



Draft Reserve Activity Plan 2020 – 2030

SINGLE HILL RESERVE

ADVICE PREPARED BY
ENVIRO-DYNAMICS
FOR THE
CLARENCE CITY COUNCIL
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Single Hill Bushland Reserve Activity Plan 2020-2030

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Executive summary

The Single Hill Bushland Reserve Activity Plan (RAP) outlines the management requirements for the natural, recreational and cultural values of the Single Hill Bushland Reserve, Acton Creek riparian area and Nowra Bushland Reserve (Figure 1).

The RAP has been developed following on-ground site surveys, community and stakeholder consultation, and reference to scientific and specialised consultant reports that relate to the area and surrounding environment. The RAP provides prioritised on-ground actions and focuses on achievable actions that can be maintained in the long term.

Nine key recommendations are provided in the Single Hill and Nowra Reserves Report Card (Appendix 2), which was distributed to the local community to seek feedback on the draft Single Hill Bushland Reserve Activity Plan. The recommendations are not listed in order of significance.

1. Construct narrow trail from Cahill Place junction to summit of Single Hill.
2. Formalise mountain bike tracks within the Nowra Reserve area.
3. Construct walking track from Seven Mile Beach carpark access to summit with links to coastal track.
4. Fence off trial regeneration area within the blue gum woodland on top of hill.
5. Prune large shrubs at launching sites allow for safe paragliding and hang gliding.
6. Undertake revegetation in degraded woodland and open areas.
7. Control of serrated tussock and african boxthorn in Single Hill Reserve.
8. Develop a Single Hill Bushland Fire Hazard Management Plan.
9. Install signage at entrances for 'Dogs on lead' and picking up dog poo.

The further 21 management recommendations are provided in the RAP.

Contents

1	Introduction	1
1.1	Background	1
1.2	Aims and process of the Reserve Activity Plan	3
2	Community and stakeholder consultation	4
2.1	Community-identified opportunities and issues	4
3	Natural values	6
3.1	Vegetation communities	6
3.2	Flora values	7
3.3	Fauna values	11
3.4	Aboriginal heritage	13
3.5	European heritage	13
3.6	Recreational values	13
3.7	Landscape Setting and Connectivity	14
4	Management issues and recommendations	16
4.1	Vegetation management	16
4.2	Weed management	22
4.3	Domestic animal management	25
4.4	Track development	26
4.5	Hang gliding and paragliding	34
4.6	Entrance upgrades, signage and infrastructure	37
4.7	Community Involvement	42
5	Review of Reserve Activity Plan	43
6	Implementation plan	44
7	References	48
	Appendix 1 - Description of Vegetation Communities occurring in the Reserves	49
	Appendix 2 - Vegetation Condition Assessments	52
	Appendix 3 - Single Hill Bushland Reserve Report Card	55
	Appendix 4 - Single Hill Track Network Plan	56
	Appendix 5 - Results of community consultation	57
	Appendix 6 - Plant list for Single Hill Bushland Reserve	73
	Appendix 6 - Bird list for Single Hill Bushland Reserve	82
	Appendix 7 - Weed Descriptions	83
	Appendix 8 – Code of Conduct guidelines	86

1 Introduction

1.1 Background

The Single Hill Bushland Reserve is located between Seven Mile Beach and Roches Beach approximately 15km to the east of Hobart (Figure 1). It consists of several connected parcels of land which together form a large linear reserve from Acton Creek in the north, over Single Hill and south to Kirra Road and Nowra Roads (Figure 1).

The Single Hill Reserve (approximately 39ha) was recently transferred (November 2019) to Council as part of the broader Single Hill Development. It adjoins the Nowra Bushland Reserve (approximately 16ha) and associated linear reserves which form linkages through to Axion Way, Nowra Road and Kirra Road and the broader Tangara Trail Network (Figure 1).

The Single Hill Bushland Reserve, Nowra Bushland Reserve and linear reserves are managed by Clarence City Council (CCC).

The reserves contain a mixture of remnant forest and woodland vegetation, native grasslands and large areas of degraded agricultural land. The western and southern boundary of the reserve borders rural living blocks; the eastern side borders larger rural lots and the northern end borders urban lots in the Seven Mile Beach township.

The reserve network provides opportunities for the community to access remnant bushland area, hilltops with spectacular views over the southeast and coastal trails and beaches. The reserve links to the popular Tangara Trail network that extends from Cambridge and Five Mile Beach in the north to South Arm in the south. The Tangara trail is a multi-use track that provides opportunities for walkers, mountain bikers, horse riders and dog walkers to utilise a mix of landscape settings, whilst connecting to surrounding tracks that provide access to the water for bird watching, swimming and boating.

The natural values of the reserve network and the recreational opportunities that it provides are highly valued by the local community and are identified as key reasons for living in the community.

The format of this RAP follows a template used by Clarence City Council for other reserves within the municipality. It includes an outline of the natural, recreational and cultural values of the reserved land and outlines the management activities to maintain and enhance these values. The management objective and priorities are based strongly on the outcomes of community consultation.

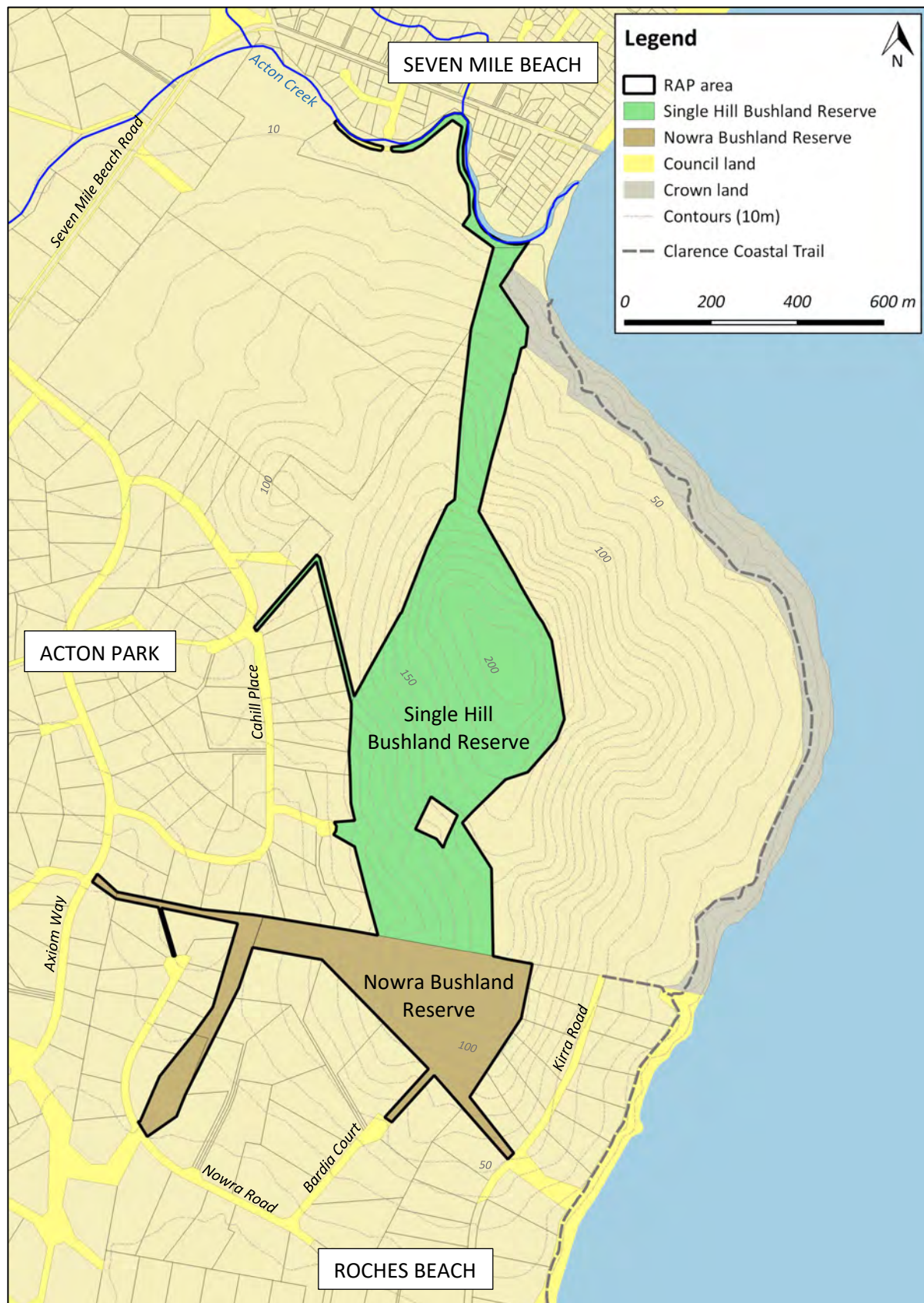


Figure 1. Location plan – Single Hill Reserve, Nowra Bushland Reserve and linear reserves included in the RAP.

1.2 Aims and process of the Reserve Activity Plan

The aims of the Single Hill Bushland Reserve Activity Plan 2020–30 are to:

- ensure the Reserve is sustainably managed to preserve and enhance its natural, cultural and social values
- identify priority management activities to be undertaken within the Reserve by the Council and/or volunteers and contactors as resources become available during 2020–30
- encourage community engagement through raising awareness of the Reserve's values and encouraging activities that minimise threats to these values.

The aims of the RAP will be achieved through:

- undertaking an initial assessment of the natural, recreational and cultural values and the existing or potential management issues
- undertaking a two-stage community consultation process to capture local knowledge and interests, and providing opportunities to raise and prioritise issues (this process builds knowledge of the reserve and management concerns while actively involving the community in management planning)
- reviewing existing documents and specialised reports regarding issues such as weed control, erosion and vegetation condition that relate to the Single Hill area
- reviewing the implementation of the Weed Management Plan for Single Hill (JMG 2012), Weed Management Plan Implementation (Wild CALM 2019) and Single Hill Public Open Spaces (POS) Weed Management Plan Implementation Report (CCC 2020) to determine works undertaken and those still to be carried out
- review the recommendations contained within the Acton Trails and Reserves Reserve Activity Plan 2018 – 2022 (Tasflora 2018) as they relate to the Nowra Bushland Reserve and the Single Hill Reserve
- providing priority management actions for the 2020–30 RAP based on the community consultation, review of existing plans and the current understanding of the natural and social values and any threats to those values.

2 Community and stakeholder consultation

Community consultation plays an integral role in the development of RAPs. It provides an opportunity to seek input into the values and management issues that are important to the community. This input enables management priorities to be established that the community has ownership of and leads to achievable actions and outcomes.

The following community consultation has been undertaken as part of the planning process:

- A community ‘walk and talk’ was held in the Reserve on 26th July 2020, with 55 residents attending. This event was advertised in local newspapers, online, and letters were posted to residents. Community responses were recorded (16) at this event.
- Feedback forms were posted and an online survey (via the ‘Your Say’ forum) was made available to residents. The ‘your say’ forum received 363 visits with 75 responses^{1,2} while 6 written feedback forms were received.
- Further responses were provided via email to the CCC and the consultant (7 responses).
- Key stakeholders and user groups were consulted regarding the ongoing management of the reserve’s recreational and natural values. The following stakeholder/user groups provided feedback:
 - Seven Mile Beach Coastcare Group
 - Acton Park Landcare Group
 - Tangara Recreational Trails Inc. (TRT)
 - Triathlon South
 - Hobart Airport (in regard to airspace restrictions)
 - Tasmanian Hang gliding and Paragliding Association (THPA)
 - BirdLife Australia – Mike Newman
 - BBW Walking Club – Michael Hawkins
 - Clarence City Council NRM staff

Following the initial community consultation process, further consultation will be sought following the release of the Draft Single Hill Bushland Reserve Activity Plan. A Reserve Report Card (Appendix 3) will be distributed to the community to facilitate further input on key draft recommendations. The results of this consultation will be incorporated into the Final Reserve Activity Plan for approval by Council.

2.1 Community-identified opportunities and issues

The following is a summary of the main issues raised during the community consultation process and the number of representations received for each category. Many of the respondents provided feedback on multiple issues and hence the total number of responses

¹ Note: several responses provided feedback on multiple issues

² Included 19 responses where no specific comment was made or the response of ‘not enough information provided to comment’ were provided

received on all issues exceeds the number of respondents (114). A more detailed summary of feedback gathered during the community consultation phase is provided in Appendix 5.

The main opportunities and management issues identified include the following (# responses for each action/issue):

- Support for developing of new tracks and maintenance of existing tracks within the reserves to improve access, provide connectivity, and increase recreational opportunities and improve safety (# responses – 54)
- Protection and enhancement of the natural values of the reserve (#29)
- Safety concerns with multi use trails (#10)
- Protection of the visual amenity of hillside from Seven Mile Beach (#3)
- Interpretive signage and clear marking of tracks (#9)
- Dog management within the reserve (#7)
- Erosion risks on steep slopes (#3)
- Management of weeds (#4)

Additional opportunities/management issues raised include:

- No development of reserve including further residential and commercial development throughout the area (#9)
- Installation of seating and viewing platforms (#6)
- Impacts of mountain bikes on reserve values (#4)
- Existing infrastructure (i.e. old fences) posing a risk to public safety (#1).
- Limit vehicle access/parking constraints (#4)
- Formalising launch sites for hang gliding and paragliding (#1)

Whilst all relevant community feedback has been considered in the development of the Single Hill Bushland Reserve Activity Plan 2020-2030, some issues identified during the consultation process are beyond the scope of this plan or pertain to management issues outside the areas covered by the plan. These issues have been noted by Council and will be addressed through other processes where feasible.

3 Natural values

The natural values of the reserves that are included in the RAP have been assessed through several surveys. A detailed assessment of the Single Hill Reserve was undertaken in 2007 as part of the large subdivision development that formed the reserve. Additional surveys of the reserve and the Nowra Reserve were undertaken as part of this RAP and several bird surveys have been undertaken by Mike Newman over the past 10 years.

A substantial portion of the reserves within and around Single Hill contains former agricultural land which has limited natural values apart from some regenerating grasses and shrubs.

There are three native vegetation communities that are of high conservation significance within the reserves and one recorded threatened flora species. The remnant vegetation within the reserve provides habitat for a range of fauna species including wallabies, bandicoots, possums and a range of woodland bird species including the endangered swift parrot and the uncommon blue-winged parrot.

The assessment also included mapping the occurrence of declared and environmental weeds which pose a threat to the area's natural values.

A description of the natural values of the reserve is provided in the following sections. Threats to the natural values and management recommendations to conserve and maintain these values are provided in Section 4.1.

3.1 Vegetation communities

The reserves support a mixture of native and exotic pasture and native forest and woodland vegetation (Figure 3 and Figure 4). The condition of the native vegetation communities within the reserves varies with all areas subject to degrading processes including weed invasion, overgrazing, construction of informal tracks and dieback. The vegetation within the Single Hill Reserve has had a long history of grazing which has impacted the understorey vegetation and limited regeneration within these areas. The low-lying ground and gentler slopes on Single Hill have been subject to arable use. The remainder has been subject to stock grazing, the effect of which has been to adversely affect regeneration of trees and shrubs. The consequent transition from eucalypt forest to *Bursaria* woodland and then grassland has been accelerated by the phenomenon of rural tree decline associated not only with grazing practices but with lower rainfall and drought stress.

Six native vegetation communities and one disturbance induced community occur within the reserves as per the TASVEG Vegetation Classification System (TASVEG 4.0): *Eucalyptus globulus* forest and woodland (DGL); *Eucalyptus viminalis* grassy forest and woodland (DVG), *Eucalyptus amygdalina* forest and woodland on sandstone (DAS), *Bursaria* – *Acacia* woodland and scrub (NBA), Saline grassland (ARS); Lowland grassland complex (GCL), Agricultural land (FAG). The distribution of the communities is indicated in Figure 3 and Figure 4 and descriptions of the communities and threatened flora species are provided in Appendix 1.

Taxonomic nomenclature for flora follows the latest Census of Vascular Plants of Tasmania (Baker & de Salas 2020). Classification of vegetation communities is in accordance with Kitchener and Harris (2013) and TASVEG 4.0.

Conservation Significance of vegetation communities

There are two threatened vegetation communities within the reserve network as listed under the *Nature Conservation Act 1999* – DGL and DAS. These vegetation types have all been subject to clearance and land conversion since European settlement and are under reserved.

3.2 Flora values

Threatened species

Two threatened flora species occurs within the reserve.

Narrowleaf new holland daisy (*Vittadinia muelleri*) – this small daisy is widespread and abundant on some of the dry north facing slopes supporting native grassy vegetation. A very large population (100,000's plants) has been recorded within the Nowra Reserve (Figure 3 and Figure 4) and there are records within the coastal reserve.



Figure 2. narrowleaf new holland daisy (*Vittadinia muelleri*) in flower - LHS (Image source: Threatened Species Section 2020); spreading knawel (*Scleranthus fasciculatus*) - RHS.

Spreading knawel (*Scleranthus fasciculatus*) – straggling ground dwelling herb found in pure poa tussock grassland, dry sclerophyll vegetation and grassland/grassy woodland. Species recorded in several locations within the Nowra Bushland Reserve (Figure 4).

Three other threatened flora species were identified in the 2007 natural values report completed for Single Hill - rough spear grass (*Austrostipa scabra*), knotty spear grass (*Austrostipa nodosa*) and gentle rush (*Juncus amabilis*). These species have been delisted from the *Threatened Species Protection Act 1995* since the initial reports were written.

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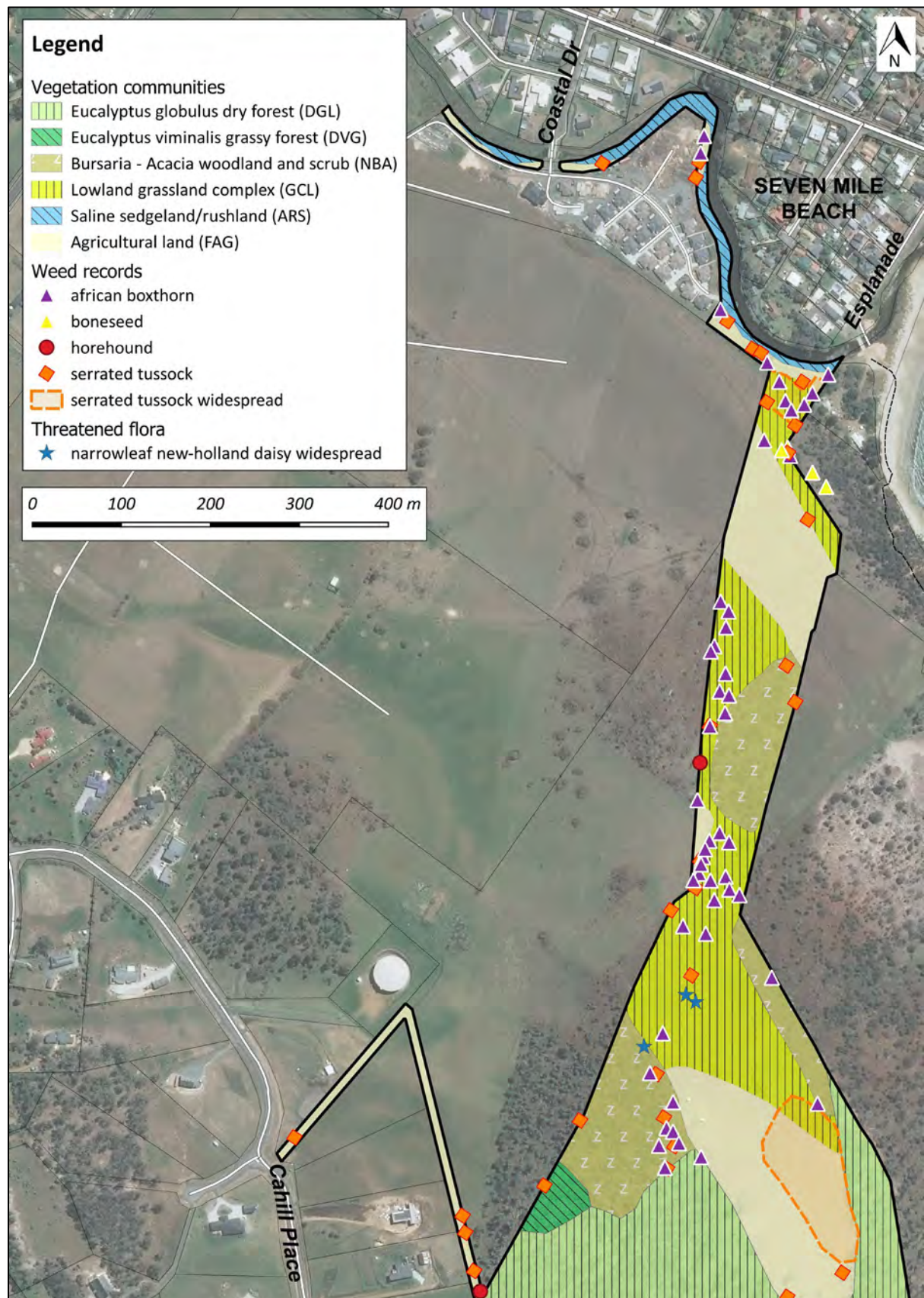


Figure 3. Vegetation communities, threatened flora records and weeds - northern end of Single Hill Reserve.

