greenway maybe the sale of land, there are many other funding mechanisms to explore (in a consultative way) based on the outcomes of the Feasibility Study.</p>
<p>27 We would strongly urge you to consider ALL land within 100-200m of the Clarence Plains Rivulet, Saltmarsh, and Rokeby Beach, to be considered as an ongoing long-term "revegetation zone" as the historic land clearing and inappropriate development/usage has greatly contributed to the significant environmental pressures these areas are currently suffering</p>	<p>No change to plan recommended. The proposed feasibility study into a Clarence Plains Riparian Greenway will consider the future potential for revegetation zones along the length of the rivulet.</p>




Issue	Comment
28 Several written and verbal submissions made comment regarding trail bikes along 36 Duntroon Drive	While this issue is better addressed through Strategies developed by the broader 'One Together Community' Program, the plan will be updated to note trail bike issues on 36 Duntroon Drive as a specific example of trail bikes in the area covered by the plan. The plan will be amended to note that Council will work in partnership with Tasmania Police and local community organisations to develop strategies (including barriers) to manage illegal trail bike activities in the reserves. A specific recommendation will be included for the proposed feasibility study into a Clarence Plains Riparian Greenway to consider trail bike mitigation options within its scope.
29 60a Droughty Point Road appears to have no fencing in place, and we have witnessed a number of times, neighbouring horses running and roaming freely right up to the Rivulet's edge. Council should consider an education program to make property owners aware of the environmental pressures on the Rivulet that these animals create, and the possibility of supporting a small revegetation program for the riparian zone of each grazing property backing onto the Rivulet.	The plan will be updated to note free ranging horses as an issue in this area, and the need for this to be addressed via the proposed feasibility study into a Clarence Plains Riparian Greenway
30 Trail bikes continue to be a menace and do so much damage. Need strategies to exclude trail bikes from the area totally.	Refer response to issue 28.
31 General maintenance in the area including collecting rubbish from the Rivulet and surrounding areas	No change to plan recommended. Section 16 details the proposed community approach to rubbish collection in the reserves.
32 If appropriate infrastructure is put in place it opens up a pathway for the Clarendon Vale Football Oval to be increasingly patronised with coordinated sport as an extension of the Rokeby High School's development	No change to plan recommended.




Issue	Comment
Other issues outside the scope of the plan	
33 Maintain the historic reserve/seating area in Droughty Point Road	No change to plan recommended. The area mentioned is managed by Parks and Wildlife Service, and outside the scope of this plan. However Council does actively support the local Landcare Group when they have a working bee on the site
34 Droughty Point Road requires upgrading (footpath, better access turning towards Lauderdale)	No change to plan recommended. This feedback should be forwarded to the relevant Council staff for consideration.
35 Parking needs a separate plan but still needs to be considered and we see an ideal location for this in the vicinity of the entrance to Mockridge Road	No change to plan recommended. This feedback should be forwarded to the relevant Council staff for consideration.
36 We would welcome funding to help contribute funding to an area directly adjacent to the reserve on school grounds that could be used as a "Farmers Market"	No change to plan recommended. This feedback should be forwarded to the relevant Council staff for consideration.
37 Multistorey car parks should be provided instead of hectares of good and valuable land covered in asphalt (eg the quay car park and Winkleigh Place)	No change to plan recommended. This feedback should be forwarded to the relevant Council staff for consideration.