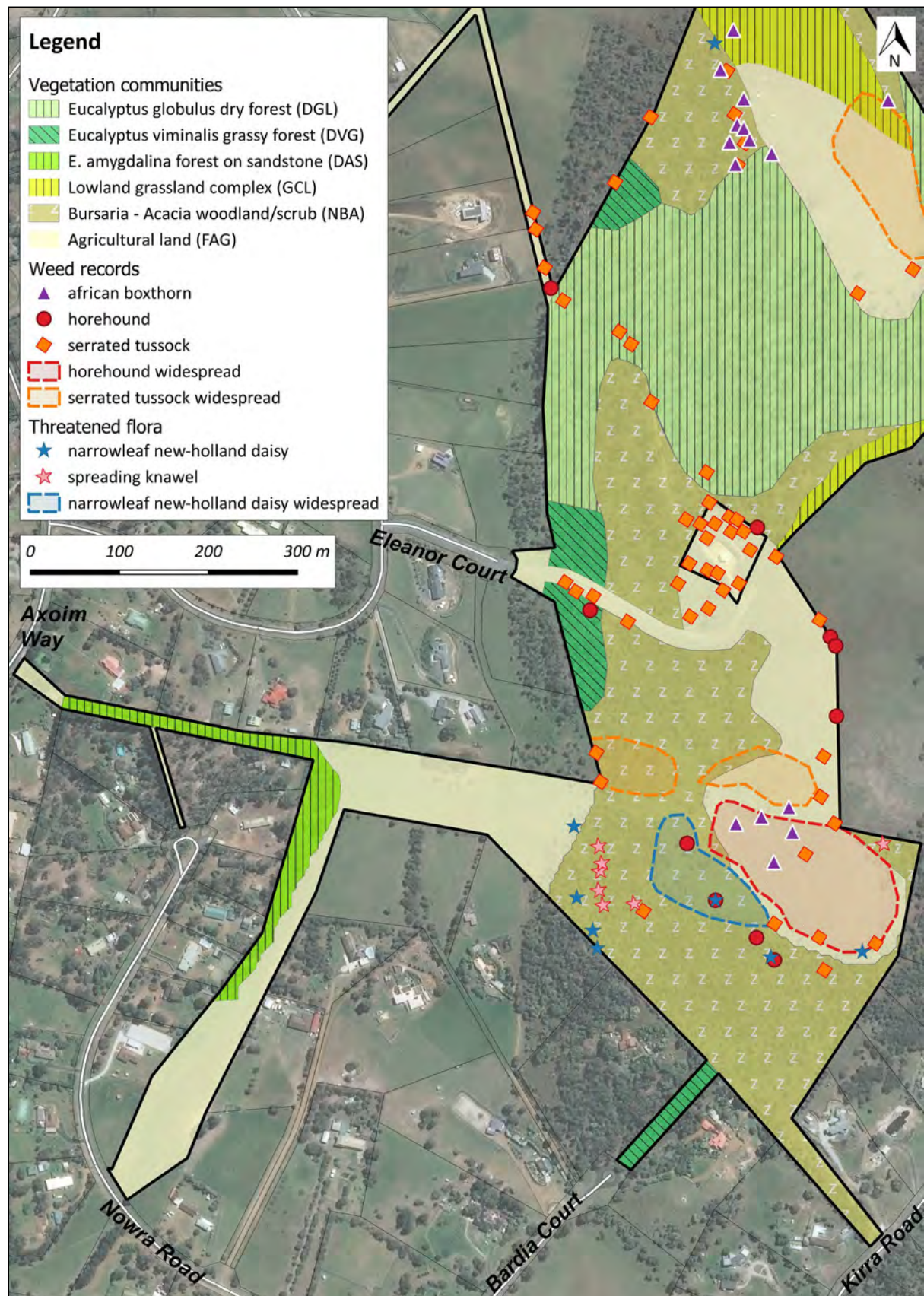


Figure 4. Vegetation communities, threatened flora records and weeds -southern end of Single Hill Reserve and Nowra Bushland Reserve.

3.2.1 Introduced species

The reserve network contains varying and diverse infestations of introduced species due to the historical land use and the invasive nature of many of the weeds recorded. The weeds range from highly invasive environmental weeds to more benign introduced pasture grasses, herbs and some garden species.

Six declared weed species (*as per the Weed Management Act 1999*) occur within the reserve as mapped during surveys in 2020 and previously in 2007 (*North Barker 2007*), 2012 (JMG 2012) and 2019 (Wild CALM 2019), these include:

- african boxthorn (*Lycium ferocissimum*)
 - Boxthorn is widespread on the top and northern side of Single Hill and scattered mature plants occur on the northern hillside within Nowra Reserve. Mature plants were also recorded along old fence lines and amongst remnant vegetation.
- boneseed (*Chrysanthemoides monilifera* ssp. *monilifera*)
 - Scattered plants occur at the northern end of the reserve and in the adjacent coastal reserve.
- californian thistle (*Cirsium arvense*)
 - Localised infestations recorded around the entrance to the reserve at the end of Eleanor Court and on adjacent private lots (Wild CALM 2019). Follow-up control of known infestations scheduled for 2021-2022.
- horehound (*Marrubium vulgare*)
 - Horehound is widespread and dominant in open ground within the Nowra Reserve. It has aggressively colonised large areas of previously barren ground formed when serrated tussock control was undertaken. Primary control is due to be undertaken in Autumn 2021.
- serrated tussock (*Nassella trichotoma*)
 - Serrated tussock is widespread and common in open grassy areas on single hill and amongst vegetation towards the Nowra Reserve. Significant areas of serrated tussock were controlled as part of the subdivision development and further primary control is due to be undertaken in Spring 2020.

Indicative locations of weed infestations are provided in Figure 3 and Figure 4.

Some primary control of serrated tussock, californian thistle and horehound were undertaken in 2019 as per conditions of the handover of POS to the Council. Significant infestations of serrated tussock and african boxthorn remain on the top and northern face of Single Hill and these are due to be treated by weed control contractors in spring 2020. Ongoing management of all weed infestations will be required to control germination from seeds stored in the soil as significant weed infestation remains on adjoining land.

3.3 Fauna values

The native vegetation communities within the Single Hill and Nowra reserve provides a range of habitat options for native mammals, woodland birds, reptiles and invertebrates.

Mammals

Bennett's wallabies, pademelons, brush tailed possums, echidnas and bandicoots have been recorded in the local area. The woodland vegetation in the Nowra Reserve and on Single Hill support significant populations of bennett's wallabies. These animals shelter in the reserve and in vegetation on adjoining land during the day and forage in surrounding grassland, paddocks and backyards during the evenings. The Nowra bushland is heavily impacted by browsing wallabies with the understorey overgrazed and no recruitment of shrubs or tree species apparent. The lack of understorey vegetation throughout remnants limits the habitat available for small mammals such as bandicoots and small woodland species which are driven off by aggressive birds such as noisy miners.

The Nationally listed eastern barred bandicoot (*Perameles gunnii*) has not been recorded within the reserves, however there are several records of this species and the southern brown bandicoot in the general vicinity. Both bandicoot species require dense ground cover to provide shelter adjacent to more open foraging areas. The lack of understorey vegetation in the reserve is likely to limit the potential for these species to occur in the reserve. Regeneration of the understorey to provide habitat is vital to attracting these species which in turn play an important role in turning over the soil to stimulate further regeneration and recruitment. The vegetation on Single Hill has been subject to stock browsing for an extended period which has limited recruitment in the remnant and created areas of bare ground on the northern facing slope. The exclusion of stock (from mid-2020) from the vegetation is likely to lead to an improvement in the condition of this remnant although active management (i.e. fencing) may be required to limit mammal browsing on regenerating vegetation.

Birds

Bird surveys have been undertaken on Single Hill and within the Nowra Reserve for over 10 years by Mike Newman, Birdlife Australia and others. Separate surveys of woodland and grassland areas have been undertaken with 26 species recorded. Separate common species recorded in the reserves include the eastern rosella, musk lorikeet, common bronzewing and noisy miner. The remnant grassland provides important habitat for the australasian pipit and skylark. Substantial regeneration of the understorey within the remnants may lead to a change in the bird assemblage found in the reserves with species like yellow-throated honeyeaters and pardalotes benefitting. A complete bird species list can be seen in Appendix 6.

The mature blue gum trees on Single Hill provide potential foraging habitat for the critically endangered swift parrot (*Lathamus discolor*), although the species has not been recorded in the reserves. This species breeds along the eastern and northern coasts of Tasmania during the spring and summer and relies on flowering blue gums and black gums nearby to vegetation with nesting hollows to successfully breed. Some of the mature trees on Single Hill have developed small hollows which provide potential nest site for the parrots and rosellas.³

³ Pers comm Mike Newman, Birdlife Australia, August 2020

Blue winged parrots have also been recorded on Single Hill⁴. Whilst this species is not listed as threatened on a State or National level it is likely to be red-listed in the Action Plan for Australian Birds later this year and as such has conservation significance.

The presence of a wedge-tailed eagle nest on the eastern side of Single Hill was mentioned during the community walk and talk event⁵ in the consultation period however there are no records of a nest within the NVA (DPIPWE) and no evidence of a nest was recorded during the surveys. Eagles have been recorded foraging over the reserve⁶ with these birds likely to nest in the Mount Rumney Hills.

3.4 Aboriginal heritage

The municipality of Clarence, including the areas of Acton and Seven Mile Beach, was previously occupied by the Mumirimina band of the Oyster Bay tribe (Maynard, L. 2007).

There is always the potential for Aboriginal heritage artefacts to occur within coastal areas. 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 Aboriginal 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 (UDP) should be implemented immediately, and the items reported to Aboriginal Heritage Tasmania for advice. The UDP is available at <https://www.aboriginalheritage.tas.gov.au/Documents/UDP.pdf>

3.5 European heritage

A large portion of Single Hill is the remains of what was once a 1000 acre farm (called 'Toronto') that stretched between Seven Mile Beach Road and Lauderdale Primary School. The farm house is located at the base of Single Hill adjacent to Seven Mile Beach Road (JMG, 2008; Alexander, 2003).

Additional history of the Acton Park and Seven Mile Beach area can be found in 'The eastern shore: a history of Clarence' (Alexander, 2003).

3.6 Recreational values

The reserve network in the Acton Park Roches Beach and Seven Mile Beach area provides opportunities for the community to access the bushland and provide connections to the coastline and between the settlements. They are used for walking, running, bike riding, horse riding, bird watching and dog walking, and provide access to coastal reserves for swimming, surfing and boating. The natural values of the reserves surrounding Single Hill

⁴ Pers comm Mike Newman, BirdLife Australia, September 2020

⁵ Comment during Walk and Talk event.

⁶ Community report Walk and Talk event; Pers comm Mike Newman

and the recreational opportunities that they allow are highly valued by the local community and are identified as key reasons for living in the community.

Track development

Single Hill is also used by the wider community as a recreational destination, particularly for walking, mountain bike riding and horse riding. For the past few years' triathlons have been held at Seven Mile beach and a cross triathlon at Roches Beach, which attract competitors from all over Tasmania and from the mainland.

The development of new tracks within the Single Hill Reserve will provide new linkages over Single Hill from Nowra Reserve and Cahill Place to Seven Mile Beach and provide loop routes. The tracks will also provide an extension of the Tangara Trail which joins the reserve off Cahill Place, Axiom Way, Nowra Road, Bardia Court and Kirra Road.

The new connection provide by Single Hill has been identified in several previous recreation plans developed for the area including the Tangara Trail Network Management Plan 2012-2017 (Inspiring Place, 2012) and Acton Trails and Reserves Reserve Activity Plan (Tasflora, 2018).

Hang gliding and paragliding

Single Hill provides an ideal location for hang gliding and paragliding with the Tasmanian Hang gliding and Paragliding Association (THPA) having a long association with flying from the location when the land was in private ownership. Following the transfer of the hilltop to Council THPA entered into a formal licence agreement with CCC to use the reserve⁷. The development of the RAP provides an opportunity to formalise the use of the reserve for this sport and establish formal launching and landing sites.

3.7 Landscape Setting and Connectivity

The handover of the Single Hill Reserve to the Council in 2019 secured a large area of native vegetation and visually significant feature of the Acton Park, Roches Beach and Seven Mile Beach area whilst also providing an important recreational link between these local communities (Figure 5).

The reserves form an additional recreation link to the existing coastal reserve and are an important addition to the Tangara Trail Network as outlined in the Acton Trails and Reserves Reserve Activity Plan (Tasflora, 2019) and in the Tangara Trail Network Management Plan 2012-2017 (Inspiring Place, 2012).

The reserves contain large areas of intact native vegetation which provides habitat for a range of native flora and fauna species. In conjunction with the intact vegetation on the eastern slopes of Single Hill the reserve provides a wildlife corridor between Seven Mile Beach Coastal Reserve and Roches Beach and from the coast through to the Mt Rumney Hills utilising small linear reserves and remnant bushland and native plantings on private land. Maintaining and enhancing the connectivity of natural areas plays an important role in

⁷ THPA submission

gene flow between populations and allows native species to move through the landscape to breed, forage and nest.

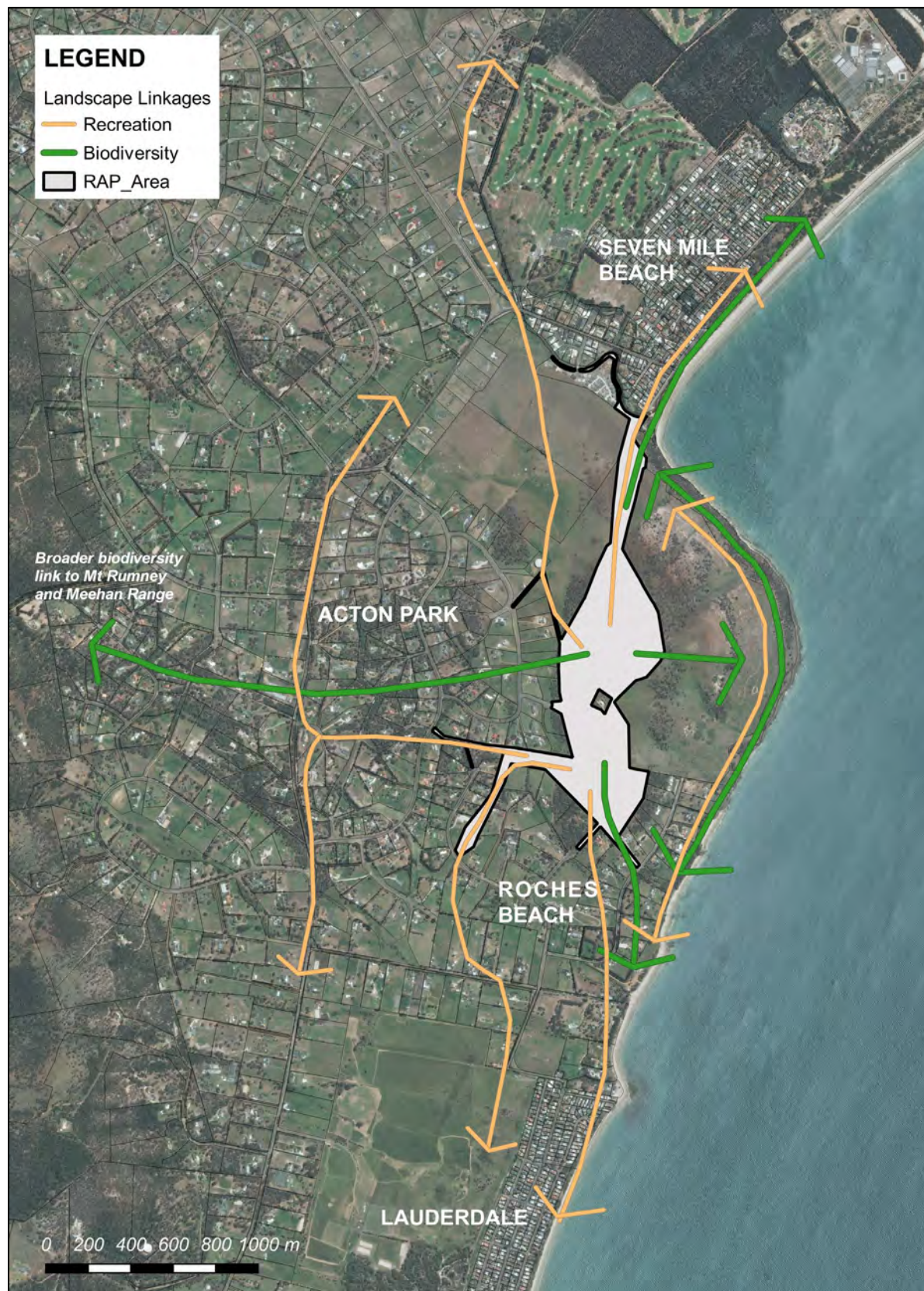


Figure 5 – Landscape connectivity of reserve.

4 Management issues and recommendations

A range of management issues were identified during the consultation phase of the draft RAP. Issues have been divided into two major groupings: management of natural values and management of recreation values and public amenity.

Each section includes management actions, with priority actions those that had strong community support and/or were identified as important issues by Council officers or stakeholders.

Natural Values Management

- Vegetation management
- Weed management
- Domestic animal management

Recreational Values and Public Amenity

- Track development and management
- Hang gliding and Paragliding
- Entrance upgrades and infrastructure
- Signage
- Community involvement

4.1 Vegetation management

There are large areas of remnant woodland and grassland vegetation within the reserves which provide important habitat for native flora and fauna species and are an important visual component of the Acton Park and Seven Mile Beach areas. The management of these areas to improve their condition and ensure that remain viable in the long-term is an important management action of the Reserve Activity Plan.

The condition of the native vegetation varies between different remnants with all areas showing some level of degradation due to browsing or over grazing, weed infestation, construction of informal tracks and dieback due to dry conditions.

The woodland remnant in the **Nowra Reserve** has tall shrub layer dominated by prickly box with scattered eucalypts restricted to the lower southern portion of the remnant. The upper and western facing portions of the remnant contain a higher percentage of weed species, has low recruitment of shrub species and the prickly box is showing signs of dieback (Figure 6). During the initial July survey of the remnant the understorey was heavily browsed and appeared to have low diversity however following the wet spring the vegetation condition assessment (VCA) undertaken in October revealed a higher species diversity than recorded previously. The lower portion of the remnant is in better condition than the upper slope (Figure 7). The remnant contains an informal network of bike tracks which is impacting the condition of the remnant and facilitating the spread of weeds such as horehound, thistles and serrated tussock and exotic grass and herb species. The remnant also contains a

substantial population of bennett's wallabies which heavily browse the remnant reducing recruitment.



Figure 6 – Woodland in Nowra Reserve with prickly box shrub layer and degraded ground layer in July 2020 (mountain bike track to be formalised shown in picture).



Figure 7 – Woodland remnant in Nowra Reserve in October 2020 (lower slope with fewer bike tracks).

The **Single Hill Reserve** contains areas of bursaria woodland and eucalypt woodland and native grassland remnants. The areas of bursaria woodland are devoid of a eucalypt layer which is likely to have been lost through the effects of dieback from drier conditions and browsing by stock. The eucalypt remnant on Single Hill contains an overstorey of blue gums and scattered white gums. This remnant is in better condition than the Nowra bushland with a greater diversity of understorey species, less evidence of browsing and fewer weeds however there is some dieback of the eucalypt crowns and no recruitment of eucalypts or shrub species evident.

Bursaria woodland remnants on the northern end of Single Hill and midway down the north facing slope are heavily degraded by weeds and have been heavily impacted by prolonged browsing and trampling by stock which has impacted the ground layer. There are a combination of exotic and native grasses and herbs species present.

The grassland areas have been formed due to the historic clearance of the tree and shrub layer and in some areas the conversion to agricultural land. Some areas of agricultural land are transitioning back to native grassland land with more drought tolerant native species recolonising areas. There are however significant exotic grasses, flat weeds and herbs remaining.

The grassland remnants provide habitat for grassland bird species such as the australasian pipit⁸, skylarks and the blue winged parrot. The restoration of the grassland (from removal of stock grazing) and the control of weeds such as serrated tussock and horehound will improve the condition of some grassland areas (refer to Weed Control for actions).

Vegetation Management Actions

The following actions are recommended for the management of the remnant vegetation in the reserve.

VM1 Action – Formalise mountain bike tracks within the Nowra bushland to limit impact on the native vegetation and close informal trails.

The removal of stock from the remnants through the formation of the reserve is likely to lead to the improvement in the condition of these remnants provided weed control maintenance is carried out.

As part of the RAP the condition of the remnants has been formally measured using a Vegetation Condition Assessment (VCA) process. A VCA assessment of the blue gum woodland (DGL) on Single Hill and the Bursaria woodland (NBA) within Nowra Reserve was undertaken in October 2020 (refer to Figure 8 for location of VCA sites). The assessments provide a baseline condition assessment of the main vegetation remnants within the reserve which can be repeated on a regular basis to monitor any changes in condition over the course of the RAP and guide management actions.

The VCA assessments of the remnants produced a condition score of 65/100 for the NBA remnant and 58/100 for the DGL remnants (refer to Appendix 2)

⁸ Bird surveys, Mike Newman Birdlife Australia September 2020.

VM2 Action – Undertake follow-up VAC assessments in bushland remnants every 2-3 years to determine if vegetation condition is improving. Revise vegetation management action as appropriate based on results of VCA.

Natural regeneration within remnants

The removal of stock for the Single Hill Reserve has reduced browsing pressure on bushland and grassland remnants in the reserve and is likely to lead to regrowth of groundcover layer to reduce erosion risk. Browsing pressure from native mammals will continue to be an issue within the reserve and may prevent meaningful native revegetation from occurring. The regeneration of the eucalypt and low shrub layer and ground cover grasses and herb species is important for the ongoing health and long-term viability of the eucalypt woodland. The VCA revealed that prickly box regeneration is occurring within the remnant but no eucalypt regeneration. This is consistent with the common pattern of the replacement of grassy eucalypt woodland with prickly box woodland as has occurred in the Nowra Reserve and other hillsides in the region. Whilst the wet spring has triggered regrowth of the understorey in the Single Hill remnant browsing pressure from native mammals is likely to increase as condition dries out over summer and in subsequent drier years. As such active measures need to be considered to ensure regeneration and recruitment occurs. This can include fencing off areas to prevent access by wallabies and possums, ecological burns to stimulate a regeneration event (likely to require fencing as well) and active plantings within and adjacent to remnants. A trail regeneration area has been identified on Single Hill (Figure 8). This area should be fenced off with the boundary of the trail area to follow existing tracks where possible for ease of installation and maintenance. The fence off area will also include open areas on the hilltop where active revegetation can be undertaken to increase the size of the remnant.

VM3 Action – Fence off a trial regeneration area within the blue gum woodland on Single Hill. Undertake small low intensity ecological burn within fenced off area to stimulate regeneration and monitor results using VCA process.

The control of pasture grasses and herbs is a low priority. Whilst species such as capeweed, stork bill and plantain are widespread and dominant in many areas in the reserve, they play a role in maintaining groundcover and preventing soil erosion. Any broadscale control of these types of weeds should only be carried out where replacement with native species which can occur. It is recommended that any revegetation of grassland areas occurs around the areas of grassland that are in better condition or adjacent to healthy remnant woodland. This will require significant follow-up and maintenance.

Revegetation

Active revegetation with the reserves can be undertaken to improve the condition of the remnants, extend the area of habitat for native fauna, link existing remnants and improve the visual amenity of the reserve in conjunction with the formation of new walking tracks.



Figure 8 – Suggested revegetation and trial regeneration areas and location of VCA sites.

Suggested revegetation areas:

- Open areas in linear reserve on western side of Nowra Reserve (towards Axiom Way). This area provides a suitable location to incorporate planting of the endangered morrisbys gum in support on a recovery project for this species
- Between Nowra reserve and access track off Eleanor Court in conjunction with walking track development and weed control. Limit to low ground cover species and groundcovers to improve track amenity without impacting views.
- On Single Hill – adjacent to remnant woodland on western side of hilltop within the proposed area to be fenced off. This location provides easy access for planting and maintenance.
- On north facing slope in conjunction with walking tracks. Limit to low ground cover species and groundcovers to improve track amenity without impacting views.
- Individual plantings in open areas within the remnants or installing guards around naturally regenerating trees.
- In open area adjacent to Acton Creek in conjunction with entrance landscaping (refer to Section 4.5 Entrances upgrades and infrastructure).

The Acton Park Landcare Group, Seven Mile Beach Coastcare Group and Tasmanian Hang gliding and Paragliding Association (THPA) have all indicated support for undertaking revegetation activities within the reserve provided the plantings and maintenance are supported by the Clarence City Council⁹. Several opportunities currently exist for funding assistance with revegetation activities such as local government grants and Landcare Tasmania 'Dirty Hands' grants. There is also an opportunity for the Council and local care groups to be involved with a project to plant the Endangered *Eucalyptus morrisbyi* (morrisbyi gum) in the reserve. This project is a partnership between Enviro-dynamics, PWS, NRM South and UTAS as part of a Regional Landcare Partnership grant. This species is highly restricted with the most significant population found on a similar west facing hillside near Cremorne.

Any revegetation projects should be of a manageable size which can be established and maintained prior to moving onto new areas. Due to the browsing pressure from native mammals in the area any revegetation projects will need to include fencing and plant guarding to ensure successful establishment.

VM4 Action – CCC and local care groups to undertake revegetation projects within degraded and open areas in reserve with funding assistance through current funding avenues.

VM5 Action – Undertake planting of morrisbyi gum in conjunction with recovery project.

⁹ Chris Johns: CCC Volunteer Co-ordinator indicated that groups have capacity to provide support for revegetation activities but not take the lead role.

Bushfire Management

Bushfires within the Single Hill and Nowra Bushland Reserves represent a risk to the surrounding residential properties, infrastructure and assets within the reserve and the ecological values of the land.

A Bushfire Management Plan (BMP) for the reserves will aim to lessen bushfire risks by minimising the risk of fires starting in the reserves and the risk of injury or damage to assets in and surrounding the reserve. The BMP can also outline the use of fire in managing the condition of the native vegetation and can be used as a tool for the removal of weeds and regeneration of degraded areas.

There is an existing BMP for the Roches Beach Coastal Reserve and Nowra Bushland Reserve which is subject to review in 2022 (CCC, 2017). This BMP provides a framework for bushfire management that meets Clarence City Council's land management objectives for the reserves. The approach adopted in the BMP is to withhold planned burning for a 5-year period to allow the implementation of a herbicide regime to reduce serrated tussock populations in Nowra Bushland Reserve. This weed control is ongoing and as such the use of fire to reduce fuel loads and as a tool to improve the ecological health of the remnants will need to be reassessed.

The management requirements within the Single Hill Reserve BMP are similar to those of the existing BMP for Nowra Reserve as both are interconnected and fires can readily travel from one to the other. The threat to adjoining properties from the vegetation on Single Hill has however been managed as part of the approved Bushfire Hazard Management Plan for the subdivision that created the adjoining lots. The plan requires that dwellings developed on the lots adjoining the reserve establish bushfire hazard management areas within lot boundaries and construct dwellings to comply with minimum construction standards for bushfire prone areas.

Given the condition of the remnant on Single Hill the use of low intensity burns to manage fuel loads whilst stimulating regeneration of eucalypt and understorey species should be considered in conjunction with browsing mammal control and the control of weeds such as african boxthorn and serrated tussock.

VM6 Action – Develop a Single Hill Bushland Reserve Fire Hazard Management Plan. Use of ecological burns to assist with regeneration of remnant vegetation to be included in plan.

4.2 Weed management

The control of environmental weeds within Single Hill Reserve is a major management action as the weeds represent a significant threat to the vegetation remnants, threatened flora species and the amenity of the reserve.

Large infestations of serrated tussock, horehound and african boxthorn occur within the reserve and on adjoining private land and there are also localised infestations of boneseed and californian thistle around the margins of the reserve. Due to the density of weeds within

the reserve and on adjoining land eradication of these species is unlikely to be achieved without a significant long-term and coordinated approach.

Primary control of serrated tussock, californian thistle and african boxthorn has been undertaken in some areas of the Single Hill Reserve prior to hand over to the Council (as per the Weed Management Plan Single Hill 351 Acton Road, Acton Park (2012). Additional primary control of the remaining serrated tussock and african boxthorn on Single Hill and on the northern slope (Figure 6) is scheduled to be carried out in Spring 2020 as part of the development approval conditions associated with the reserve formation. These weed control works are in line with *Recommendation 6 of the Action Trails and Reserves RAP 2018 - undertake a sweep of the Single Hill Bushland Reserve and control all declared and environmental woody weeds encountered within one year of it passing into Council ownership.*

WM1 Action – Control serrated tussock and african boxthorn in Single Hill Reserve as per agreed schedule.

The weed control implementation plan (CCC, 2020) also includes 2 years of follow-up control. The maintenance of the track and roadside edges is a high priority to minimise the spread of weeds on bike horse and shoes to other areas in the reserve network.

WM2 Action – Conduct follow-up control of serrated tussock and african boxthorn as per agreed schedule.

WM3 Action – Maintain track and road edges weed free to prevent spread of seed other areas.

Isolated infestations of boneseed were recorded at the northern end of the reserve and in the adjacent Coastal reserve. As this is an isolated infestation the control of this species is a high priority to eradicate this species from the area.

WM4 Action – Control boneseed plants near Seven Mile entrance and adjacent to Coastal reserve.

The Council has undertaken actions to control serrated tussock across large areas of the Nowra Reserve however scattered plants and clusters remain in the reserve. The control of plants along the margins of and within the remnant vegetation are the highest priority followed by the ongoing maintenance of serrated tussock in the open areas. In areas where widescale control of serrated tussock has occurred previously, horehound has replaced the serrated tussock. Due to the widespread nature of this species in the degraded pasture any broadscale control of the weed needs to be in conjunction with actions to replace the groundcover to with native and/or exotic grasses to cover the bare ground.

WM5 Action – Control serrated tussock and horehound in bushland in Nowra reserve.

Introduced pasture grasses and broadleaf weeds such as capeweed, brassicas, thistles, plantain and storks bill are widespread and abundant in areas of degraded pasture. Whilst

these weeds present a management risk to native grasslands, they also play a role in providing soil cover and as such their control 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 (e.g. along track edges).

Vehicle access to the summit of Single Hill is provided by an access road off the end of Eleanor Court. The access road is utilised by various agencies who operate infrastructure within the reserve including TasWater. Hobart Airport, Telecommunications service vehicles, Council Bushfire Management Staff etc. Due to the presence of serrated tussock (and seed) along the roadside and on the hilltop, there is potential for vehicles operating in these areas to transport seed around the site or to other sites. As such all areas where vehicles have access need to have serrated tussock controlled as a priority. Vehicle access to proposed landing site 4 (Figure 11) by the THPA pose a risk of spreading serrated tussock and horehound as those species are widespread in the Nowra Reserve. Vehicle use in this area is to be restricted until declared weeds are controlled.

The control of serrated tussock in the TasWater water tank site is also a priority to ensure a seed source does not remain to reinfest the reserves following control.

WM6 Action – Liaise with TasWater to control serrated tussock with water tank title in Single Hill Reserve.

Signage should be installed at gate at end of Eleanor Court to inform and warn road users of weed risk and to stay on formed surfaces as required.

WM7 Action – Provide vehicle hygiene protocol to all agencies that access the hilltop.

WM8 - Install signage at gate at end of Eleanor Court regarding risk of spreading serrated tussock.



Figure 9 – African boxthorn and serrated tussock to be controlled on northern side of Single Hill

4.3 Domestic animal management

The management of dog access to the reserve was identified as an important issue through the community consultation process with 9 representation made with opinions varying from prohibition of dogs for the reserve to allowing dogs off lead and under effective control.

Potential impacts of dogs

The Single Hill Reserve provides habitat and shelter for significant populations of wallabies and possums, small mammals such as bandicoots and reptile species. Dogs can impact native species through predation, disturbance of foraging and by leaving scent and droppings that discourage native animals from some areas. Uncontrolled dogs can also impact other reserve users by scaring horses, approaching bike riders or jumping or scaring other pedestrians.

It is important that dogs are kept under effective control while in the reserve to minimise conflict with other users and reduce risks to wildlife. Areas of intact native vegetation such as the southern end of the Nowra Reserve and the western and eastern sides of Single Hill contains important fauna habitat and dog access to these areas should be carefully controlled. There are some areas of the reserve which contains open exotic grassland and these areas may provide more suitable off leash areas.

Feral cats have been observed in the Reserve and are known to have significant impacts on native fauna through the predation of small mammals (including eastern barred bandicoots), birds and lizards, and the spread of disease such as toxoplasmosis. Domestic cats that roam bushland can have similar impacts to feral cats. The CCC supports the *Cat*

Management Act 2012, which requires de-sexing, micro chipping and keeping cats under control and inside at night.

The Single Hill reserve does not have a current dog management status whilst the Nowra Reserve is declared as a under ‘effective control’ area. The reserves should be including in the Clarence Dog Policy Review.

DM1 Action – Include Single Hill Reserve in the Clarence Dog Policy review. Recommend that ‘Dogs on lead’ policy be applied to reserve.

DM2 Action – Install signage at entrances for ‘Dogs on lead’ and picking up dog poo.

DM3 Action – Promote requirements of the *Cat Management Act 2012* including de-sexing and microchipping; promote cats being kept inside at night in local community.

4.4 Track development

The development and upgrading of tracks to improve access and connectivity between Roches Beach, Acton Park and Seven Mile Beach is a key action of the plan. Several detailed submissions were received from user groups and the community consultation identified the development or extension of a track network to connect with existing trails as the highest priority for action (59 responses).

Due to the complexity of the competing interests of users including walkers, bike riders and horse riders the CCC commissioned a separate Single Hill Trail Network Plan to be developed by track consultants Mtn Trials (in conjunction with Enviro-dynamics).

The plan assessed the route and condition of existing trails within the reserve, assessed the landscape constraints in order to provide suitable linkages for all users between existing trails, determine the construction standards of trails and provide cost estimates for each section of track. The track network was also designed to avoid areas of intact vegetation and minimise impacts on natural values. The draft plan is provided in Appendix 3.

The following section provides a breakdown of the proposed track works and reasoning behind decisions to designate some track s as multi-use and limit the use of other to some users only.

Multi-user tracks

There is a widespread network of multi-use tracks and trails within the Clarence Municipality which provide an opportunity for bike riders, walkers and horse riders to share trails. By following a code of conduct (Appendix 8) the multi-user tracks and trails are generally enjoyed by all users without compromising the safety of any group.

The proposed track network in the Single Hill Reserve aims to provide multi-user tracks where possible within safety and maintenance constraints and while minimising environmental and visual impacts.

A significant number of the submissions received during the consultation period were in favour of multi-use tracks although there were some concerns raised. The concerns included mountain bikers ‘spooking’ horses (in particular on steep and /or narrow sections of trail), mountain bikers approaching walkers and horses at speed without warning; walkers meeting horses on narrow or steep sections of track and concerns for horse riders and bike riders when the encounter dogs off lead and not under effective control. There were also concerns raised about the impacts of bikes and horses on track conditions (maintenance) and concerns with the spread of weeds.

Whilst many of these issues can be managed through track design (i.e. improved sight lines, separate tracks in tight areas or ‘pinch’ points), signage (included code of conduct signs see Appendix 8), weed control and education some tracks within the Single Hill Reserve have been designated as single use due to issues of steepness, safety and erosion risk and lack of suitable connections.

The following tracks have been designated as multi-user tracks (refer to Track Network Plan Appendix 4) – **TK7, TK8, TK9, TK11, TK12, R1, R2 and R4.**

These tracks will provide linkages between existing tracks and trails from Nowra Road, Kirra Road, Axoim Way, Eleanor Court and Cahill Way and access to the top of Single Hill.

Horse Riding Limitations

Horse access on the north face of Single Hill (portion of TK4) to Seven Mile Beach is not recommended due to the following factors;

- Steepness of the slope – sections of the slope are steep and unsuitable as a designated horse trail for riders of all experience levels.
- Risk of erosion of hill side because of horse use and/or higher maintenance costs if horses use walking track. TK4 will be constructed in a manner which minimises visual impacts by following fence lines and old vehicle tracks thereby avoiding benched tracks and multiple switchbacks. As such this track will not provide a suitable climbing track for horses.
- Impacts on new track to be formed at base of slope. New track will traverse a very steep section when leaving Acton Creek which will require heavy benching. This section of track will be prone to damage from horses.
- Lack of a suitable connection route at the bottom of the Hill –
 - horses are not permitted on Seven Mile Beach and whilst horse can walk along Esplanade this route will lead riders to suburban streets.
 - proposed track along Acton Creek is very narrow in places (between a fence and creek bank) and is directly adjacent to a retirement village and not suitable for horses.

Future horse access from Single Hill to Seven Mile Beach and further north will be provided from the Cahill Place track via POS and roadways associated with future stages of the approved subdivision to Seven Mile Beach (Figure 9). This track will connect to International Close where the Council is progressing a linkage to Tangara Trail via private land.

TD1 Action – Upgrade and develop multi-user tracks to provide linkages from Nowra Reserve to Single Hill and Cahill Place.

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Figure 10 – Proposed multi-user (horse) track network.

Mountain Bike Tracks

The mountain bike track network will include all multi-use trails and tracks **TK10, TK4 and TK5** (refer to Appendix 4).

The collection of informal mountain bike tracks within the Nowra Reserve known as Wallaby Ways will be formalised as part of the Track Network Plan (TK10) to form a dual directional loop track with connections to Axoim Way, Nowra Road and the new connector track to Single Hill (TK7). Track TK10 will be a dedicated mountain bike track due to the high number of tight switchbacks which are not suitable for use as horse riding or walking tracks.

TD2 Action – Formalise mountain bike tracks within Nowra Reserve (duplicate of VM1 Action).

A loop will be formed by upgraded an old vehicle track (R1) to the Cahill Drive track (TK8) junction a new track along the fence line (southern end of TK4) to the new climbing switch back to the summit (TK5) and then back down the summit road (R1) (Figure 10). This loop will be dual directional. The new climbing switchback track will be located within degraded bursaria woodland which is devoid of a ground layer. There is an existing informal benched track section in this area which will be utilised in the new track to minimise impact in the vegetation.

TD3 Action – Construct new track from Cahill Place junction to Single Hill summit. Minimise impacts on native vegetation.

Mountain bikes will not be permitted on the north face of Single Hill (portion of TK4) to Seven Mile Beach due to concerns with the safety of walkers due to steepness and potential high speeds and erosion concerns. TK4 will be constructed in a manner which minimises visual impacts but avoiding benched tracks and multiple switchbacks. As such this track will not provide a suitable climbing trail for mountain bikes.

Access for mountain bikes to the end of Seven Mile Beach is currently provided by the existing coastal track and from Cahill Place, Axoim Way and Seven Mile Beach Road. Future access will be provided from the Cahill Place track via POS associate with Stage 11 of the approved subdivision to Seven Mile Beach.

A further track route (optional track) was investigated across the lower western slope between Nowra Reserve and Single Hill (Figure 10). This route provides a link from Nowra Reserve to Cahill Place without the need to climb to the ridgeline. The track would however traverse intact vegetation and as such a detailed assessment of environmental impacts against the demand for this track will need to be undertaken.

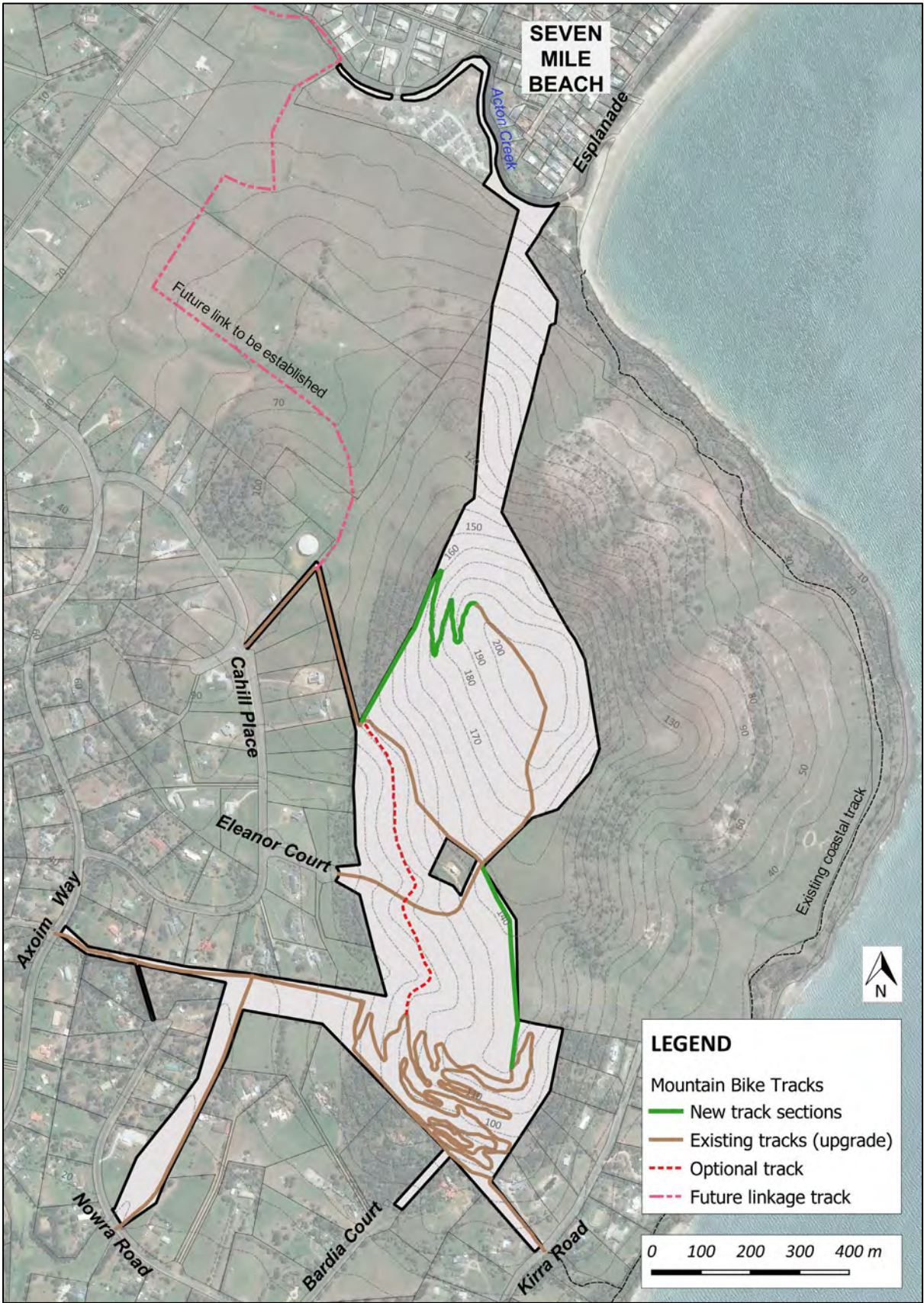


Figure 11 – Proposed mountain bike track network.

Walking Tracks

The walking track network will include all multi-use trails and new tracks **TK1, TK2, TK3, TK4** and **TK5** (refer to Appendix 3).

Trail TK 1 will provide a link for the carpark at the end of Seven Mile Beach around Acton Creek to Coastal Drive (Figure 10).

TD4 Action – Construct new track from Seven Mile Beach carpark to Coastal Drive.

Track TK2 and TK3 are short linkages to the existing coastal reserve tracks.

Track TK4 provides a link from Acton Creek to the summit via TK5. The track traverses the steep hillside until it reaches open grassland above the creek and includes connections via TK2 and TK3 to the coastal track. The track then follows fence lines up to track TK5 with two traverses to reduce the steepness on the route. The track will access two landing sites in prominent locations on the way up to thill where seating and interpretive signage may be provided (refer to Visitor Amenity Plan).

TD5 Action – Construct walking track from Seven Mile Beach carpark to summit with links to coastal track.

A further track route (optional track) has been proposed by the BBW Walking Club to avoid the last steep section of TK4 to the junction with TK5. The optional track is proposed to skirt across the slope and then follow the eastern fence line around to the access road (Figure 10). This route would provide a longer more gradual track to the summit, provide views out to the east and would be a more sheltered route ¹⁰. The track option would be within two or three of the launching zones designated by the hang gliders which may require tracks closure when paragliders and hang gliders are flying.

¹⁰ Email correspondence with M. Hawkins, BBW Walking Club, September 2020.

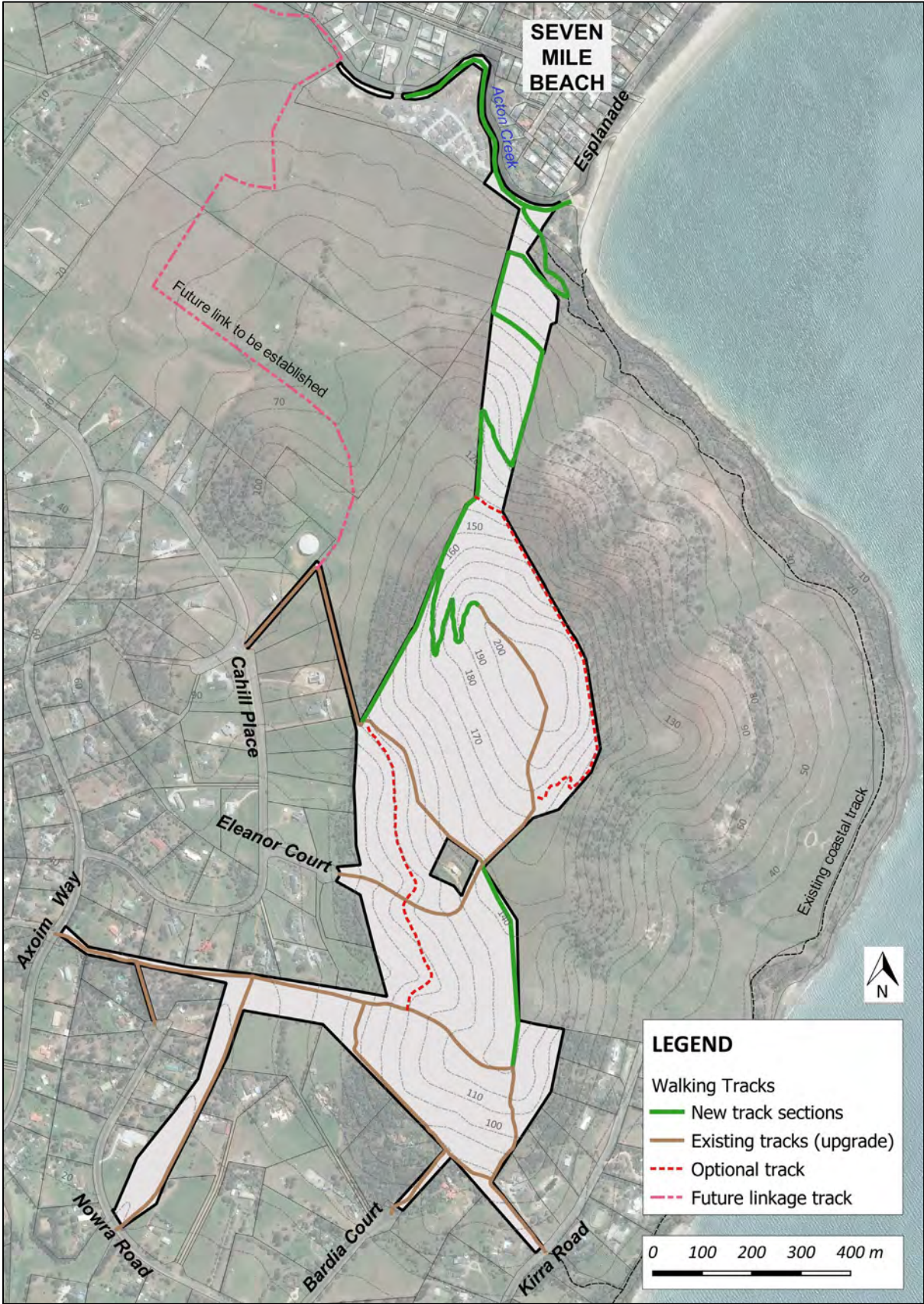


Figure 12 – Proposed walking track network.