APPENDIX 4: WEED SPECIES PRESENT AND RECOMMENDED CONTROL TECHNIQUES

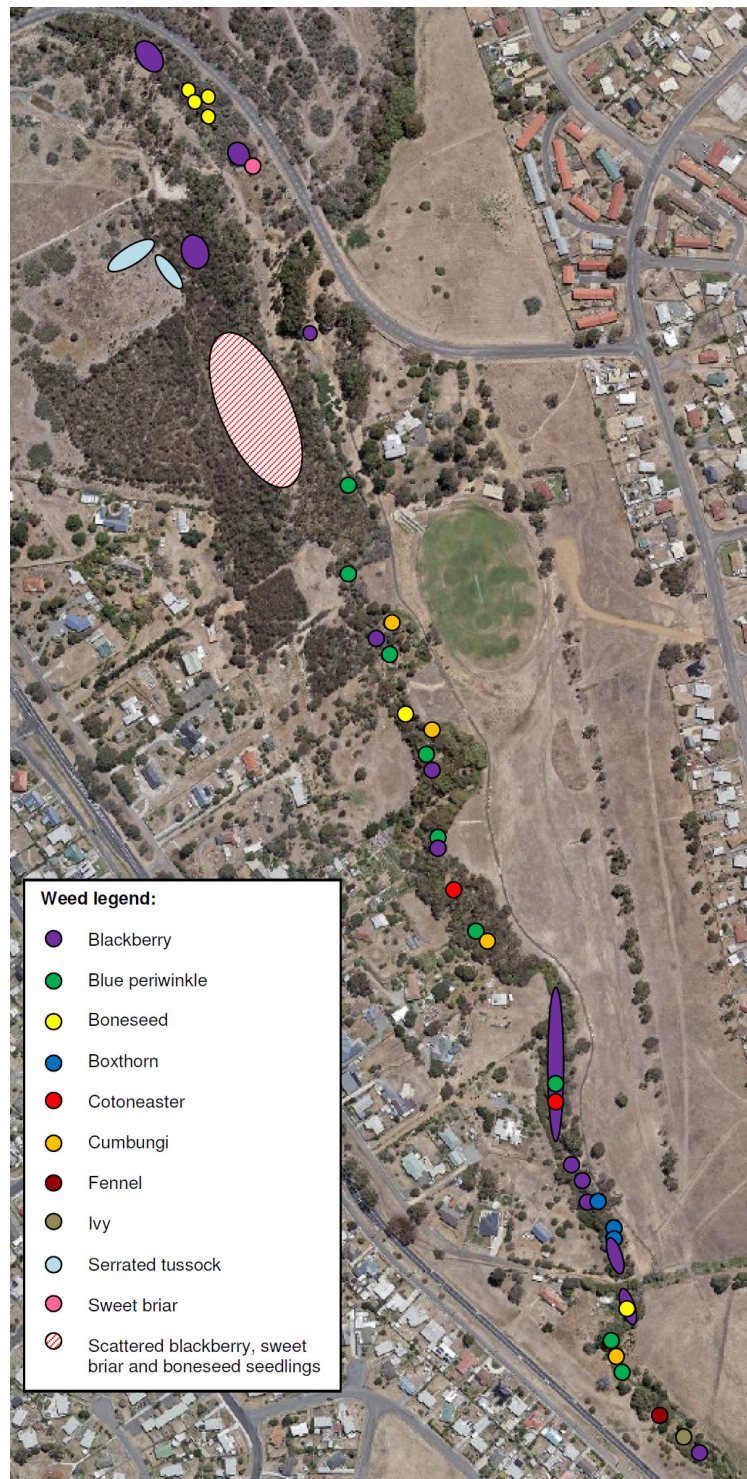
Common name	Species	Status ³¹	Picture	Recommended control technique
<u>DECLARED WEEDS</u>				
African boxthorn	<i>Lycium ferocissimum</i>	Declared WONS		Cut and paste or spot spray. Care should be taken to avoid the spines on this species as they can produce painful puncture wounds and/or an allergic reaction.
Blackberry	<i>Rubus fruticosus</i> aggregate	Declared WONS		Large stands - spot spray larger using an appropriate herbicide (as per the DPIPWE Control Guide) in non-fruiting periods Isolated patches - spot spray or cut and paste

³¹ Declared = *declared under the Tasmanian Weed Management Act 1999*; WONS = Weed of National Significance.

Common name	Species	Status ³¹	Picture	Recommended control technique
Boneseed	<i>Chrysanthemoides monilifera</i>	Declared WONS		Hand pull seedlings. Cut and paste larger plants. Fruit should be bagged and disposed of responsibly.
Fennel	<i>Foeniculum vulgare</i>	Declared		Cut and paste or spot spray.
Serrated tussock	<i>Nassella trichotoma</i>	Declared WONS		Spot spray larger using an appropriate herbicide (as per the DPIPWE Control Guide).

Common name	Species	Status ³¹	Picture	Recommended control technique
<u>OTHER ENVIRONMENTAL WEEDS</u>				
Blue periwinkle	<i>Vinca major</i>			Brushcut followed by spot spraying. Repeated follow-up spot spraying required.
Cotoneaster	<i>Cotoneaster</i> sp.			Hand pull seedlings. Cut and paste larger plants.
Cumbungi	<i>Typha</i> sp.	-		Hand pull and remove all the rhizome.