4.5 Hang gliding and paragliding

Single Hill provides valuable flying site for hang gliders and paragliding and has been utilised by the Tasmanian Hang gliders and Paragliding Association (THPA) since 2006.

The site is considered to be one of the best locations for these sports in the State as the multifaceted topography of the hill provides a large number of wind conditions that provide suitable flying conditions at all times of the year. Single Hill provides a very scenic location to fly with the spectacular views across the Frederick Henry bay and beyond and its easy access and proximity to the Greater Hobart Area add further to its appeal (THPA submission, 2020).

The TPHA currently uses the hill for flying under agreement with the CCC and in compliance with Hobart Airports airspace regulations.

The handover of the reserve to the Council provides an opportunity to formalise the use of the hill for flying. Representatives of TPHA met with the Council and consultant to outline their vision for use of the hill. This included the formalisation of up to 4 sites on the hill to allow improved launching and landing sites in four different directions. The locations of proposed landing sites are indicated in Figure 12. They include 3 sites on the northern and eastern side of Single Hill and a fourth site on the eastern side of Nowra Reserve. The use of these sites all requires the pruning of vegetation within the launching direction to minimise turbulence created by the vegetation and improve safety¹¹.

The vegetation management at site 1, 3 and 4 involves the removal of several dead trees (all small trees with no hollows) and the pruning of some prickly box trees to reduce their height. This action represents a minor impact on the natural values of the site and will provide for the safe use of the reserve for hang gliding and paragliding. The required vegetation clearance at site 2 involves the removal of several blue gums within the reserve and multiple trees on the adjoining private land. The impact on important natural values of this site is considered to be higher and has the potential to leave a scar that will be widely visible to users of the coastal track. As such this vegetation clearance at this site is not recommended without further assessment and community consultation.

HG1 Action – Prune large shrubs and remove dead trees at launching sites 1, 3 and 4 to allow for safe hang gliding and paragliding.

HG2 Action – Undertake detail assessment of impacts of development of launching site 2 and undertake community consultation.

Other potential impacts of access by TPHA members to the hill include vehicle access, spread of weeds and the potential impacts on walkers utilising northern tracks.

The main issue with vehicle use on the hill is the risk of spreading serrated tussock and horehound seed around the site and to other areas off site (refer to WM3, WM5 and WM7). Vehicle access and parking at proposed site 4 provides a higher risk as there are significant infestations of both these weeds in this area.

¹¹ Pers comm TPHA,

**HG3 Action – Restrict vehicle access to launching site 4 until all weeds are controlled along the access track and within a designated parking area (WM5).
Parking area not to impact on the tracks in Nowra Reserve.**

The track network plan identified an alternative track option to reach the summit from the northern face by following the hillside and reserve boundary fence around the eastern side of the hill (Figure 12). This track option provides a scenic, sheltered route to the hilltop that follows a lower gradient. The route does however pass in front of proposed launching sites 1, 2 and 3 and as such impacts of gliders use in track use will need to be investigated before this track could be established.

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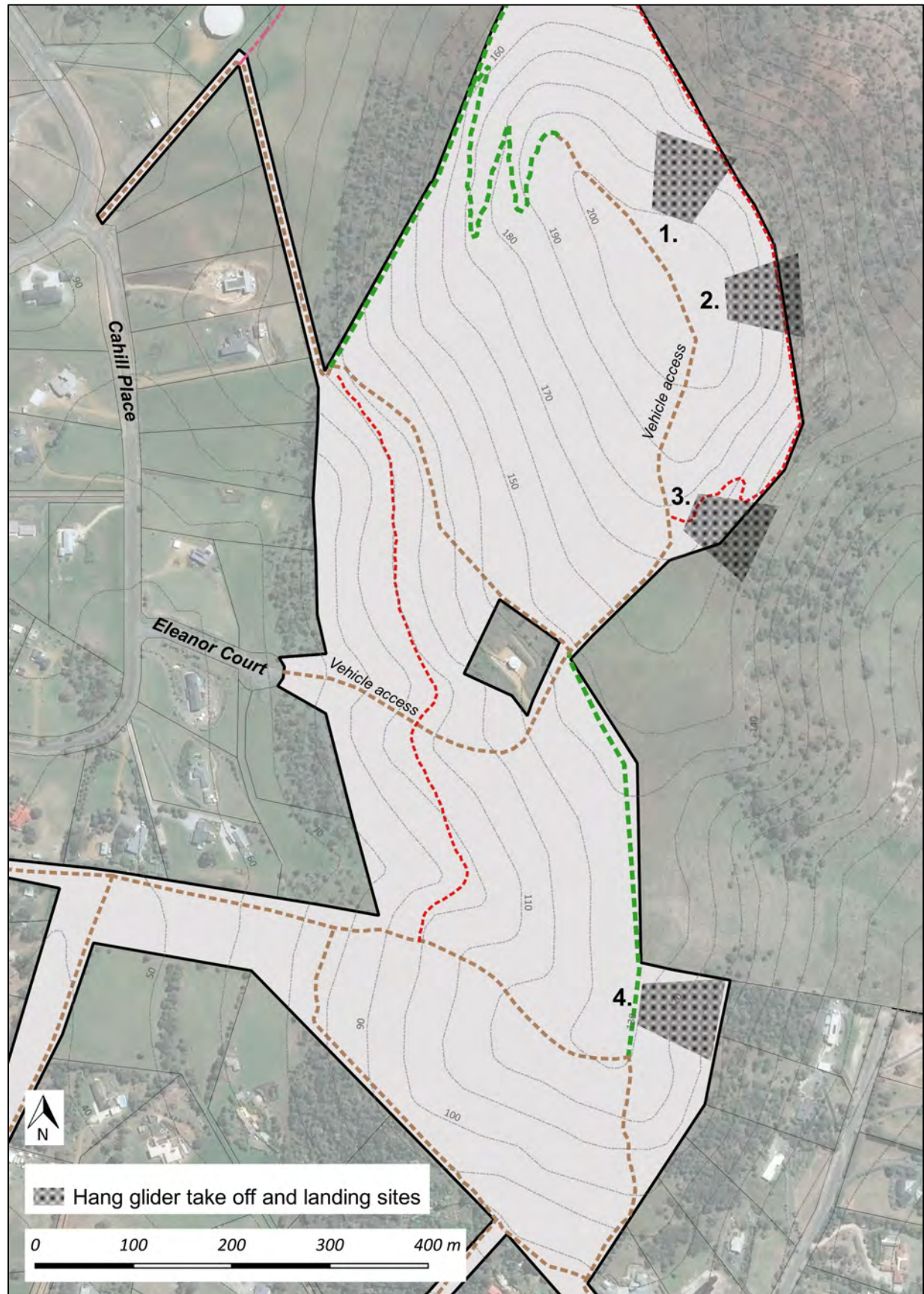


Figure 13 – Proposed location of hang glider and paraglider launching and landing sites.

4.6 Entrance upgrades, signage and infrastructure

Existing entries at either end of reserve at its threshold to the coastal trail were determined to be key access points to the expanded network; particularly as pivot points to the broader coast to hilltop loop. Concept Entrance Landscape Plans were requested for these entries, located at Seven Mile Beach and Roches Beach (Kirra Rd). It is recommended that these entries be upgraded as formal trailheads into the reserve; incorporating gathering space for groups, interpretive elements and broad trail network maps.

Parking at Seven Mile Beach entry has recently been extended and formalised. Kirra Road entry parking was discussed in the *2018-2022 Acton Trails and Reserves RAP* (Tasflora 2018) with local residents noting opportunities to establish parking along road reserve adjacent to entry. The 2018 RAP (Tasflora 2018) suggested a review of actual vehicular activity at this entry during 2022 once Single Hill Reserve was opened and in regular use. It is noted that adequate parking is provided at nearby Roches Beach Yacht Club with a direct trail link to Kirra Rd entry; an upgrade of signage at Roches Beach is advised to illustrate new reserve trail network and Single Hill loop opportunities.

Other entries into the reserve require varying levels of attention from separate pedestrian access points to stormwater runoff mitigation measures (WSUD); refer to Visitor Amenity Plan for specific entry notes and their locations.

Adequate signage was regularly requested throughout community consultation, both in displaying the reserve's trail network for visitor orientation and for communicating reserve usage guidelines. It is intended that each entry will have, at a minimum, a small reserve trail map and usage guidelines, including signage enforcing collection of dog droppings to avoid impacting amenity and natural values.

Multiple submissions were made requesting scenic lookouts along with seating and interpretation of the reserve's flora, fauna and cultural features. The reserve's panoramic vantages and bushland fringes offer opportunities for both landscape scale and focussed story telling. Single Hill Reserve hosts a broad range of natural values and holds a rich cultural value for the Mumirimina people which requires thoughtful preparation for communication. As such, development of a scaled thematic interpretation strategy is recommended.

Strategy 1.6 and 1.7 of *Clarence Council's Cultural History Plan 2018-2023* outlines considerations for interpretation beyond 'static signs', including incorporation with other elements such as seating, their communication format and site-specific content. The Visitor Amenity Plan displays indicative locations for a series of sculptural interpretation elements; the brief of which would be further defined as part of the suggested thematic interpretation study in alignment with the *CCC Public Art Policy (2013)*.

EI1 Action – Upgrade reserves entrances at Seven Mile Beach and at Roches Beach as per Entrance Landscape Plans.

EI2 Action – Install signage at location indicated in the Visitor Amenity Plan and as per the interpretation notes.

EI3 Action – Install seating/landing sites on hilltop and northern face of Single Hill as indicated in the Visitor Amenity Plan.

Infrastructure development

The community consultation associated with the RAP development provided a well-supported recommendation that minimal development of infrastructure should occur in the reserve and it should be 'left in natural state'.

There were several representations made to install seating or viewing platforms in strategic locations with the reserve and some support for picnic areas and shelters.

Access to summit from Seven Mile Beach to be provided for walkers only (Refer to Section 4.4). Due to steep nature of the climb up the northern slope the development of landing areas at intervals up the slope where views are afforded has been suggested¹². The landings would provide destination points for those walkers that do not want to walk to summit. Seating and interpretive signage may be incorporated into landings.

Suggested landings sites are indicated in the Visitor Amenity Plan

EI4 Action – All structures and activities associated with Single Hill RAP must comply with Airspace Protection requirements for the Hobart Airport.

¹² Pers comm M. Hawkins, BBW Walking Club, Sept 2020.

4.6.1 Single Hill Visitor Amenity Plan

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Key:

- 1 Develop Main Northern Trailhead - trail map with reserve use guide. Refer to Trailhead 1 concept design.
- 2 Develop Main Southern Trailhead - trail map with reserve use guide. Refer to Trailhead 2 concept design.
- 3 Cahill Place Entry (minor) small trail map recommended with reserve use guide symbols.
- 4 Eleanor Court Entry (minor) small trail map recommended with reserve use guide symbols. New pedestrian gate required to left of vehicle gates.
- 5 Axiom Way Entry (minor) small trail map recommended with reserve use guide symbols.
- 6 Nowra Road Entry (minor) small trail map recommended with reserve use guide symbols. Opportunity for WSUD rockspall lined open drain and endemic reed planting to slow peak flow.
- 7 Bardia Court Entry (minor) small trail map recommended with reserve use guide symbols. Recommendation to recreate deteriorated cutoff drains along with opportunity for WSUD rockspall lining and endemic reed planting to slow peak flow.
- 8 Southern connection link from Roches Beach / Seven Mile Coastal trail. Directional signs to be upgraded to reflect new trail network and broader loop opportunity. Preferred link to Main Southern Trailhead off Kirra Road due to minimal road verge use.
- 9 Kirra Road end connection link to Roches Beach / Seven Mile Coastal trail. Recommendation to direct main Nowrah Hill reserve access from coast via entry labelled no. 8 to minimise need to use roadside verge.
- 10 Minor reserve entry off existing coast trail. Small trail map recommended with reserve use guide symbols.
- 11 Minor reserve entry off existing coast trail. Small trail map recommended with reserve use guide symbols.
- 12 Sculptural interpretation element. Five locations suggested to communicate targeted stories relating to specific viewpoints.
- 13 Existing service roads.
- 14 Shared use path network. Refer to Section 4.4 of RAP report for each user group extent.
- 15 Specific mountain bike trail network. Formalisation of existing trails.
- 16 Hang gliding launch areas. Wind direction dependent.

Single Hill Visitor Amenity Plan

Single Hill, Acton Park | Draft For Review

PREPARED FOR ENVIRO-DYNAMICS / CLARENCE CITY COUNCIL



inspiring
place



Date 5 / 10 / 2020
Scale 1:8000 @ A3

4.6.2 Single Hill Entrance Landscape Plans

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Northern
Trailhead

Trailhead Position

Scale 1:20000

Key:

- ① Proposed trailhead compacted gravel surface. Broad width for gathering and passing before narrowing into trail to west.
- ② Trail map with reserve usage guide / symbols; placed to be visible from carpark and beach entry.
- ③ Proposed sculptural interpretative element location. Opportunity to integrate it with signage stone wall.
- ④ Stone seating wall with opportunity for integrated sculptural interpretative element.
- ⑤ Reserve endemic species planting beds. Opportunity to communicate reserve's flora in a microcosm and provide habitat for its fauna residents. Feature trees with midstorey shrubs and understorey grasses.
- ⑥ Existing carpark boundary boulders to be retained with further planting along western side.
- ⑦ Existing gravel carpark extension with recent edge planting belts.
- ⑧ Existing entry drive to private residence. Care taken to establish mid-height vegetation screen to assist with privacy.

Single Hill Northern Trailhead Concept Plan

Single Hill, Acton Park | Draft For Review

PREPARED FOR ENVIRO-DYNAMICS / CLARENCE CITY COUNCIL



inspiring
place



NORTH
Date 2 / 10 / 2020
Scale 1:100 @ A3



Trailhead Position Scale 1:20000

Key:

- ① Proposed trailhead compacted gravel surface. Broad width for gathering and passing before joining vehicle trail. Extension to road verge.
- ② Trail map with reserve usage guide / symbols; placed to be visible from carpark and beach entry.
- ③ Proposed sculptural interpretative element location. Opportunity to integrate it with signage stone wall.
- ④ Stone seating wall with opportunity for integrated sculptural interpretative element.
- ⑤ Reserve endemic species planting beds. Opportunity to communicate reserve's flora in a microcosm and provide habitat for its fauna residents. Feature trees with midstorey shrubs and understorey grasses.
- ⑥ Existing reserve boundary boulders to be retained.
- ⑦ Existing vehicle access chain replaced with 2 x removable bollards similar to Cahill Place entry. Allows safe passage for mountain bikes as raised by community in Acton Trails and Reserves RAP 2018.
- ⑧ Service vehicle entry pad upgraded with hardened / compacted base and extended to road verge. Raised drainage bars recommended at regular intervals to direct runoff to vegetation beds.

Single Hill Southern Trailhead Concept Plan

Single Hill, Acton Park | Draft For Review

PREPARED FOR ENVIRO-DYNAMICS / CLARENCE CITY COUNCIL



inspiring
place



Date 2 / 10 / 2020
Scale 1:100 @ A3

4.7 Community Involvement

There are well established and active community group in the Acton and Seven Mile Beach communities. The Acton Landcare Group and the Seven Mile Beach Coastcare Group undertake revegetation, weed control and maintenance works in many of the linear bushland and coastal reserve in the area and have expressed a desire to be involved with projects within the reserve including revegetation.

C11 Action – Council to support local care groups with revegetation and maintenance projects.
--

5 Review of Reserve Activity Plan

The Single Hill Bushland Reserve Activity Plan will be reviewed at the end of the 10-year period (2030). To maintain currency of the recommendations and implementation plan, a review and update involving the key stakeholders will be carried out after five years (2025).

Review the management of remnant vegetation on an ongoing basis in terms of promoting regeneration and recruitment in the reserve as per results of VCA monitoring.

Ongoing monitoring and maintenance of works e.g. weed control and trail maintenance outlined in the implementation plan should be undertaken by the responsible organisation. Weed management priorities may need to be updated to incorporate new information, such as new weed incursions. Photo point sites may be established to monitor weed management and vegetation rehabilitation.

R1 Action - Review the recommendations and implementation plan after 5 years (2025) and undertake complete review of the RAP in 2030

6 Implementation plan

ACTION #	ACTION	TIMING	RESPONSIBILITY	PRIORITY
VEGETATION MANAGEMENT				
VM1	Formalise mountain bike tracks within the Nowra bushland to limit impact on the native vegetation and close informal trails.	2021	CCC	High
VM2	Undertake follow-up VCA assessments in bushland remnants every 2-3 years to determine if vegetation condition is improving. Revise vegetation management action as appropriate based on results of VCA	Spring 2022, 2025, 2028	Ecological Consultant	High
VM3	Fence off a trial regeneration area within the blue gum woodland on Single Hill. Undertake small low intensity ecological burn within fenced off area to stimulate regeneration and monitor results using VCA process.	2021/22	Contractor	High
VM4	CCC and local care groups to undertake revegetation projects within the reserve with funding assistance through current funding avenues.	2020 - 2025	CCC, ALCG, SMB CG, Contractor	Medium
VM5	Undertake planting of morrisbyi gum in conjunction with recovery project.	2021 - 2023	CCC, ALCG, SMB CG, Enviro-dynamics	Medium
VM6	Develop a Single Hill Bushland Reserve Fire Hazard Management Plan. Use of ecological burns to assist with regeneration of remnant vegetation to be included in plan.	2021-2022	CCC, consultant	High
WEED MANAGEMENT				
WM1	Control serrated tussock and african boxthorn in Single Hill Reserve as per agreed schedule.	Spring 2020	CCC, contractor	High
WM2	Conduct follow-up control of serrated tussock and african boxthorn as per agreed schedule	2021-2030	CCC, contractor	High

Single Hill Bushland Reserve Activity Plan 2020–2030

ACTION #	ACTION	TIMING	RESPONSIBILITY	PRIORITY
WM3	Maintain track edges weed free to prevent spread of seed other areas. Control all weeds along proposed track corridors prior to track construction	2020-2030	CCC, contractor	High
WM4	Control boneseed plants near Seven Mile entrance and adjacent to coastal reserve.	2020-2021	CCC, contractor	High
WM5	Control serrated tussock and horehound in bushland in Nowra reserve	2021-2025	CCC, contractor	Medium
WM6	Liaise with TasWater to control serrated tussock around water tank in Single Hill Reserve	2021-2025	CCC	Medium
WM7	Provide vehicle hygiene protocol to all agencies that access hill top.	2021-2025	CCC	Medium
WM8	Install signage at gate at end of Eleanor Court regarding risk of spreading serrated tussock	2020-2021	CCC	High
DOMESTIC ANIMAL MANAGEMENT				
DM1	Include Single Hill Reserve in the Clarence Dog Policy review. Recommend that 'Dogs on lead' policy be applied to reserve.	2020-2021	CCC	High
DM2	DM2 Action – Install signage at entrances for 'Dogs on lead' and picking up dog poo	2021-2025	CCC	Medium
DM3	Promote requirements of the <i>Cat Management Act 2012</i> including de-sexing and microchipping. Promote cats inside at night	2021-2030	CCC	Medium
TRACK DEVELOPMENT and MANAGEMENT				
TD1	Upgrade and develop multi-user tracks to provide linkages from Nowra Reserve to Single Hill and Cahill Place.	2021-2025	CCC, contractor	Medium

ACTION #	ACTION	TIMING	RESPONSIBILITY	PRIORITY
TD2 (VM1)	Formalise mountain bike tracks within Nowra Reserve	2020-2021	CCC, contractor	High
TD3	Construct new track from Cahill Place junction to Single Hill summit. Minimise impacts on native vegetation.	2020-2021	CCC, contractor	High
TD4	Construct new track from Seven Mile Beach carpark to Coastal Drive	2020-2021	CCC, contractor	High
TD5	Construct walking track from Seven Mile Beach carpark to summit with links to coastal track.	2020-2022	CCC, contractor	High
HANG GLIDING and PARAGLIDING				
HG1	Prune large shrubs and remove dead trees at launching sites 1, 3 and 4 to allow for safe hang gliding and paragliding	2020-2022	CCC, THPA	High
HG2	Undertake detail assessment of impacts of development of launching site 2 and undertake community consultation	2020-2030	CCC, THPA	Low
HG3	Restrict vehicle access to launching site 4 until all weeds are controlled along the access track and within a designated parking area (WM5). Parking area not to impact on the tracks in Nowra Reserve	2020-2022	CCC, THPA	High
ENTRANCE UPGRADES, INFRASTRUCTURE and SIGNAGE				
EI1	Upgrade reserves entrances at end of Seven Mile Beach and at Roches Beach as per Entrance Landscape Plans	2021-2025	CCC	Medium
EI2	Install signage at location indicated in the Visitor Amenity Plan and as per the interpretation notes	2021-2030	CCC	Med/Low

Single Hill Bushland Reserve Activity Plan 2020–2030

ACTION #	ACTION	TIMING	RESPONSIBILITY	PRIORITY
EI3	Install seating/landing sites on hilltop and northern face of Single Hill as indicated in the Visitor Amenity Plan	2021-2025	CCC	Medium
EI4	All structures and activities associated with Single Hill RAP must comply with Airspace Protection requirements for the Hobart Airport.	2021-2030	CCC, Hobart Airport	High
COMMUNITY INVOLVEMENT				
C1	Support the local care groups with revegetation and maintenance projects	2021-2030	CCC	High
REVIEW & EVALUATION				
R1	Review the recommendations and implementation plan after 5 years (2025) and undertake complete review of the RAP in 2030	2025 and 2030	CCC, Consultant	Med/Low

Timing of priorities

High: 1 - 2 years

Medium: 2 - 5 years

Low: 5 – 10 years

7 References

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- Inspiring Place (2012). *Tangara Trail Network Management Plan 2012-2017*. Prepared for Clarence City Council.
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- Tasflora (2018). *Acton Trails and Reserves Reserve Activity Plan 2018 – 2022*.
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Appendix 1 - Description of Vegetation Communities occurring in the Reserves

DVG - *Eucalyptus viminalis* grassy woodland and forest

DVG occurs as two small patches on lower slopes of the western part of Single Hill with an outlying patch in the north western corner adjoining Cahill Place. This vegetation type is characterised by sparse regrowth white gum (*Eucalyptus viminalis*) over a tall shrub layer dominated by prickly box (*Bursaria spinosa*) and sheoak (*Allocasuarina* sp.) while the low shrub layer is sparse and comprised of native cranberry (*Astroloma humifusum*), creeping bossia (*Bossiaea prostrata*) and dwarf riceflower (*Pimelea humilis*). The understory includes sagg (*Lomandra longifolia*) and native grasses including wallaby grass (*Rytidosperma* sp.), speargrass (*Austrostipa* sp.), tussockgrass (*Poa sieberi*) and kangaroo grass (*Themeda triandra*). Herbs are frequent with woodsorrel (*Oxalis perennans*), being common.

DGL - *Eucalyptus globulus* dry forest and woodland

DGL occurs mainly on the mid and upper slopes in the southwestern, southern and eastern sides of Single Hill. This vegetation type has a dominant tree layer of mature blue gums is (*E. globulus*), some tall to about 25 m in height over a tall shrub layer dominated by prickly box (*B. spinosa*). The understory is generally dominated by tussock grass (*Poa* sp.) with spear grass (*Austrostipa* sp.), wallaby grass (*Rytidosperma* sp.) and velvet tussock grass (*Poa rodwayi*) of a lower density. There are scattered low shrubs such as native cranberry (*Astroloma humifusum*), creeping bossia (*Bossiaea prostrata*) and dwarf riceflower (*Pimelea humilis*). The graminoid layer consists of variable sword-sedge (*Lepidosperma laterale*) and sagg (*L. longifolia*). Common herb species include kidney weed (*Dichondra repens*), native geranium (*Geranium solandri*) and bluebell (*Wahlenbergia* sp.). On the moister southern and south eastern slopes, blackwood (*Acacia melanoxylon*) is a frequent shrub and the ground cover is dominated by common tussock grass (*Poa labillardierei*).

DAS - *Eucalyptus amygdalina* forest and woodland on sandstone

A small area of remnant of DAS occurs in the north western portion of Nowra Reserve, along the track corridors linking to Axiom Way and Nowra Road. The canopy is dominated by black peppermint (*E. amygdalina*), with isolated white gum (*E. viminalis*) and black gum (*E. ovata*) trees also recorded. The tall shrub layer contains silver wattle (*Acacia dealbata*), native cherry (*Exocarpos cupressiformis*), native hop bush (*Dodonaea viscosa*), showy bossia (*Bossia cinerea*) and spreading wattle (*Acacia genistifolia*). The understorey contains sagg (*Lomandra longifolia*), narrow-leaved flax lily (*Dianella revoluta*), slender rice flower (*Pimelea linifolia*), (*Acacia genistifolia*), bracken (*Pteridium esculentum*), showy bossiaea (*Bossiaea cinerea*), guinea flower (*Hibbertia* sp.) and sand sword sedge (*Lepidosperma concavum*). The grass layer contains wallaby-grasses (*Rytidosperma* sp.) and speargrass (*Austrostipa* sp.), interspersed with exotic grasses and herbs which are of higher density around the margins of the community. Several introduced species were recorded such as

mainland wattles (*Acacia* sp.), a monterey pine sapling (*Pinus radiata*) and blackberry (*Rubus fruticosus*).

NBA - *Bursaria* – *Acacia* woodland and scrub

This community occurs in the Nowra reserve and on the western and north face of Single Hill (Figure 3 and Figure 4). The community is formed following the death or decline of the eucalypt layer (previously white gum forest) due to drying conditions, tree removal and overgrazing of the understorey. The remnants have a dominant tall shrub layer of prickly box (*B. spinosa*) with scattered broadleaf hopbush (*Dodonaea viscosa* subsp. *viscosa*), black wattle (*A. mearnsii*), silver wattle (*A. dealbata*) and drooping sheoak (*Allocasuarina verticillata*). The ground layer of the bursaria remnants varies in condition. The Nowra bushland has a degraded understorey on the hilltop an western face due to overgrazing by native mammals, construction of bike tracks and the spread of weed species and a more intact and diverse understorey on the lower south facing slope. Native species recorded include tussockgrass (*Poa* sp.), wallabygrass (*Rytidosperma* sp.), narrowleaf new-holland-daisy (*Vittadinia muelleri*), variable plantain (*Plantago varia*), wood sorrel (*Oxalis perennans*) and stonecrop (*Crassula* sp.). The remnants on Single Hill have a more intact grass layer with tussockgrass, speargrass and wallabygrass more common.

GCL - Lowland grassland complex

GCL covers large areas on the lower slopes on the eastern and north eastern parts of Single Hill. This vegetation type is prominent in areas cleared for pastoral activity and is characterised by grass covers dominated by *wallaby grasses* (*Rytidosperma* spp.), *spear grasses* (*Austrostipa* spp.) and common wheat grass (*Anthosachne scabra*). The main graminoid species is sagg (*Lomandra longifolia*) while exotic herbaceous weeds are also a prominent component which would reflect past grazing influences. Better examples support pussy tails (*Ptilotus spathulatus*), narrowleaf new-holland-daisy (*Vittadinia muelleri*) as well as significant populations of knotty spear grass (*Austrostipa nodosa*) and rough speargrass (*A. scabra*) (previously listed as rare prior to delisting).

Native grassland that has never been ploughed but is derived from woodland tends to be more diverse and likely supports significant species than native grassland that is derived from improved pasture where the natives have slowly out-competed the exotic pasture species due to their better adaption to drought.

ARS - Saline sedgeland / rushland

In the north, adjacent to Acton Creek, the proposed trail passes through an area of ARS occurring on partially tidal flats along the creek banks, which is bordered by Urban areas (FUR) and Agricultural land (FAG) to the north and south. This vegetation type is characterised by sea rush (*Juncus kraussii*), sharp clubsedge (*Schoenoplectus pungens*) and plants confined to creek margins that include creeping brooklime (*Samolus repens*),

angled lobelia (*Lobelia anceps*) and sea celery (*Apium prostratum*). On the sandy banks plants include coast tussock grass (*Poa poiformis*), knobby clubsedge (*Ficinia nodosa*) and shiny bogsedge (*Schoenus nitens*) were recorded. Localised to the margins of Acton creek is Lowland *Poa* grassland (GPL) where it integrates with ARS. Some plants in this vegetation community appear to show intermediate characters with coastal tussock grass (*Poa poiformis*), while other species include Australian salt grass (*Distichlis distichophylla*) and the large sedge (*Carex iynx*).

FAG - Agricultural land

FAG occupies the largest area of the immediate surrounds and includes recently cultivated land and some areas of productive and degraded pasture, the latter including some colonising native grasses, notably wallaby grasses (*Rytidosperma* spp.). Some of the developed agricultural land, notably in the south towards Roches Beach, has partially regenerated and been colonised by sagg (*L. longifolia*) and tussock grass including some dense infestations of serrated tussock.

Appendix 2 - Vegetation Condition Assessments

Site 1: <i>Bursaria</i> - <i>Acacia</i> woodland (NBA)						
Location	Nowra Bushland Reserve. Lower south-facing slope.					
Grid Reference	540735 E	5252206 N	Date	20-Oct-2020		
Area	10ha		Recorder	Nick Fitzgerald		
SITE CONDITION ATTRIBUTES						
Large Trees		Understorey Life Forms				
Number of Large Trees #/ha	20	Life Forms	No. species	Cover %	Present	Modified
Proportion Healthy Canopy	>70%	Immature canopy tree	5	50	Y	N
Tree Canopy Cover		Tree (sub canopy) or large shrub	0	0	N	
Tree Canopy Cover (%)	15	Medium shrub/small shrub	0	0	N	
Proportion Healthy Canopy	>70 %	Prostrate and mat shrubs	2	1	Y	N
Lack of Weeds		Herbs	15	20	Y	N
Weed Cover (%)	10	Grasses	5	50	Y	
High Threat Weeds (%)	40	Large sedge/rush/sagg	1	<1	N	
Recruitment		Medium sedge/rush/sagg	0	0	N	
Adequate Canopy Recruitment	Yes	Tiny sedge/rush/sagg	2	<1	Y	N
Proportion of native woody plants with adequate recruitment (%)	100	Ground ferns	0	0	N	
Woody Species Diversity	High	Tree Ferns	0	0	-	
Organic litter (%)		Scrambler/Climber and Epiphytes	1	<1	-	
Litter Cover (%)	10	Mosses and Lichen	-	20	Y	N
Litter – native or non-native	Native					
Logs		% Benchmark life forms present	60%			
Length of Logs (m/ ha)	2					
Large logs present	Yes					
LANDSCAPE CONTEXT ATTRIBUTES						
Patch Size		Neighbourhood		Distance to Core Area		
Area of native vegetation continuous with assessment zone	>50 ha	% Native Vegetation within 100 m	100	Distance to Core Area >50 ha		Contiguous
Significantly disturbed	Yes	% Native Vegetation within 1 km	21	Core area significantly disturbed		Yes
		% Native Vegetation within 5 km	31			
FINAL VEGETATION CONDITION SCORE						
Site Condition Score		Landscape Context Score		TOTAL		
Large Trees	3/10	Patch Size	8/10	65/100		
Tree Canopy Cover	3/5	Neighbourhood	5/10			
Lack of Weeds	9/15	Distance to Core Area	4/5			

Understorey Summary	15/25	Landscape Context Score	17/25
Recruitment	10/10		
Organic Litter	5/5		
Logs	3/5		
Site Condition Total	48/75		

Site 2: <i>Eucalyptus globulus</i> dry forest (DGL) – inland facies						
Location	Single Hill. Upper southwest-facing slope.					
Grid Reference	540840 E	5252834 N	Date	20-Oct-2020		
Area	18ha		Recorder	Nick Fitzgerald		
SITE CONDITION ATTRIBUTES						
Large Trees		Understorey Life Forms				
Number of Large Trees #/ha	0	Life Forms	No. species	Cover %	Present	Modified
Proportion Healthy Canopy	N/A	Immature canopy tree	1	5	Y	N
Tree Canopy Cover		Tree (sub canopy) or large shrub	2	20	Y	N
Tree Canopy Cover (%)	25	Medium shrub/small shrub	1	<1	N	
Proportion Healthy Canopy	>70 %	Prostrate and mat shrubs	1	<1	Y	Y
Lack of Weeds		Herbs	12	25	Y	N
Weed Cover (%)	5	Grasses	5	35	Y	N
High Threat Weeds (%)	25	Large sedge/rush/sagg	1	<1	N	
Recruitment		Medium-small sedge/rush/sagg	3	1	Y	N
Adequate Canopy Recruitment	No	Ground ferns	1	<1	Y	N
Proportion of native woody plants with adequate recruitment (%)	50	Tree Ferns	0	0	-	
Woody Species Diversity	Low	Scrambler/Climber and Epiphytes	0	0	N	
Organic litter (%)		Mosses and Lichen	-	20	Y	N
Litter Cover (%)	30					
Litter – native or non-native	Native	% Benchmark life forms present	73%			
Logs						
Length of Logs (m/ ha)	76					
Large logs present	Yes					
LANDSCAPE CONTEXT ATTRIBUTES						
Patch Size		Neighbourhood		Distance to Core Area		
Area of native vegetation continuous with assessment zone	>50 ha	% Native Vegetation within 100 m	100	Distance to Core Area >50 ha	Contiguous	
Significantly disturbed	Yes	% Native Vegetation within 1 km	41	Core area significantly disturbed	Yes	
		% Native Vegetation within 5 km	31			

FINAL VEGETATION CONDITION SCORE				
Site Condition Score		Landscape Context Score		TOTAL
Large Trees	0/10	Patch Size	8/10	58/100
Tree Canopy Cover	5/5	Neighbourhood	6/10	
Lack of Weeds	9/15	Distance to Core Area	4/5	
Understorey Summary	15/25	Landscape Context Score	18/25	
Recruitment	3/10			
Organic Litter	3/5			
Logs	5/5			
Site Condition Total	40/75			

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Appendix 3 - Single Hill Bushland Reserve Report Card

DRAFT

THE DRAFT SINGLE HILL BUSHLAND RESERVE ACTIVITY PLAN RECOMMENDS:

- >> Construct narrow track from Cahill Place junction to summit
- >> Formalise mountain bikes tracks within Nowra Hill area
- >> Construct walking track from SMB carpark to summit with links to coastal track
- >> Fence off trial regeneration area within the blue gum woodland on top of hill
- >> Prune large shrubs at launching sites to allow for safe paragliding
- >> Undertake revegetation in degraded woodland and open areas
- >> Control serrated tussock and horehound weeds in the Reserve
- >> Develop a Single Hill Bushland Fire Hazard Management Plan
- >> Install signage at entrances for 'Dogs on lead' and picking up of doggie poo

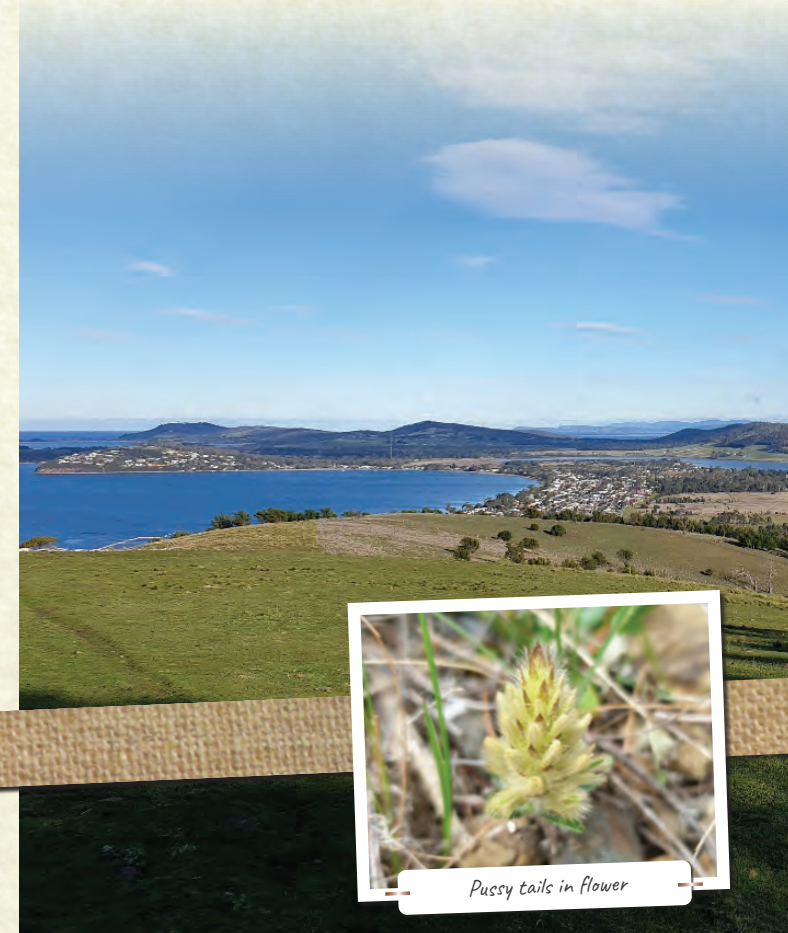


'Walk and Talk' down the north slope

What a stunning parcel of land that has been made available for our use. I'd love it to be kept as natural as possible

Local resident

SINGLE HILL BUSHLAND RESERVE REPORT CARD



Pussy tails in flower

STAY WITH US...

Council invites your comments on the draft Plan. The Plan will guide the community and Council as we work together to improve the management of the Reserves.

The draft plan can be viewed at www.yoursay.ccc.tas.gov.au

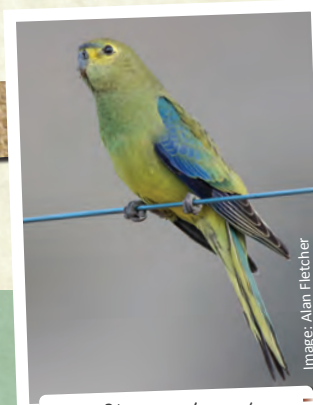
USE THE ONLINE FORM OR CONTACT
BY MONDAY 30 NOVEMBER 2020

Andy Welling 0400 151 205
andy.welling@enviro-dynamics.com.au

Phil Watson 03 6217 9713
pwatson@ccc.tas.gov.au



Commonly used for horse riding



Blue-winged parrot (Neophema chrysostoma)

Image: Alan Fletcher

Your Community and Council
working together to care
for our Reserves

In the winter of 2020, Clarence City Council asked the community about the Single Hill Bushland Reserve ... these are the results.



	EVALUATION				DESCRIPTION	COMMUNITY COMMENTS
	OUTSTANDING	VERY GOOD	PASS	CAN DO BETTER	SINGLE HILL BUSHLAND RESERVE	
LOCATION AND LANDSCAPE					Prominent hilltop with expansive 360-degree views across Storm Bay.	
CULTURAL HERITAGE					Mumirimina band of the Oyster Bay Nation' land for 10,000's of years. More recently part of a large pastoral property.	<i>Like to see interpretation signage on flora, fauna, aboriginal and historic values</i>
VEGETATION					Hill top has large remnant blue gum forest surrounded by a sea of degraded, over grazed exotic grasses.	<i>Leave the bush on the Cahill side untouched, it's a beautiful way to access the top</i>
ANIMALS AND BIRDS					Key regional habitat for many of our birds, furry animals and diverse range of insects including moths and butterflies.	<i>Valuable nesting sites for birds, particularly parrots</i>
ACCESS AND CONNECTIVITY					Multiple access points and excellent links to other reserves and townships.	<i>It's a fabulous link on the Tangara trail between Lauderdale Seven Mile, Acton, Sandford</i>
RECREATION AND USAGE					Widely used for walking, dog walking, horse riding and mountain biking. One of the state's premier paragliding spots.	
THREATS					Weeds, dieback, informal mountain bike tracks, erosion, overgrazing and rabbits.	

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



A stand of Blue Gums on Single Hill

Appendix 4 - Single Hill Track Network Plan

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Single Hill

Track Network Plan

PREPARED FOR:

CLARENCE CITY COUNCIL

OCTOBER 2020



For enquiries regarding this submission please contact;

David Mason

Director

Mtn. Trails Pty Ltd

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Web: mntntrails.com.au



Mtn. Trails
September 2020

Track Network Overview - Existing and Proposed





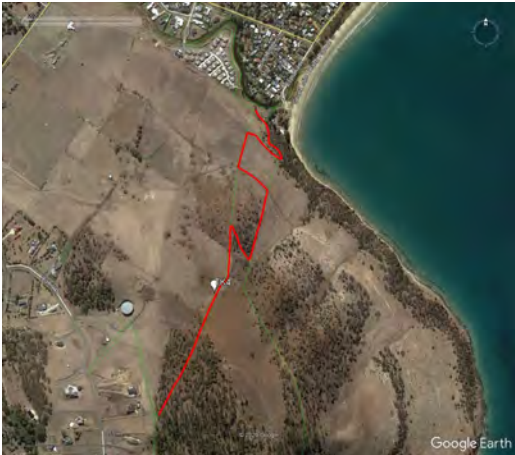
Track Network Overview - Existing Tracks to Upgrade






Track Network Overview – Proposed New Tracks


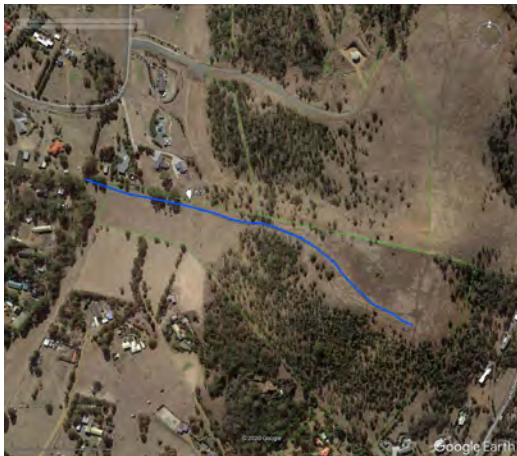




Track Number and Location	Track Status	Length	User Group	Notes	Priority	Cost Estimate	Construction Standard (Class as per AS2156)
TK1 	Existing (informal)	600m	Walkers MTB	Track route to follow Acton Creek from beach carpark to Coastal Drive within narrow POS. Higher ground suitable for track is very narrow in some sections and unsuitable for horses without entering tidal portion of creek.	Medium	\$18,000	3
TK2 and 3 	New	TK 2 - 115m TK 3 - 115m	Walkers MTB	Two short tracks utilising existing informal tracks to link from the Seven Mile Beach coastal track to the new Single Hill track. Medium benching required due to moderate cross slope.	Medium	\$4,600	3



Track Number and Location	Track Status	Length	User Group	Notes	Priority	Cost Estimate	Construction Standard (Class as per AS2156)
TK4 	New	1300m	<p>Walkers only.</p> <p>Sections of the track along the fence lines are steep and not suitable for mountain bikes climbing or horses (erosion) Uses incompatible with walkers.</p> <p>Section one requires heavy benching and track not suitable for horses and bikes.</p>	<p>Single Hill Track. Predominantly follows existing fence lines with minimal work required. Two sections to construct:</p> <p>Section one, 370m, climbs from the Acton Creek track and switches back to western boundary fence line. Some heavy benching required initially (60m) due to very steep cross slope then medium benching for remainder.</p> <p>Section two, 130m, links the eastern boundary fence back to the western boundary fence to avoid steepest sections of fence line. Ends at a high vantage point overlooking Seven Mile Beach with good views.</p> <p>The track then follows the western boundary fence to link with the Cahill Place track node.</p> <p>Way marking to define alignment.</p> <p>Sections of the track along the fence lines are steep and not suitable for mountain bike climbing or descending due to high speeds and incompatibility with walkers</p>	High	\$15,000	3



Track Number and Location	Track Status	Length	User Group	Notes	Priority	Cost Estimate	Construction Standard (Class as per AS2156)
TK 5, Summit Track 	New	580m	Walkers MTB Medium/heavy benched track with turns not compatible with horse use.	<p>New shared use (walker and MTB only), dual directional track to link to the summit of Single Hill.</p> <p>Creates loop options to summit from Cahill Place or Nowra Reserve for walkers and MTB riders.</p> <p>Medium benching with some heavy benching sections. Four climbing turns. Third one will require stone walling due to cross slope and limited ability to bench due to bed rock. Section between turn two and three utilises informal MTB track alignment and benching.</p> <p>Alignment is to keep outside remnant Eucalyptus globulus forest.</p> <p>Recent informal MTB track development occurring in the area.</p>	High	\$23,200	3