Common name	Species	Status ³¹	Picture	Recommended control technique
English ivy	<i>Hedera helix</i>			Cut and paste.
Hawthorn	<i>Crataegus monogyna</i>			Hand pull or cut and paste small plants and seedlings. Mature specimens along Clarence Plains Rivulet should be retained due to their heritage value.
Sweet briar	<i>Rosa rubiginosa</i>			Cut and paste or spot spray

APPENDIX 5: LOCATION OF WEEDS AT 45 AND 45A GOODWINS ROAD

Note: Scattered thistles and hawthorn seedlings occur at various locations along the rivulet and have not been individually mapped. Mature hawthorn, weeping willow and fruit trees have not been mapped as weeds due to their heritage value.

APPENDIX 6: VEGETATION CONDITION ASSESSMENT SUMMARY REPORT FOR GOODWINS ROAD

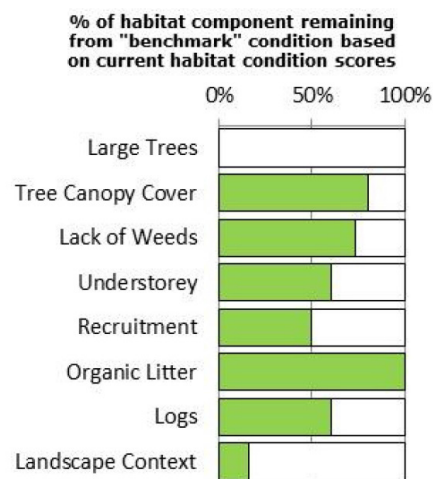
SITE DETAILS

Location: **Goodwins Road** Zone no.: **Zone 1**
 Monitoring Point: Easting: 535765mE Northing: 5251295mN
 Date of assessment: 23 Apr 2016 Assessor(s): Kerri Spicer
 Vegetation type: ***Eucalyptus ovata* forest (DOV)**

VEGETATION CONDITION ASSESSMENT SUMMARY

[taken from the field-collected data on the Vegetation Condition Assessment form – see scanned field sheets]

Element	Component (possible score)	Score 2015
Site condition	Large trees (10)	0
	Tree canopy cover (5)	4
	Lack of weeds (15)	11
	Understorey (25)	15
	Recruitment (10)	5
	Organic litter (5)	5
	Logs (5)	3
Sub-total Site Condition (75)		43
Landscape context	Patch size (10)	2
	Neighbourhood (10)	1
	Distance to core area (5)	1
Sub-total Landscape Context (25)		4
TOTAL (100)		47