<p>TK6</p> 	New	660m	Walkers MTB	<p>New aspirational 'lower level' track to link from The Wallaby Track / Nowra Road Track to the Cahill Place track node without need to climb to ridgeline or summit.</p> <p>Contour track with minimal elevation gain/loss.</p> <p>Medium benching with 20m of surface hardening at the two open gully crossings.</p> <p>Northern segment makes use of an old informal track that has good alignment but some drainage issues (see notes in R2).</p> <p>Requires removal of old boundary fences.</p>	Low	\$19,800	3
<p>TK 7</p> 	New	485m	Walkers MTB Horses	<p>New link from The Wallaby Track / Nowra Road track node to Single Hill.</p> <p>Low benching with minimal cross slope.</p> <p>Recommend that horses ride on the grass area adjacent the new track.</p>	High	\$10,550	3

<p>TK 8, Cahill Place Link.</p> 	Existing hardened track	545m	Walkers MTB Horse Riders	<p>Existing hardened track to be maintained.</p> <p>Hardened with gravel, so recommend that horses ride on the grass adjacent the track.</p> <p>Complete track to link with the Cahill Place track node (approx. 30m).</p> <p>Improve drainage along existing track.</p>	High	\$2,500	3
<p>TK 9, Nowra Road Link.</p> 	Existing (informal along old vehicle track)	620m	Walkers MTB Horse Riders	<p>Existing track (informal in places). Steeper section requires drainage (up to 5 water bars) to prevent further erosion.</p> <p>Way marking to define alignment.</p>	High	\$1,500	3






<p>TK 10, Wallaby Track</p> 	Existing track network	3300m	MTB only	<p>Existing informal MTB track.</p> <p>Historically ridden in both directions depending on user access point. Recommend to keep as MTB only and dual directional.</p> <p>Some sections require benching to widen and better define alignment (can be achieved by hand over short sections). If surfacing works are to occur, the track will need to be widened with a mini-excavator to facilitate machine access for delivery of gravel and a 'tray' formed to hold/retain the gravel. (potential to change the 'feel' of the existing track).</p> <p>Way marking to define alignment and rehabilitation / consolidation of other informal tracks in the area.</p>	High	\$38,000 (including surfacing works)	3 / Intermediate (IMBA Blue Square)
<p>TK 11, Nowra Rd /Bardia Court Link</p> 	Existing (informal)	340m	Walkers MTB Horse Riders	<p>Links Nowra Rd and Bardia Court tracks.</p> <p>Requires drainage works to prevent surface saturation.</p>	High	\$3,200	3

<p>TK 12, Bardia Court Track</p> 	Existing	150m	Walkers MTB Horse Riders	Requires drainage works to prevent surface saturation.	High	\$2,300	3
<p>TK 13, Kirra Rd / Bardia Court Link</p> 	Existing	285m	Walkers MTB Horse Riders	Links Kirra Rd and Bardia Court tracks. Track generally in good condition, some drainage works required approaching the Bardia Court track.	High	\$4,500	3






<p>R1, Single Hill Summit Road</p> 	Existing	960m	<p>Walkers</p> <p>MTB</p> <p>Horse Riders</p>	<p>Main access road from Cahill Place to Single Hill summit. Steep in sections but suitable for all users.</p> <p>Drainage issues adjacent new tank. Top drain needs reinstating.</p> <p>Provides summit loop options for walkers and MTB and horse riders.</p>	N/A	\$1,100	N/A
<p>R2</p> 	Existing (old vehicle track)	390m	<p>Walkers</p> <p>MTB</p> <p>Horse Riders</p>	<p>Links the Single Hill Summit Road to the Cahill Place track node.</p> <p>Significant drainage issues on lower half. Requires substantial civil work with top drain / table drain construction and culverts under road. This work will impact the northern section of TK6 which will require surface hardening where water is exiting from culverts above.</p>	High	<p>\$8,000</p> <p>(not including cost of civil works)</p>	N/A

R3 	Existing (old vehicle track)	215m	Walkers MTB Horse Riders	No value to network as it ends at the new tank perimeter fence.	N/A	N/A	N/A
R4 	Existing	390m	Walkers MTB Horse Riders	Vehicle access to Nowra Hill from Kirra Road.	N/A	N/A	N/A

IMBA Trail Difficulty Rating System - User Guide

	Very easy  White Circle	Easiest  Green Circle	More Difficult  Blue Square	Very Difficult  Single Black Diamond	Extremely Difficult  Double Black Diamond
Description	Likely to be a fire road or wide single track with a gentle gradient, smooth surface and free of obstacles. Frequent encounters are likely with other cyclists, walkers, runners and horse riders.	Likely to be a combination of fire road or wide single track with a gentle gradient, smooth surface and relatively free of unavoidable obstacles. Short sections may exceed these criteria. Frequent encounters are likely with walkers, runners, horse riders and other cyclists.	Likely to be a single trail with moderate gradients, variable surface and obstacles.	Likely to be a challenging single trail with steep gradients, variable surface and many obstacles.	Extremely difficult trails will incorporate very steep gradients, highly variable surface and unavoidable, severe obstacles.
Suitable for	Beginner/ novice cyclists. Basic bike skills required. Suitable for most bikes.	Beginner/ novice mountain bikers. Basic mountain bike skills required. Suitable for off-road bikes.	Skilled mountain bikers. Suitable for mountain bikes.	Experienced mountain bikers with good skills. Suitable for better quality mountain bikes.	Highly experienced mountain bikers with excellent skills. Suitable for quality mountain bikes.
Fitness Level	Most people in good health.	Most people in good health.	A good standard of fitness.	Higher level of fitness.	Higher level of fitness.
Trail Width	Two riders can ride side by side.	Shoulder width or greater.	Handlebar width or greater.	Can be less than handlebar width.	Can be less than handlebar width.
Trail Surface and obstacles	Hardened with no challenging features on the trail.	Mostly firm and stable. Trail may have obstacles such as logs, roots and rocks.	Possible sections of rocky or loose tread. Trail will have obstacles such as logs, roots and rocks.	Variable and challenging. Unavoidable obstacles such as logs, roots, rocks drop-offs or constructed obstacles.	Widely variable and unpredictable. Expect large, committing and unavoidable obstacles.
Trail Gradient	Climbs and descents are mostly shallow.	Climbs and descents are mostly shallow., but trail may include some moderately steep sections.	Mostly moderate gradients but may include steep sections.	Contains steeper descents or climbs.	Expect prolonged steep, loose and rocky descents or climbs.

IMBA Trail Difficulty Rating System - Land Managers Guide

	Very easy  White Circle	Easiest  Green Circle	More Difficult  Blue Square	Very Difficult  Single Black Diamond	Extremely Difficult  Double Black Diamond
Description	Likely to be a fire road or wide single track with a gentle gradient, smooth surface and free of obstacles. Frequent encounters are likely with other cyclists, walkers, runners and horse riders.	Likely to be a combination of fire road or wide single track with a gentle gradient, smooth surface and relatively free of obstacles. Short sections may exceed these criteria. Frequent encounters are likely with other cyclists, walkers, runners and horse riders.	Likely to be a single trail with moderate gradients, variable surface and obstacles. Dual use or preferred use Optional lines desirable	Likely to be a challenging single trail with steep gradients, variable surface and many obstacles. Single use and direction Optional lines XC, DH or trials	Extremely difficult trails will incorporate very steep gradients, highly variable surface and unavoidable, severe obstacles. Single use and direction Optional lines XC, DH or trials
Trail Width	2100mm plus or minus 900mm	900mm plus or minus 300mm for tread or bridges.	600mm plus or minus 300mm for tread or bridges.	300mm plus or minus 150mm for tread and bridges. Structures can vary.	150mm plus or minus 100mm for tread or bridges. Structures can vary.
Trail Surface	Hardened or smooth.	Mostly firm and stable.	Possible sections of rocky or loose tread.	Variable and challenging.	Widely variable and unpredictable.
Average Trail Grade	Climbs and descents are mostly shallow. Less than 5% average.	Climbs and descents are mostly shallow, but may include some moderately steep sections. 7% or less average.	Mostly moderate gradients but may include steep sections. 10% or less average.	Contains steeper descents or climbs. 20% or less average.	Expect prolonged steep, loose and rocky descents or climbs. 20% or greater average
Maximum Trail Grade	Max 10%	Max 15%	Max 20% or greater	Max 20% or greater	Max 40% or greater
Level of Trail Exposure	Firm and level fall zone to either side of trail corridor	Exposure to either side of trail corridor includes downward slopes of up to 10%	Exposure to either side of trail corridor includes downward slopes of up to 20%	Exposure to either side of trail corridor includes steep downward slopes or freefall	Exposure to either side of trail corridor includes steep downward slopes or freefall
Natural Obstacles and Technical Trail Features (TTFs)	No obstacles.	Unavoidable obstacles to 50mm (2") high, such as logs, roots and rocks. Avoidable, rollable obstacles may be present. Unavoidable bridges 900mm wide. Short sections may exceed criteria.	Unavoidable, rollable obstacles to 200mm (8") high, such as logs, roots and rocks. Avoidable obstacles to 600mm may be present. Unavoidable bridges 600mm wide. Width of deck is half the height. Short sections may exceed criteria.	Unavoidable obstacles to 380mm (15") high, such as logs, roots, rocks, drop-offs or constructed obstacles. Avoidable obstacles to 1200mm may be present. Unavoidable bridges 600mm wide. Width of deck is half the height. Short sections may exceed criteria.	Large, committing and unavoidable obstacles to 380mm (15") high. Avoidable obstacles to 1200mm may be present. Unavoidable bridges 600mm or narrower. Width of bridges is unpredictable. Short sections may exceed criteria.

<http://www.imba-au.com/imba-trails/resources/design-and-construction-guidelines> (2014)

AS 2156.1-2001 AUSTRALIAN STANDARD, WALKING TRACKS PART 1: CLASSIFICATION AND SIGNAGE

	1	2	3	4	5	6
Overview	<i>High use, easy access, suitable for wheelchair use, interpretation provided</i>	<i>High use, easy access, interpretation provided</i>	<i>Slightly modified environments, moderate numbers</i>	<i>Slightly modified environments, moderate numbers</i>	<i>Minimal facilities, few encounters</i>	<i>Often indistinct tracks in remote areas.</i>
Terrain	<i>No previous experience required.</i>	<i>No previous experience required.</i>	<i>No bushwalking experience required. May encounter steep slopes, water crossings, etc. Users responsible for own safety.</i>	<i>Users need to be self-reliant.</i>	<i>Users need to be self-reliant.</i>	<i>Users need to be self-reliant.</i>
Width	<i>>1.2m.</i>	<i>>900mm.</i>	<i>Generally <1.2m, variable.</i>			
Surface & drainage	<i>Broad, surfaced track suitable for wheelchairs.</i>	<i>Generally a modified or hardened surface.</i>	<i>Generally a modified surface, sections may be hardened.</i>	<i>Generally distinct without major modification.</i>	<i>Limited modification to natural surfaces. Alignment may be indistinct in places.</i>	<i>No modification of the natural environment.</i>
Gradient	<i>As per AS 1428: <1:14 (or 4° or 7%). Steps only with alternate ramp access.</i>	<i>Generally <1:10 (or 6° or 10%), minimal steps.</i>	<i>Generally <1:10 (or 6° or 10%), but may exceed 1:10 for short sections.</i>	<i>Limited to environmental and management considerations</i>	<i>May include steep sections of unmodified surfaces</i>	<i>May include steep sections of unmodified surfaces</i>
Infra-structure	<i>May include platforms, seats and barrier rails.</i>	<i>May include platforms, seats and barrier rails.</i>	<i>Generally only for specific safety and environmental considerations.</i>	<i>Generally only for specific safety and environmental considerations.</i>	<i>Generally only for specific safety and environmental considerations.</i>	<i>Generally not provided</i>
Signs	<i>Frequent.</i>	<i>Frequent.</i>	<i>OK for direction, management and interpretation purposes.</i>	<i>Minimal, for management and directional purposes.</i>	<i>Limited, for management purposes.</i>	<i>Not provided</i>
Weather	<i>Not applicable</i>	<i>Not applicable</i>	<i>Severe weather may affect navigation and safety.</i>	<i>Severe weather may affect navigation and safety.</i>	<i>Severe weather may affect navigation and safety.</i>	<i>Severe weather may affect navigation and safety.</i>
Risk management	<i>Tracks and built facilities managed for public risk and inspected at 30 day intervals.</i>	<i>Tracks and built facilities managed for public risk and inspected at 3 month intervals.</i>	<i>Built facilities managed for public risk and inspected at 6 month intervals.</i>	<i>Built facilities managed for public risk and inspected at 6-12 month intervals.</i>	<i>Built facilities managed for public risk and inspected at 6-18 month intervals.</i>	<i>Not be managed for public risk. Users responsible for personal safety.</i>
Management intervention	<i>High</i>	<i>Moderate to high</i>	<i>Moderate</i>	<i>Low to moderate</i>	<i>Low</i>	<i>Negligible</i>
Publicity	<i>Will normally appear on maps.</i>	<i>Will normally appear on maps.</i>	<i>Will normally appear on maps.</i>	<i>May be shown on maps</i>	<i>May be shown on maps</i>	<i>Will not be marked on maps</i>

Appendix 5 - Results of community consultation

The following provides a summary of the community consultation carried out prior to the Draft Reserve Activity Plan (RAP) compilation. An indication of how community consultation for the RAP will progress is also provided.

Initial community consultation

As part of the development of the RAP for the Single Hill Bushland Reserve, consultation was undertaken with adjoining landowners and stakeholders, user groups and the broader community. A 'walk and talk' session was held in the Reserve on 26th July 2020. This event was facilitated by Phil Watson of the Clarence City Council and supported by Andy Welling of Enviro-dynamics and Adam Holmstrom of Inspiring Place. The event was attended by 55 adults, 8 children and 1 dog.

A total of 113 submissions were provided from feedback forms, 'your say' surveys, walk and talk comments and emails from the public. All were received prior to the close of the consultation period on the 10th August 2020. All communications from the public regarding the management of the Single Hill Bushland Reserve are considered by Enviro-dynamics during the development of the RAP.

All the responses received during the 'walk and talk' session and through emails and the feedback forms are summarised in Table 1. The table is cross referenced to the Response Action numbers in the *Implementation Plan for Single Hill Bushland Reserve*, which indicate the recommended actions to be taken to address specific community consultation comments. Where no action required (n/a) is noted in the response column, this indicates the comments are outside the scope of this RAP or require no action. These comments have been included to inform Council.

More detail from the written submissions received is provided in Table 2.

Table 1. Community Feedback Response Table

No.	Summary of management issues/comments from walk & talk, phone and written responses	Issue	No. of submissions relating to each issue
1	Supportive of track development in reserve suggestions provided	Tracks	54
2	Concerns re mountain bike impacts	Tracks	4
2	No support for additional tracks in reserve	Tracks	2
2	Retain/restore natural values	Natural values	29
3	Rationalise mountain bike tracks in Nowra Reserve	Tracks	6
4	No development the reserve	Comment	9
5	Concerns with visual impacts of northern hillside	Visual impacts	3

No.	Summary of management issues/comments from walk & talk, phone and written responses	Issue	No. of submissions relating to each issue
6	Dog management – broad support for dogs to be allowed in reserves on led or under effective control	Domestic animal management	7
7	Concerns with erosion of slopes due to recreational use	Erosion/Tracks	3
8	Installation of directional and interpretive signage	Entrances and signage	9
9	Requires more information to provide response	Comment	15
10	Weed control	Weed management	4
11	Safety concerns associated with multi-use tracks	Safety	10
12	Installation of seating/picnic area/viewing areas in strategic locations	Infrastructure	6
13	Limited access and parking for vehicles/vehicle on hilltop	Comment-	4
14	Protection of native wildlife	Vegetation management / Domestic animal management	3

Table 2. Detailed community input received prior to Draft Reserve Activity Plan compilation.

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
1	Would like to see as much bushland left as possible	Natural values	VM actions
	Walking trails to the summit clearly marked	Track – support Signage	TD actions/EI actions
2	I hope the area will not be over developed	Infrastructure - no support	n/a
3	Hoping there is no planned residential development planned for the area	Infrastructure - no support	n/a
4	Walking and mountain bike tracks	Track - support	TD actions
	Keep the bush reserve	Natural values	VM actions
5	Would like this kept as is. No more houses on Seven Mile Beach side.	Infrastructure - no support	n/a
	Happy if tracks for walking tastefully developed	Track - support	TD actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
6	Great area suitable for walkers, runners, bike riders, dog walking, picnics, beach access.	Track - support	TD actions
	Plenty of natural vegetation to accommodate all the wild plants and animals that call this area home	Natural values	VM actions
	It's a fabulous link on the Tangara Trail Between Lauderdale Seven-mile Acton Sandford It's too valuable to miss manage and to wild to over develop	Tracks -support Natural values	TD actions/VM actions
7	Sounds good. As long as it's still natural. Perhaps wider tracks than we have as it's hard to pass people.	Natural Values	VM actions
		Track - suggestion	TD actions
8	The need to continue the Tangara trail is essential for recreational activities for health and wellbeing, horse riding, walking and mtb riding trails are an essential part of life for many. Easy access trails around Single Hill are needed for the continuation of the trail. The Tangara Trail was initially started by horse riders for horse riders. Now it's a shared trail for all disciplines to enjoy. This trail needs continuation in the Single Hill Bushland Reserve Activity Plan for 2020/30.	Track - support	TD actions
9	Keep it natural land so it looks appropriate from all angles	Natural values	VM actions
10	Need more information on the plans to comment	Comment	n/a
11	Please do not build any more homes as the cars on the road create bad noises now. A lot of cars and more homes at the old caravan park	Infrastructure - no support	n/a
12	Linked mountain bike single tracks	Track - support	TD actions
13	1) It is difficult to comment in detail without understanding what the long term plans are for the private parcel of land on the eastern reserve boundary (i.e.. the land that runs from the end of Kirra Road to the southern end of the Esplanade at 7 Mile Beach). Any management plan would need to take into account an increase in population density in the unfortunate event that land was to be subdivided.	Comment Infrastructure - no support	n/a
	2) There needs to be thinking about how to manage mixed use on any formed trails. Currently the trail between Kirra Road and 7 Mile has a high usage and there is no separation between pram walkers, walkers, and much faster mountain bikers. This can create a safety issue which will only increase as usage grows (for example as Cahill continues to build out, etc).	Track - suggestion	TD actions
	3) If more access was to be provided to the reserve there would need to be consideration for parking upgrades at 7 Mile and other access points.	Parking	No recommendation regarding parking made
	4) From personal observation there is a high density of wallaby/padamelon in the reserve. How dog walking/exercise (if	Domestic animal management	DM actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
	permitted) is managed needs to be carefully considered on this basis.		
	5) It may well be preferable to set aside the reserve for single use, or leave entirely undeveloped. The lack of formed trails may be discouraging high use. This would also allow for regeneration of vegetation and improved wildlife habitat.	Track – suggestion Natural values	TD actions VM actions
14	Who owned the land originally? How did the land come to be in the hands of Council? What is the intentions of Clarence with the land that is not within the outlined 'Reserve' area? Will there be residential development in the area? If so, can you please outline the area as mapped against the proposed 'Reserve' land?	Information	n/a
15	Trails should link the Tangara trail via Saltwater Rise to Proposed trail along Acton Creek. Or extend the Acton Creek trail to Seven Mile Beach Road to link into the Tangara trail. An alternate route from the Tangara trail at Seven Mile Beach Road to the beach is needed so that horses, bike, walkers and children have a safer access to the beach and the new proposed trails.	Track - suggestion	TD actions
16	Flora and fauna management, Bird life habitat, Maintain natural ambience.	Natural values	VM actions
	Consultation with residents	Information	Section 2
	Prohibit motorised vehicles	Vehicle management	Restricted access recommended
	Enforce dog regulations, ban dogs from the reserve area	Domestic animal management	DM actions
17	Walking comfortable with best views would be great.	Track - support	TD actions
18	I think this is an excellent opportunity for an iconic bushland reserve.	Natural values	VM actions
19	This is a good idea much better than development. Some are trying to have large chunks of land sold to Asian buyers	Infrastructure - no support	n/a
20	More public comment is needed	Information	Section 2
21	It needs to include safe paths for children to traverse as we have such a large contingent of young families in Lauderdale. A lookout would be great, and mountain bike trails would also be a great addition.	Safety Track - suggestion	Appendix 8 TD actions
22	A great opportunity for recreational trail for all users	Track - support	TD actions
23	look forward to another great reserve with bush walking and riding trails both bike and horses.	Track - support	TD actions
24	It needs to be accessible and safe for horse riders	Track - suggestion	TD actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
25	I live in Seven Mile Beach and do not wish to see the suburb urbanised - it will also lead to increased traffic flow, the outlook with development on the hill will not be the same, crowding of the beach, parking etc	Infrastructure - no support	n/a
26	I regularly bring my horse to ride on the Tangara Trail and would love to be able to ride in in the Single Hill Bushland Reserve. Please note that while I don't live in the area, I regularly purchase groceries, fuel and meals in the area when I visit.	Track - suggestion	TD actions
27	Can we please have a playground built for families to take their kids. Acton park is a very prominent Suburb on Hobart and we pay very high rates but do not have a single playground to take our kids to.	Infrastructure - suggestion	No playground recommended
28	The MTB Trail that is currently on the Nowra Road side of Single Hill should continue to be developed as part of the Tangara Trail network. During winter it can become quite sodden and some work to improve drainage on the trail to ensure it is rideable year round without damaging the trail. It provides value as some of the only technical switchback style climbing in the Tangara Trail Network and is a good step from easy trails to moderate difficulty which encourages riders to develop their skillsets and prepare them for bigger challenges like the Meehan Range. There is a substantial wallaby colony on the hill which seems to happily co-exist with users of the nearby trail.	Track - suggestion	TD2 action
	We were very impressed with the plans for the reserve and the extra opportunities this would give local residents to exercise in and enjoy the natural environment and magnificent views from previously unavailable land.	Comment Natural values	TD actions VM actions
29	It is important for us to understand the extent of the reserve and its purposes. The Google map is useful but does not show how the reserve matches up with Tangara Trails and where they will be accessible from the corridors. I would like to see a map with both Tangara Trails and reserve information in detail. What activities will be permitted within the reserve? Presumably walking will be acceptable. Will there be provision for dog walking? Are tracks to be all weather? Where will the tracks be? Will it be suitable for bike riding? Will there be any shelters or picnic areas constructed? Will there be road access to the reserve or only walkways? We can see construction of either a track or road being constructed now on the slope of the hill facing Frederick Henry Bay. I am presuming that the top of Single Hil is within the reserve, but this is not easy to see on the map. If 57 hectares has recently been so generously donated to council, what does this mean the land owner has received in return? Does the Single Hill Development Plan Stage Four mean the other, lower slopes of the hill will all be developed for housing? If so, what size are the lots? Where is this development located and how will it impact on views of the hill from Seven Mile Beach? How will it impact on local flora and fauna?	Information	n/a
30	Any development should focus on minimal impact all weather walking/running and mountain biking tracks (the horses have the Tangara Trail already - so not more horses!), with scenic look-outs and some small rest/picnic areas (if appropriate). Some	Track - suggestion	TD actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
	family fitness activity gear (natural log climbs, etc.) would also be nice		
31	Need more walking tracks and bike tracks in the municipality	Track - support	TD actions
32	I would like to see single hill re forested with native trees	Natural values	VM4 and VM5 actions
	Like to see with gravel walking paths. I don't believe we need anymore mtb tracks as the Meehan is heavily covered.	Track - suggestion	TD actions
33	Please consider that with many young families in the area can I suggest that you look into a bike park, pump track, MTB track or similar. Kingston have provided a quality pump track in their community and I could see something like this as part of the plan.	Track - suggestion	No bike park recommended. TD actions
34	Hard to add anything as there doesn't seem to be any details on what types of activities are being considered. In the past there has been a lot of shooting of wallabies and deer which Tas Police have said is OK - so if you have any plans then shooting should probably be banned. About the only activity that should be encouraged is walking - like walking tracks - but I would object to things like mountain bike or dirt/trail bike tracks. We live very close to Single Hill (across the road) and we enjoy the view we have of the bush so I wouldn't like to see something stupid like a visitor centre or some sort of amusement park. I will be interested to see what the actual intentions are for this area.	Information	n/a
35	Great addition to the Tangara trail tracks in the area	Track - support	TD actions
36	Would be nice for MTB and walking trails	Track - support	TD actions
37	We look forward to more walking trails in the area	Track - support	TD actions
38	Maintenance of trails for use by foot or mountain bike important. Improved connection between Nowra and Seven Mile Beach ends of trails.	Track - suggestion	TD actions
	Consider picnic area site/information plaque about the towers and equipment.	Infrastructure signage	Section 4.6
39	Excited to see this under utilised area become useable for the community	Comment	n/a
40	Any work on the hill should ensure the natural integrity is untouched. Minimal development should be under taken and anything done should endure the wildlife in unaffected	Natural values	VM actions
41	there are no questions to answer this is not a survey can you re-send please	information	n/a