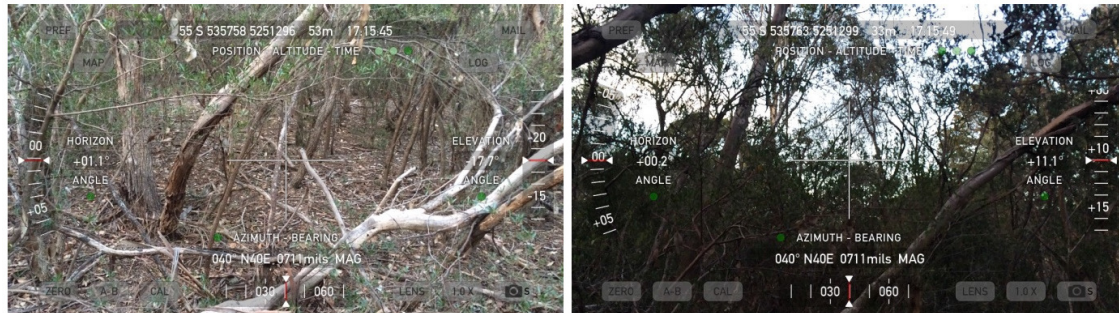
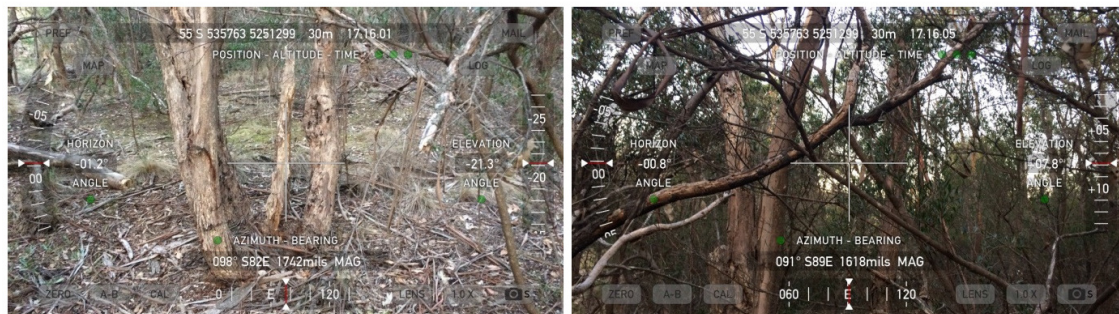
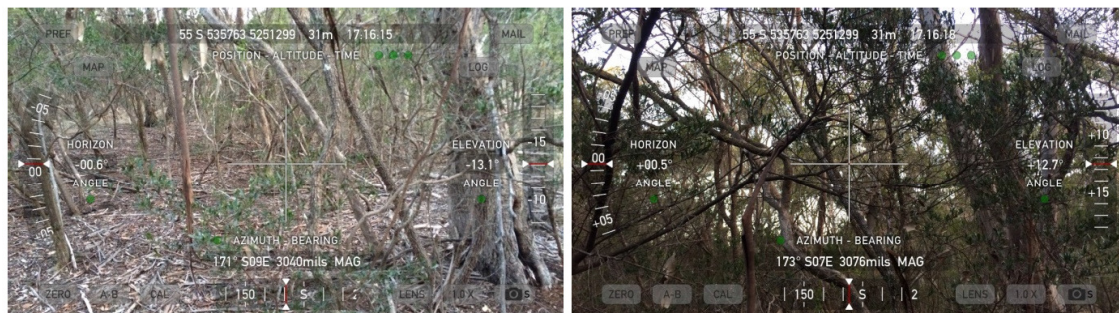
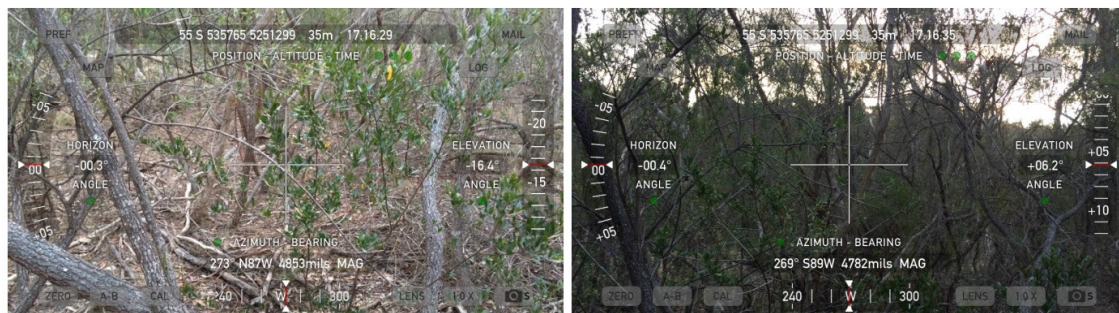


This zone is restricted to the floodplain and reflects a small remnant patch of *E. ovata* forest. As you move off the floodplain the *E. ovata* forest grades into *Allocasuarina verticillata* forest. The forest is in an average condition, reflecting its disturbance history and due to it being a small remnant in a mostly cleared landscape. No large trees were present as the forest consists of regrowth *E. ovata* trees. A few scattered weeds (1% cover) were found through the zone. The understorey consists of a thick tree layer (shrubs > 2 metres) over a relatively open lower understorey which is grassy where the canopy is more open. Very little regeneration was present but given this forest type regenerates by episodic events this is not currently of concern. A good canopy cover of *E. ovata* (30% cover vs 40% benchmark cover) is present in reasonable health.

PHOTO-POINT

Easting: 535765mE Northing: 5251295mN

Images taken at eye-level and angled upwards (approx. 45°) at cardinal compass points of north, east, south and west.

NORTH**EAST****SOUTH****WEST**

APPENDIX 7: SUMMARY OF ON GROUND MANAGEMENT RECOMMENDATIONS

Site values	
R1	Continue to pursue the purchase of (or acquisition of management rights to) the Clarence Plains Rivulet saltmarsh.
Landscape setting and connectivity	
R2	Undertake a feasibility study into the development of a Clarence Plains Riparian Greenway, incorporating a continuous biodiversity corridor and walking track along Clarence Plains Rivulet between Goodwins Road and Rokeby Beach.
Weed control	
R3	Undertake ongoing annual monitoring throughout all the Reserves for primary infestations of Texas needle grass.
R4	Undertake control of exotic grasses and broadleaf weeds only in revegetation areas and where necessary as part of a general Reserve maintenance program.
R5	Undertake an annual sweep and follow-up control of all previously targeted weeds at 45 & 45A Goodwins Road.
R6	Undertake ongoing monitoring and control of species with an inherent ability to regenerate, including serrated tussock, blue periwinkle, cumbungi and blackberry.
R7	Undertake follow-up GPS mapping of all weeds in the Reserve after five years to monitor progress and inform future weed control priorities
Regeneration and revegetation	
R8	New revegetation and landscaping activities should not be committed to unless sufficient resources are available to undertake ongoing regular maintenance of existing revegetation areas.
R9	Undertake targeted revegetation within the Reserves to regenerate bare areas following weed control activities, extend the existing biodiversity corridor, improve visual amenity, provide future shade, and expand the local edible landscape.
Riparian zone management	
R10	Continue and enhance the existing water quality monitoring program in Clarence Plains Rivulet in conjunction with the development of the Clarence Plains Rivulet Stormwater System Management Plan.
Fauna habitat monitoring	
R11	Consider fauna habitat requirements when planning future bushfire management activities in the Reserves.
Vegetation and fauna monitoring	
R12	Undertake a follow-up vegetation condition assessment (VCA) of the <i>Eucalyptus ovata</i> forest community at 45A Goodwins Road in 2020.
R13	Establish photo points at several locations along Clarence Plains Rivulet to facilitate monitoring of annual regeneration growth.
R14	Undertake fauna surveys and establish a series of hair sampling devices along Clarence Plains Rivulet in 2016 and 2020 to assess species diversity and further inform on ground management activities.
R15	Undertake an analysis of all photo points, VCAs and fauna surveys in 2020 to determine trends and inform future management activities.

Reserve Entrances	
R16	Improve Reserve entrances by installing additional signage, improving access and undertaking landscaping activities as recommended in Table 2.
Tracks and trails	
R17	Create a sealed pedestrian linkage from 45 Goodwins Road to Glebe Hill Estate.
R18	Create a sealed pedestrian linkage from the northern end of 45A Goodwins Road to Rokeby Road, enabling a round trip via Grange Road East
R19	Enhance the walking track between 10 Grange Road West and Emmanuel Christian School.
R20	Establish formal access to 60A Droughty Point Road.
Infrastructure	
R21	Install dog waste bag dispensers and bins near the stone bridge near G1, and at Reserve entrances G2 and RB1.
R22	Design and install new outdoor seating and a shade shelter at RB1 using Crime Prevention Through Environmental Design principles.
R23	Promote a preferred kayak launch site at RB1.
R24	Undertake a review of the infrastructure requirements of the Reserves in 2020
Coastal erosion and inundation	
R25	The Tasmanian Coastal Works Manual should be consulted prior to undertaking any on ground activities
R26	Undertake a detailed risk assessment of hazards to the shoreline at Rokeby Beach to inform future adaptation responses.
Other management issues	
R27	Consider mitigation options for illegal trail bike access and free ranging horses within the scope of the Clarence Plains Riparian Greenway feasibility study.
Community participation and awareness	
R28	Consider, and fund as necessary, community education to facilitate behavioural change and encourage ownership and appreciation of the values of the Reserves
R29	Install an interpretation sign near the stone bridge at the northern end of 45 Goodwins to provide directional information and educate users about the natural and cultural values of Clarence Plains Rivulet.
R30	Actively engage with TACPLACI, Green Army and Work for the Dole teams to seek support Reserve management activities.
R31	Support opportunities for local schools, landcare groups and other community groups to participate in the long term development of the proposed Clarence Plains Riparian Greenway.
R32	Continue to provide opportunities for the local community to share the responsibility for rubbish clean ups in the Reserves through participation in Clean Up Australia Day and other volunteer litter collection activities.
Implementation Plan	
R33	Review progress against all performance measures identified in the Implementation Plan annually
R34	Review the <i>Clarence Plains Reserves Activity Plan 2016-2020</i> in 2020 to assess progress and determine ongoing management priorities for the Reserves