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
42	Our family uses Single Hill for walking and biking. Be good to leave it as trails	track - support	TD actions
	Be good to leave it as natural bushland	Natural values	VM actions
43	Need to remove boxthorn where possible. No need for formal walking tracks up hill.	Weed control Track – no support	WM actions
44	In full support of plan	Comment	n/a
45	We value the mountain bike trails. But they could be improved to make a better experience for different riding levels.	Track - support	TD actions
	An interpretive lookout would be nice also.	Infrastructure signage	Section 4.6
46	Co-use - Multiple users. Walkers, dogs, bikes and horses. I love the co-use of the track from 7 mile beach to Lauderdale - with the created alternative challenging tracks for bikes as well as the main track. This reserve should include both again. This would make an excellent circuit available to all from both ends. Horses may be able to be easily added with a dedicated horse track to open up the Tangara trails that feed in	Track - suggestion	TD actions
	Best views from the top of Single Hill - a couple more seats and 5 viewing platforms - one east and one west towards Mt Wellington. One looking south (would be brilliant for pictures of Aurora, etc.) and one north - could be chosen to fit best place for views along the route and add surprises and one Northside. Plus a big one on top.	Infrastructure - suggestion	Section 4.6
	Flora and fauna inform boards scattered along the walks/tracks. Also info at Harris park.	Signage	EI2 action
47	Vegetation rehabilitation based on local, native vegetation communities (e.g. E. viminalis and associated understory species) - consider TASVEG benchmarks. Maintain and enhance wildlife habitat.	Natural values	VM actions
	Erosion and sediment control measures for steep slopes and Acton Creek	Erosion	TD actions
	Some dog handling rules as for the Single Hill foreshore track, that is, dogs to be leashed.	Domestic animal management	DM actions
48	I have limited amount of bird survey data for Single Hill and a bit for the back of Nowra Rd. The most important records are of Blue-winged Parrots which are of conservation concern. Also Dusky Robins used to be in the bush above Nowra Rd. It may be an important breeding area for parrots. I need to be clearer about the intention re the bush extending through to Kirra Drive. If the intent is to preserve and enhance the natural values of the area then it is imperative that the bike riders are prevented from wrecking the area with their mania for constructing unofficial	Natural values	Section 3.3 Birds VM actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
	jumps and tracks in a random manner. I would like to take you both on a tour of the areas destructed locally so that you can determine how or even if a repetition of this environmental vandalism can be prevented. No doubt you will receive strong representation from the bike riders with respect to wanting recreational access to Single Hill. I think they have to be confronted with their local legacy. There is a feeling of outrage concerning several members of our community.		
	<p>It will be interesting to see how the ridge top vegetation recovers over time without grazing pressure. If substantial understorey vegetation developed there could be big changes in the bird assemblages with species like Yellow-throated Honeyeaters and Pardalotes benefitting.</p> <p>I have recollections of Dusky Robins in the Nowra Rd scrub back in the late 1980s when we lived there. If correct that is interesting because I don't think there are any recent Acton or Roches beach records.</p> <p>I remain deeply concerned by the destruction caused by the bike fraternity. Many of them will create tracks and destroy bush irrespective of any facilities provided for them. Do they have groups representing them who can be reasoned with? The bike lobby receives enormous support. It is time it showed some leadership and peer pressure. These are not just kids.</p>	<p>Natural values</p> <p>Impacts of MTB</p>	<p>VM actions</p> <p>TD actions</p>
49	<p>I feel the reserve is in good hands. My concern is weed control (Serrated Tussock OMG!) and also the scars left by any work done on that type of terrain/soil. have always been concerned about the visual impact of driveways and so on, but even a fenceline leaves a big scar for quite a while (and is then healed by weed cover!). So I think tracks need to be designed with this in mind, and hand in hand with planting. Maybe we need some regrowth before tracks, dare I say?!</p>	<p>Weed control</p> <p>Natural values</p>	<p>WM actions</p> <p>VM actions</p>
	The erosion is also a real problem there. I feel sorry for the new block owners of the 20 hec lots as they will be having all sorts of issues with access roads, drainage, foundations, reveg, weed control, etc.	Erosion	TD actions
	Is it too soon to apply for weeding or planting under the next CL & CC Grant round? Or under Dirty Hands for plants?	Information	VM action
54	Not really a survey	Comment	n/a
58	I haven't seen the plan yet.	Comment	n/a
59	<p>Please leave the bushland on the Cahill side untouched, it's such a beautiful way to access the top.</p> <p>Mountain Bike tracks are appearing throughout Nowra Rd and SMB reserves. Please don't allow any on the hilltop reserve.</p>	Natural values	VM actions
	I would prefer no formal tracks. If formal tracks are in the plan on the SMB side please consider weaving a track similar to Knocklofty with no steps and plenty of native plantings. Mountain Bike tracks are appearing throughout Nowra Rd and SMB reserves. Please don't allow any on the hilltop reserve.	Track - suggestion	TD actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
	The natural values of Single Hill are best preserved by not allowing further subdivision of the 50acre lots or to allow the retirement village to expand beyond its current zoning boundary	Infrastructure - no support	No development to occur in reserve
60	Fantastic residential development idea	Comment	n/a
61	Would like more general information about the whole development. Especially that appropriate infrastructure has been planned	Comment	Refer to Draft RAP
62	The bushland needs to be managed to provide the best habitat for birds and other wildlife, and the local flora. Burning should be considered to promote regrowth.	Natural values	VM actions
63	Because parts of the Tangara trail are being trashed by mountain bike riders I would hope they will be forbidden access to the Single Hill reserve. I refer particularly to the bush area on the Black Peppermint trail at Acton where much of the natural vegetation has been destroyed by bike riders making extra tracks and jumps. I have no confidence that the same thing will not happen on Single Hill. I discovered a jump recently on the trail from Axiom Way to Cahill Place.	Impacts of MTBS	TD actions
	I believe the area has great potential for providing a valuable environment for wildlife including nesting sites for birds, particularly parrots. There are few old trees in the area for this purpose. Any additional planting should include local trees as well as understory which would deter noisy miners.	Natural values	VM actions
	What a stunning parcel of land that has been made available for our use. I'd love it to. be kept as natural as possible	Natural values	VM actions
64	To be used for those of us to exercise alone or with family and friends together with our dogs, (on lead of course) and horses. I'd like to see a walking track completed to the summit which would enable those of us less fortunate to be able to access the summit in their wheelchairs/walkers to take in the beautiful views.	Track - suggestion	TD5 action Landing points on northern slope proposed to provide vires without climbing to top. No vehicle access recommended.
65	As a member of the TangaraTrail Committee, I met with CCC to discuss the proposed development. One issue that came out of the meeting was the fact that the trail leading to the actual beach won't facilitate horses. there is an option and that is accessing the private property of the property owner over the bridge on the beach. discussions were around obtaining an access licence from the owner. you will find that if this option isn't provided to horse riders they will use the trail to the beach which will ultimately cause conflict with multiple users. regards Annette	Track - suggestion	TD actions
66	Ensure any works are multi use, with designated trails for horses as they damage footpaths & mountain bike tracks. Trail maps would be appreciated but used in a minimalistic way.	Track - suggestion	TD actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
67	Located in the new reserve are pre existing tracks and trails that where constructed with the previous land managers approval. It would be great if these tracks could be groomed and cleaned up too add to the existing wallaby track located in the Kirra Rd reserve	Track - suggestion	TD actions
68	We are close neighbours to the Reserve and are interested in attending the walk and talk sessions to understand the plans for the area.	Comment	RAP
69	Generally support the broad objectives of the planning process as outlined in the letter to residents. However, at present they lack specificity relevant to the conditions and issues associated with Single Hill.	Comment	n/a
	Also need to ensure appropriate linkages with other nearby reserve areas and tracks and ensure consistency/compatibility with the management of these areas as part of the planning process for the Single Hill Reserve Activity Plan. Further need to ensure protection of close and distant views both to and from the reserve as part of the planning process.	Track – suggestion Visual Impacts	TD actions
70	Please preserve some of the hill for future generations to enjoy. The development should not be seen from the beach.	Natural values Visual impacts	VM actions TD5 action
71	Don't develop it, leave it as is.	Comment	TD actions
73	Think this is a great idea. Still will keep the beautiful bush land that makes seven mile and Acton so beautiful! And possibly added a walking/bike track to get the community out there would be amazing	Track - support Natural values	VM actions TD actions
74	Walking tracks	Track - support	TD actions
75	Include multi use through trails from Seven Mile beach over single hill and around on all sides. Dedicated mountain bike trails up single hill from Seven Mile beach side to the top. Quality climbing and descending tracks.	Track - suggestion	TD actions
76	A formalised loop track for trail runners and mountain bikers would be excellent. A summit track would also be good.	Track - suggestion	TD actions
77	There's not enough available information on the proposed plan for me to be able to comment. All that is currently available to the public is the area map and the statement regarding the intention to develop a plan.	Information	n/a
78	The Single Hill Reserve should be multipurpose use for walkers, horseriders, and cyclists with designated areas and paths for all users, that are clearly signposted. At "pinch points" especially entrances and narrow areas, specific paths should be for developed with walkers and riders using one path, and riders and horses another. The top should have four viewing areas one north, one east, one south and one west where interpretive information is posted of flora, fauna aboriginal and historic values. These sites should not be seen from below, i.e. set back from the	Track – suggestion Safety Viewing areas Signage	TD actions Appendix 8 EI actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
	skyline. Paths that interweave connecting access points from Seven Mile Beach, Natone Hill, The Tangara Trail, developed with advice from interested parties - eg Horseriders from Tangara trail advisory group, Seven Mile from Coast Care, and cyclists from Lauderdale and fauna from a suitable community group. Cyclists could advise as to the technical layout of a cycling track and assist planning and its construction. Riders could advise as to the best access points and interconnection with the Tangara trails. Any path clearly marked for the appropriate users.		
	The top of the hill should be kept clear with suitable grasses established for its views. Revegetation could be trialled with a sectioned areas to keep wallabies and other grazers out of some sample plots where re-vegetation of suitable understorey plant species as well as canopy trees trialled.	Natural values	VM actions WM actions
	Dogs could be allowed under suitable control, not a lead on area.	Domestic animal management	DM actions
79	We would like to see horseriding trails and designated hanggliding sites. Our not for profit charity Travel with a Cause would also like to bring volunteers for bush fire eradication, removal of pine seedlings and any foreign trees that would endanger wildlife.	Track – suggestion Weed control	TD actions HG actions WM actions
80	I support the preservation of this area for recreational use	Track - support	TD actions
81	I would like to see a loop that links up with Roches to 7 mile for running and cycling. Additional mountain bike and trail running tracks would be great. A water tap with bubbler for hydration.	Track - suggestion	TD actions
82	Is there any information to guide the comments?	Comment	n/a
83	I would like some consideration be given the protection of the resident population of wallabies on single hill considering there recent continual slaughter day and night by the local landowner	Natural values	VM actions
84	Distinct mountain biking paths and walking trails	Track - suggestion	TD actions
85	All track corridors and links should be multi-use including horse riding, especially due to it's historical nature in the area. Council may be able to obtain a licence agreement to use the closed gate link to The Esplanade, for all users. Links at this area are important to access further tracks in the Seven Mile Beach spit area.	Track – suggestion Signage	TD actions Section 4.6
	Adequate signage and information so all users can enjoy the recreational area safely, especially in regard to mountain bikes.		
	Dogs to be under control to protect wildlife and for the safety of other users.	Domestic animal management	DM actions
	To maintain a natural feel with care of vegetation and revegetation.	Natural values	VM actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
86	Appreciate the opportunity to comment. Excited that this area has become a public space. Want it to be able to be shared by a range of users. My family enjoys walking, dog walking, mountain biking and horse riding and would like to do all those things on the Reserve.	Track - suggestion	TD actions
87	Single Hill is in dire need of management with weeds out of control, feral animals roaming, invasive species such as cats proliferating. Then there is the human impact of poor farming practices that have left a degraded hill with a tiny remnant of bushland looking rather sad. There are multiple wallabies and other animals that take refuge on single hill and continually are harassed by dogs not under effective control. I would like to see Single Hill revegetated to become the pride of Seven Mile Beach. To have the area that has been given over to the people become a corridor for not only humans to move through but also for animals to move from single Hill to other areas especially to find freshwater. It is such a privilege to live in Clarence with the trail network and superb bushland reserves that must be kept to maintain habitat for threatened flora and fauna. Single Hill needs to be revegetated with indigenous plants. The track/trail planned will be an amazing asset and I look forward to seeing part of Single Hill return to its glorious bushland with the wild flowers of dry sclerophyll forest bursting through the undergrowth. What an amazing sight. I am so looking forward to being a part of creating something beautiful and helping to heal the land that has been so badly treated for so many years. Thank you for letting me have my say.	Natural values Weed Control Domestic animal management	WM actions DM actions
88	Get on with it.	Comment	n/a
89	What I would like to see for the Reserve include: - no 5G tower due to the potential negative impacts to all biological life (e.g. see the 5G white paper here https://emraustralia.com.au/pages/5g)	Comment	n/a
	Restoration of the native vegetation; protection for the breeding pair of wedge tail eagles	Natural values	VM actions
	walk and cycle paths; a link from Nowra reserve to the coastal trail along the current end boundary (northern end) of Kirra road; paths from Elanor place across to Nowra reserve (down lower)	Track - suggestion	TD actions
90	I would like to see the vegetation of this iconic area increased. The view of this hill for residents and tourists walking/riding/swimming/surfing along 7MB is spectacular and creates a sense of getting away from the city.	Natural values	VM actions
91	As we live in close proximity to Single Hill, I personally enjoy walking in the area. My daughter and I horse ride. My husband and son's mountain bike ride. So I have an interest in the proposed access and usage for the three main user groups of walkers, horse riders and mtb riders. Throughout the walk & talk, there were many options voiced that were focused on the point of view of their particular activity. I believe that as a multi use community asset, we need to find ways to ensure all user groups can share access safely and comfortably.	Track - support	TD actions

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
	<p>During the walk and talk, there was lots of discussion from walkers about difficulties they have with sharing the tracks with Mountain bikers and horse riders. Mainly that bike riders go so fast and don't notify them on approaching. With horse riders, it is that they dig up the trails and that they don't know how to get in a position of safety. I particularly want to see the trails available for shared use. My concerns are the access points to the hill, where there will be bottle necks, and the three user groups in close proximity. As it is steep, and bikes often go downhill very quickly, there is also the risk of the different users coming across each other suddenly. If at all possible, I would like to see dedicated/separate tracks at these access points. I am particularly concerned about the safety of horse riders, in areas where bikes gather speed and can spook/scare a horse. An alternative is maybe to make the main trail that horse riders take, from Cahill place, one way for bikes, so they go up that trail, which would be at a slower pace, and then they could down hill, down another trail (to seven mile, Kirra road or Nowra hill). This would allow all users to go up this trail without the threat of a bike racing towards them. Even though this sounds restrictive to mtb riders, it is common in most mtb areas to have trails that are single direction, to avoid accidents.</p>	Track safety	Appendix 8 T8K actions
	<p>The 20 metre wide track, heading up the hill from 7 mile beach is very steep. It was suggested that there was some consideration to closing this access to horse riders. I can understand the steepness would mean not all horse riders would contemplate riding that track, but I also feel that closing it off to horses would block a linkage to other trails and therefore stop its use as a Circuit.</p> <p>I would like to see the council use the opportunity to develop some dedicated mtb technical/single track, up on single hill itself, as I know my boys, and many that ride in the area would particularly appreciate that. There are some areas within the trees on the Acton side that would suit this and still not be visible from below. I think this could be done by following existing wallaby trails, without disturbing too much vegetation. This would encourage mtb Riders to ride on their trail, and horse riders and walkers could use the existing tracks, which are wider, like bush roads. The local teenagers who ride that area regularly would be happy to be involved in discussions with council regards options that they would like to see. They would also be interested in working with MTB track builders to develop a suitable track.</p> <p>There was some discussion about firming up the well used "Wallaby Track" on Nowra Hill for mtb also. This Track is currently shared by all user groups without too many issues that I'm aware of. Although it does get very muddy when wet. Once access opens up from Nowra hill, that trail could also provide good access for horse riders. It will also be popular for mtb riders, as it would continue on from the "Wallaby Trail". But as it is a much more open and less steep option, it should allow for shared use more easily.</p>	Track - suggestion	TD actions
	<p>Good signage is required and was identified at W & T by all user groups that good signage is going to be particularly important throughout the area.</p> <p>Education seems to be an ongoing issue amongst various users, and there is definitely a need to revisit ways to educate all user groups, eg:</p>	Signage Safety	EI actions Appendix 8

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
	<ul style="list-style-type: none"> - Walkers wearing earphones can't hear bikes or horses approaching. - Bike riders, who "don't use bells anymore" to the disappointment of some walkers, must call out on approach of other users. - horse riders need to educate walkers and riders on how to behave when approaching or being approached by a horse. 		
92	<p>Widen the track – a slightly wider track would allow more room for ride error and assist when riders need to pass. Widening would also make the track distinguishable from animal paths.</p> <p>Weatherproof the track surface – This would improve safety and increase usage. Weather proofing could be provided by improved drainage or a more durable material (gravel) for the surface.</p> <p>Addition of berms to the turns – this would make the tracks safer and more accessible to a wider range of riders as well as providing a more enjoyable ride.</p> <p>Signage – the track needs to be one way; signage would be needed to ensure this. Signage would be used to also deter amateur track makers.</p> <p>Extension – extend the tracks along the ridge to access the northern sections of single hill (in blue in figure 1)</p>	<p>Track – suggestion</p> <p>Signage</p>	<p>TD actions</p> <p>EI actions</p>
93	<p>Two members from TRT met with Clarence City Council on 28/5/2020 to discuss new trails at Single Hill. These passive activity trails should all be multi-use, inclusive of horse riding. Following the edge of Acton Creek there is enough room for a shared trail. Access to this section, at the southern side of Coastal Drive, is quite narrow at the beginning. Over the bank is a flat section that continues partway along the side of the creek. It was discussed this may be suitable for horses to use instead of the narrow entrance, unless the creek water is high. The creek bank to the northern side of Coastal Drive was covered in building equipment and storage so that will require another look. Some wire fences need to be removed from the eastern facing side of the hill as these are blocking the future trail.</p> <p>Near the beach entrance of Acton Creek is a very steep section from the flat, A switchback track is suggested here. A committee member also attended the walk and talk on 26/8. It was mentioned this section could be too steep for horses, however access by horses is only limited by the capability of their riders. Horse riders need to be able to access this extremely important link to other trails and to provide a circuit. Switchbacks would enable access for all. For example the Storm Bay View Track at Gellibrand Drive entrance in Sandford is very steep and switchbacks are now shared there. It was used for many years as a straight track as are many others in the area. The Single Hill section is unquestionably steep, but a horse would easily use switchbacks. If absolutely necessary, riders could dismount this very short section if they were unconfident, rather than be unable to access further tracks. To access the beach, or over the creek to The Esplanade ,there is a closed gate to private land. Currently pedestrians are using this gate. Council may attempt obtaining a licence agreement from the property owner allowing all trail users to use this link. Horses are not permitted on Seven Mile Beach until Day Use Area 4 and would still need to proceed along The Esplanade and through the township. Currently there is no link behind the golf courses from Acton Park to Seven Mile Beach. The only other alternative will be to use the proposed Acton Creek trail to Coastal Drive. Both options from Single Hill to Seven Mile Beach area would be preferable.</p>	<p>Track - suggestion</p>	<p>TD actions</p>

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
	Considering the height of Single Hill, there are long and steep sections, therefore appropriate signage should be placed to ensure mountain bike riders are aware of the required safety of horse riders and walkers. More discussion regarding the combined safety for all users will need to be discussed in more detail during this plan process, and ongoing education regarding etiquette.	Safety	EI actions Appendix 8
	Dogs will need to be kept under control for the safety of other users, and also to protect the wildlife on the hill.	Domestic animal management	DM actions
	Without spoiling their fun, it should be noted that paragliding is also an activity based from Single Hill. As mentioned in the Tangara Trail Network Management Plan 2.3.1 "Due to the unique value that this trail network has for horse riding, management will ensure equestrian use is not compromised". Acreages attract horse owners, and Clarence is the only municipality that facilitates this exclusive recreational horse riding experience. Horse riders travel from other areas of Tasmania to enjoy the Tangara Trail. The opening of Single Hill will most likely attract more horse riders to use the Acton Court Hub.	Access	TD actions HG actions
94	I use the beach and track on a daily basis, the tracks are beautifully maintained and well used by walker, runners, mountain bikes, horse riders and dog walkers. The Community appear to respect each other and the tracks are always in use.	Comment	n/a
	I would love to see the continued multi use for the proposed park. I would not want to see motorised vehicles, either 4wd or motorbikes on the land.	Track support - MU	TD actions
95	Mountain bike track might be a good activity to add to part of the Single Hill plan?	Track-suggestion	TD actions
	Would love the area to be an off lead dog friendly exercise area	Domestic animal management – exercise area	DM actions No off lead proposed
	Remove dead wood to make movement through bushland easier	Vegetation management	Not recommended
96	Extension of basic MTB trail	Track support - MTB	TD actions
97	Given the amount of land available, some meandering and loop multi-user tracks, similar to Mortimer Bay Reserve would be very appealing if possible, providing more than a single 'there and back' trail.	Track support - MTB	TD actions
98	Initial concerns with shared use but happy with multi use provided separation at pinch points	Track support - MU	TD actions Appendix 8
100	Connect a western trail directly from the end of Kirra Rd uphill to the reserve	Track - new connection	No public land – not recommended

No.	Management Issues/Comments details from phone and written responses	Issue	Response in RAP
101	Access points. concern of steepness of northern access and request for separation from downhill mountain bikers on steep narrow section. Mixed uses safety - shared use horses. Where do multi users enter the reserve?	Track support - concern re safety on north face and due to mixed use	TD5 action
102	Issues with impacts of mountain bikes on vegetation and public safety	MTB use and safety	TD actions Appendix 8
103	Concern with revegetation	Retain/restore natural values	VM actions
104	Reintroduce possums to reserve; issues with black cockatoos damaging trees on his land?	Natural values	Possums occur in reserve
105	Worried about erosion from horses	Erosion	TD5 action
106	Concern about cars that are associated with hang gliders (what is access status?)	Vehicle assess	HG actions
107	Expressed appreciation for remnant stand of blue gums and preference to see areas fenced off for natural rehab with wallaby / chicken wire along with loose top to deter possums and manage browsing. General support for this from those present. This included trial plots on top; acknowledging the gradual creep from existing veg line technique.	Retain/restore natural values	VM actions
108	Concern of informal mountain bike trails damaging existing trees and roots systems – compaction etc.	Informal MTB trails	TD actions VM1
109	Request to rationalise existing mountain bike trails on SE end and harden ideal set.	Rationalise MTB tracks	TD2 action
110	Concern about Tangara Trail horses link if steep northern access is limited to walking and mountain bike users only.	Safety	TD5 action
111	Suggestion of mountain bike trail to west of crest and wrapping down to northern alignment.	Track -support - MTB	TD actions
112	Concern with trail safety when multi user - suggested separate trails	Safety	TK actions Appendix 8
113	Community member suggestion for focused seating areas on the four aspects of the hill, just below crest with opportunity for interpretation on the context / outlook. Noted rare chance to have 360 degree views in this area.	Infrastructure - seating	EI action

Appendix 6 - Plant list for Single Hill Bushland Reserve

This plant list was derived from surveys by North Barker 2007 and Enviro-dynamics 2020.

KEY: e = endemic i = introduced r = rare E = Endangered (TSPA, EPBCA)

Dicotyledonae

Family name	Species name	Common name
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AIZOACEAE

	<i>Carpobrotus rossii</i>	native pigface
	<i>Daucus glochidiatus</i>	austral carrot

AMARANTHACEAE

	<i>Ptilotus spathulatus</i>	pussy tails
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APIACEAE

	<i>Apium prostratum</i> subsp. <i>prostratum</i>	prostrate sea celery
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ASTERACEAE

i	<i>Arctotheca calendula</i>	capeweed
	<i>Brachyscome aculeata</i>	hill or coarse daisy
	<i>Cassinia aculeata</i>	dollybush
i	<i>Carduus</i> sp.	slender thistle
i	<i>Cirsium arvense</i>	californian thistle
i	<i>Cirsium vulgare</i>	spear Thistle
i	<i>Conyza albida</i>	tall fleabane
	<i>Coronidium scorpioides</i>	button everlasting
	<i>Euchiton collinus</i>	cudweed
i	<i>Gazania linearis</i>	gazania
i	<i>Helminthotheca echioides</i>	bristly ox-tongue
i	<i>Hypochoeris radicata</i>	cat's ear
	<i>Lagenophora huegelii</i>	coarse bottle daisy
i	<i>Leontodon taraxacoides</i>	hairy hawkbit
	<i>Leptorhynchus squamatus</i>	scaly button
	<i>Olearia ramulosa</i>	twiggy daisy bush
	<i>Ozothamnus obcordatus</i>	grey everlasting
	<i>Senecio glomeratus</i>	annual fireweed
	<i>Senecio linearifolius</i>	common fireweed

	<i>Senecio quadridentatus</i>	cotton fireweed
	<i>Senecio sp.</i>	fireweed
i	<i>Silybum marianum</i>	variegated thistle
i	<i>Sonchus asper</i>	prickly sow thistle
i	<i>Sonchus oleraceus</i>	common sow thistle
i	<i>Sonchus sp.</i>	sow thistle
i	<i>Taraxacum officinale</i>	common dandelion
i	<i>Tragopogon porrifolius</i>	salsify
r	<i>Vittadinia muelleri</i>	narrow-leaf new holland daisy

BORAGINACEAE

i	<i>Amsinckia calycina</i>	yellow gromwell
	<i>Cynoglossum australe</i>	hound's tongue
	<i>Hackelia suaveolens</i>	sweet hound's tongue
	<i>Myosotis australis</i>	forget-me-not

BRASSICACEAE

i	<i>Brassica sp.</i>	brassica
i	<i>Capsella bursa-pastoris</i>	shepherds purse
i	<i>Lepidium campestre</i>	field cress

CAMPANULACEAE

	<i>Lobelia alata</i>	angled lobelia
	<i>Wahlenbergia multicaulis</i>	tadgells bluebell
	<i>Wahlenbergia sp.</i>	bluebell

CARYOPHYLLACEAE

i	<i>Cerastium sp.</i>	mouse-ear chickweed
i	<i>Petrorhagia nanteuillii</i>	proliferous pink
i	<i>Silene gallica</i>	small-flowered catchfly
i	<i>Spergula arvensis</i>	corn spurrey
i	<i>Stellaria media</i>	common chickweed

CASUARINACEAE

	<i>Allocasuarina littoralis</i>	black sheoak
	<i>Allocasuarina verticillata</i>	drooping sheoak

CHENOPODIACEAE

i	<i>Atriplex prostrata</i>	saltbush, hastate orache
	<i>Einadia nutans</i> subsp. <i>nutans</i>	climbing saltbush

COLCHICACEAE

	<i>Wurmbea dioica</i>	early nancy
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CONVOLVULACEAE

	<i>Convolvulus angustissimus</i> var.	
	<i>Angustissimus</i> sp.	australian or blushing bindweed
	<i>Dichondra repens</i>	kidney-weed

CRASSULACEAE

	<i>Crassula decumbens</i>	spreading crassula
	<i>Crassula tetramera</i>	crassula
i	<i>Crassula</i> sp.	crassula

DILLENIACEAE

	<i>Hibbertia</i> sp.	guinea flower
	<i>Hibbertia prostrata</i>	prostrate guinea-flower

ERICACEAE

	<i>Astroloma humifusum</i>	native cranberry
	<i>Epacris impressa</i>	common heath
	<i>Leucopogon collinus</i>	white beard-heath

EUPHORBIACEAE

	<i>Amperea xiphoclada</i>	broom surge
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FABACEAE

	<i>Aotus ericoides</i>	golden pea, common aotus
	<i>Bossiaea cinerea</i>	showy bossia
	<i>Bossiaea prostrata</i>	creeping bossia
i	<i>Medicago lupulina</i>	medick
i	<i>Melilotus indicus</i>	melilot
i	<i>Trifolium repens</i>	white clover
	<i>Trifolium</i> sp.	clover
i	<i>Vicia sativa</i> subsp. <i>nigra</i>	narrow-leaved vetch
i	<i>Vicia sativa</i>	vetch

GENTIANACEAE

i	<i>Centaurium erythraea</i>	common centaury
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GERANIACEAE

i	<i>Erodium sp.</i>	storkbill
i	<i>Erodium cicutarium</i>	common storksbill
i	<i>Geranium mole</i>	dove's foot cranesbill
	<i>Geranium retrorsum</i>	common cranesbill
	<i>Geranium solanderi</i>	austral cranesbill
i	<i>Geranium sp.</i>	geranium

GOODENIACEAE

	<i>Goodenia lanata</i>	native primrose
	<i>Selliera radicans</i>	swamp-weed

HALORAGACEAE

	<i>Gonocarpus tetragynus</i>	common raspwort
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LAMIACEAE

i	<i>Marrubium vulgare</i>	white horehound
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LAURACEAE

	<i>Cassytha pubescens</i>	hairy dodder-laurel
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LINACEAE

i	<i>Linum trigynum</i>	yellow flax
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MALVACEAE

i	<i>Malva linnaei</i>	cretan mallow
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MIMOSACEAE

	<i>Acacia dealbata</i>	silver wattle
	<i>Acacia genistifolia</i>	spreading or early wattle
	<i>Acacia longifolia</i> subsp. <i>Sophorae</i>	coast wattle
	<i>Acacia mearnsii</i>	black wattle
	<i>Acacia melanoxylon</i>	blackwood

MYRTACEAE

	<i>Calytrix tetragona</i>	fringe myrtle
e	<i>Eucalyptus amygdalina</i>	black peppermint
	<i>Eucalyptus globulus</i> subsp. <i>globulus</i>	tasmanian blue gum
	<i>Eucalyptus pulchella</i>	white peppermint
e	<i>Eucalyptus tenuiramis</i>	silver peppermint
	<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	white gum
e	<i>Leptospermum glaucescens</i>	semi-glaucous tea-tree
	<i>Leptospermum lanigerum</i>	woolly teatree

OXALIDACEAE

	<i>Oxalis perennans</i>	native wood sorrel
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PAPAVERACEAE

i	<i>Fumaria muralis</i> subsp. <i>muralis</i>	wall fumitory
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PITTOSPORACEAE

	<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	prickly box
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PLANTAGINACEAE

i	<i>Plantago coronopus</i> subsp. <i>coronopus</i>	buckshorn plantain
	<i>Plantago hispida</i>	hairy plantain
i	<i>Plantago lanceolata</i>	narrow leaf plantain
i	<i>Plantago major</i>	plantain, greater plantain
	<i>Plantago varia</i>	variable plantain

POLYGALACEAE

	<i>Comesperma volubile</i>	blue lovecreeper
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POLYGONACEAE

i	<i>Acetosella vulgaris</i>	sheep's sorrel
	<i>Rumex brownii</i>	swamp dock

PRIMULACEAE

i	<i>Anagallis arvensis</i>	scarlet pimpernel
	<i>Samolus repens</i>	creeping brookweed

RANUNCULACEAE

	<i>Ranunculus lappaceus</i>	common buttercup
i	<i>Ranunculus sp.</i>	buttercup

RESEDACEAE

i	<i>Reseda sp.</i>	mignonette
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RHAMNACEAE

	<i>Pomaderris elliptica</i>	yellow dogwood
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ROSACEAE

	<i>Acaena echinata</i>	sheeps burr
	<i>Acaena novae-zelandiae</i>	buzzy
	<i>Acaena sp.</i>	sheeps burr
i	<i>Rosa rubiginosa</i>	sweet briar
i	<i>Rubus fruticosus</i>	blackberry

RUBIACEAE

	<i>Asperula conferta</i> var. <i>conferta</i>	common woodruff
	<i>Coprosma quadrifida</i>	native currant

SAPINDACEAE

	<i>Dodonaea viscosa</i>	native hop bush
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SANTALACEAE

	<i>Exocarpos cupressiformis</i>	native cherry
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SCROPHULARIACEAE

	<i>Veronica gracilis</i>	slender speedwell
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SOLANACEAE

i	<i>Lycium ferocissimum</i>	african boxthorn
	<i>Solanum laciniatum</i>	kangaroo apple
i	<i>Solanum nigrum</i>	black nightshade

THYMELAEACEAE

	<i>Pimelea humilis</i>	common or dwarf rice-flower
	<i>Pimelea linifolia</i>	slender rice flower

TREMANDRACEAE

Tetralathea labillardierei

labillardierei's black-eyed susan

URTICACEAE

Urtica urens

small nettle

Gymnospermae

Family name Species name

Common name

PINACEAE

Pinus radiata

radiata pine

Monocotyledonae

Family name Species name

Common name

ASPARAGACEAE

Asparagus officinalis

asparagus

Lomandra longifolia

sagg

CYPERACEAE

Carex breviculmis

sedge

Eleocharis acuta

common spike-rush

Ficinia nodosa

knobby or knotty club-rush

Gahnia radula

thatch saw-sedge

Lepidosperma concavum

sand or hill sword sedge

Lepidosperma laterale

variable sword-sedge

Schoenoplectus pungens

american club-rush, sharp leaf-rush

Schoenus apogon

common bog-rush

Schoenus nitens

shiny bog-rush

HEMEROCALLIDACEAE

Dianella brevicaulis

flax lily

Dianella revolutus

narrow-leaved flax lily

Thelionema caespitosum

tufted blue-lily

IRIDACEAE

Diplarrena moraea white flag iris

JUNCACEAE

	<i>Juncus amabilis</i>	gentle rush
i	<i>Juncus articulatus</i>	jointed rush
	<i>Juncus filicaulis</i>	thread rush
	<i>Juncus kraussii australiensis</i>	sea rush
	<i>Juncus pallidus</i>	pale rush
	<i>Juncus revolutus</i>	creeping rush
	<i>Juncus sarophorus</i>	fleshy rush
	<i>Juncus subsecundus</i>	finger rush

LAXMANNIACEAE

Arthropodium sp. vanilla-lily

ORCHIDACEAE

Microtis sp. onion orchid

POACEAE

	X <i>Agropogon littoralis</i>	
	<i>Aira elegans</i>	hairgrass
	<i>Austrostipa rudis</i> subsp. <i>australis</i>	austral speargrass
	<i>Austrostipa scabra</i>	rough speargrass
	<i>Austrostipa semibarbata</i>	fibrous speargrass
	<i>Austrostipa</i> sp.	speargrass
	<i>Austrostipa stuposa</i>	corkscrew speargrass
i	<i>Briza minor</i>	lesser quaking-grass
i	<i>Bromus</i> sp.	brome
i	<i>Bromus willdenowii</i>	prairie grass
i	<i>Dactylis glomerata</i>	cocksfoot
	<i>Distichlis distichophylla</i>	australian Salt-grass
i	<i>Echinopogon ovatus</i>	hedgehog grass
	<i>Elymus scaber</i>	rough wheatgrass
	<i>Elymus</i> sp.	wheatgrass
	<i>Hemarthria uncinata</i>	mat grass
i	<i>Holcus lanatus</i>	yorkshire fog grass
i	<i>Hordeum marinum</i> subsp. <i>gussoneanum</i>	sea barley grass
i	<i>Lolium perenne</i>	perennial ryegrass

	<i>Microlaena stipoides</i>	weeping grass
i	<i>Nassella trichotoma</i>	serrated tussock
i	<i>Phalaris aquatica</i>	reed canary grass
i	<i>Phalaris</i> sp.	canary grass
	<i>Poa labillardierei</i> var. <i>labillardierei</i>	tussockgrass
	<i>Poa poiformis</i> var. <i>poiformis</i>	blue tussockgrass
	<i>Poa rodwayi</i>	rodway's poa
	<i>Poa sieberiana</i>	tussock or snow grass
	<i>Rytidosperma caespitosa</i>	common wallabygrass
	<i>Rytidosperma dimidiatum</i>	half-formed wallabygrass
	<i>Rytidosperma geniculata</i>	knead wallabygrass
	<i>Rytidosperma pilosa</i>	velvet wallabygrass
	<i>Rytidosperma setacea</i>	bristle wallabygrass
	<i>Rytidosperma</i> sp.	wallabygrass
	<i>Themeda triandra</i>	kangaroo grass

TYPHACEAE

i	<i>Typha latifolia</i>	great reedmace
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Pteridophyta

Family name Species name Common name

ADIANTACEAE

<i>Cheilanthes austrotenuifolia</i>	rock fern
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DENNSTAEDTIACEAE

<i>Pteridium esculentum</i>	Bracken
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Appendix 6 - Bird list for Single Hill Bushland Reserve

The following bird list for the Single Hill and Nowra Bushland Reserves is supplied by Mike Newman of BirdLife Australia. The surveys have been undertaken across the woodland and grassland habitat during a series of 20 min survey over several years on a voluntary basis.

All data collected has been added to BirdLife Australia's Birdata web portal by Mike Newman.

Table 3. Bird list containing species recorded from surveys conducted by Mike Newman at Single Hill Bushland Reserve and an area above Nowra Road over several years.

Common Names	Species Name	Count	Reporting rate
Common bronzewing	<i>Phaps chalcoptera</i>	2	25%
Swamp harrier	<i>Circus approximans</i>	1	12.5%
Brown falcon	<i>Falco berigora</i>	1	12.5%
Galah	<i>Eolophus roseicapilla</i>	3	37.5%
Eastern rosella	<i>Platycercus eximius</i>	4	50%
Blue-winged parrot	<i>Neophema chrysostoma</i>	2	25%
Musk lorikeet	<i>Glossopsitta concinna</i>	4	50%
Superb fairy-wren	<i>Malurus cyaneus</i>	1	25%
Little wattlebird	<i>Anthochaera chrysoptera</i>	1	12.5%
Noisy miner	<i>Manorina melanocephala</i>	3	37.5%
Yellow-rumped thornbill	<i>Acanthiza chrysorrhoa</i>	1	12.5%
Brown thornbill	<i>Acanthiza pusilla</i>	2	25%
Grey currawong	<i>Strepera versicolor</i>	1	12.5%
Australian magpie	<i>Gymnorhina tibicen</i>	2	25%
Grey butcherbird	<i>Cracticus torquatus</i>	3	37.5%
Forest raven	<i>Corvus tasmanicus</i>	3	37.5%
House sparrow	<i>Passer domesticus</i>	1	12.5%
Australasian pipit	<i>Anthus novaeseelandiae</i>	1	12.5%
Eurasian skylark	<i>Alauda arvensis</i>	1	12.5%
Common starling	<i>Sturnus vulgaris</i>	2	25%
Dusky robin	<i>Melanodryas vittata</i>	Recorded in Nowra late 80's	
Green rosella	<i>Platycercus caledonicus</i>	Spring 2020 survey	
Striated pardalote	<i>Pardalotus striatus</i>	Spring 2020 survey	
Peregrine falcon	<i>Falco peregrinus</i>	Spring 2020 survey	
Wedge-tailed eagle	<i>Aquila audax fleayi</i>	Spring 2020 survey	
Dusky woodswallow	<i>Artamus cyanopterus</i>	Spring 2020 survey	

Appendix 7 - Weed Descriptions

african boxthorn (*Lycium ferocissimum*)



African boxthorn is a woody shrub reaching up to 4 metres in height, with glossy leaves and an extensive root system incorporating a long branched taproot. The trunk and branches are light brown and smooth when young, turning darker brown or grey with age. The twigs end in a hard, sharp spike or thorn. The white flowers are usually produced in summer, although flowering can occur through most of the year. The fruit is an oblong berry approximately 10 mm long, going from a smooth green appearance to bright orange-red when ripe. Fruits

contain numerous small, oval, flattened seeds. Seeds germinate at any time of the year and generally take two years to reach flowering stage. African boxthorn can be confused with the native tree violet (*Hymenanthera dentate*).

boneseed (*Chrysanthemoides monilifera* ssp. *Monilifera*)



Boneseed is an evergreen woody shrub growing to 2 metres or more in height and width. The elongated leathery leaves are dull green in colour and around 40 to 70 mm long and 20 to 35 mm wide. Boneseed flowers from mid-spring to early summer. The yellow flowers develop in clusters at the ends of the branches and resemble the flowers of a daisy. The fruits are green and fleshy at first then becoming black at maturity. The fruit eventually flakes off to leave the inner seed exposed. The seeds are hard and bone-like in texture and colour. Seeds are

shed during summer and autumn. Heat may crack the seed coat and large numbers of boneseed seedlings may appear after fire.

californian thistle (*Cirsium arvense*)



Californian thistle is a perennial (long-lived) plant. Over winter the top growth dies off leaving only the root system. The roots remain alive from year to year and actively spread through the soil. In spring the roots produce rosettes (whorls of leaves close to the ground), which send up a branched stem to about 1 metre in height. The stems are usually hairless and there are no wings or other outgrowths from the stem as occur in slender, cotton and nodding thistle.

The bracts which surround the flower heads are green with purple tips and although tapering to a point are not spined.

Each flower head contains a large number of rose-purple to lavender florets smelling strongly of honey. Male and female flowers are borne on separate plants. Infestations that have either all male

or all female plants spread by vegetative growth only. If male and female plants are found within the same infestation, viable seed is produced and the infestation spreads both vegetatively and by seeding.

capeweed (*Arctotheca calendula*)



Capeweed is an autumn-germinating annual plant, with seedlings appearing from late February through to late April. As plants mature they develop into a rosette, or whorl of leaves close to the ground. Capeweed rosettes are similar to storksbill, crowsfoot, bittercress, and mustards, but can be identified by the undersides of the leaves which are whitish and covered by a thick mat of short hairs. Flowering occurs in late spring and early summer; the masses of yellow, daisy-like flowers with dark, almost black centres are conspicuous from a considerable distance. Capeweed dies off in late summer.

horehound (*Marrubium vulgare*)



Horehound is a branching, perennial (long-lived) plant growing to a height of about 80 cm. The stems and lower surface of the leaves are covered with white woolly hairs, giving the plant a silvery appearance. The leaves have a "crinkly" appearance and the leaf margins have rounded teeth. The white flower clusters are densely packed, forming balls of flowers that surround the upper stems at each leaf node. Most seed germinates after autumn rains but some germination also occurs through winter into spring. Established plants flower over several months during summer and autumn and new growth is produced each year in autumn and spring.

serrated tussock (*Nassella trichotoma*)



Serrated tussock is a perennial (long-lived) tussock-forming grass with a deep root system. The leaves of serrated tussock feel rough (or serrated) if the finger and thumb are drawn down the blade. Flower stalks usually appear in spring, but may appear earlier in dry years and later in wetter years. A tussock in full flower presents a distinctly purple appearance due to the large number of purple florets. Serrated tussock is similar to several of Tasmania's native tussock grasses, and is frequently overlooked until it begins to flower, at which time it is easily recognisable.

spear thistle (*Cirsium vulgare*)



Spear thistle is an annual or biennial herb, growing to 60 to 120 cm, and occasionally to 1.5 metres. The leaves are dark green, rough and hairy on the upper surface, and lighter beneath due to a dense covering of whitish hairs. Rosette leaves have spines on the margins and wart-like protuberances on the upper surface. Stem leaves are divided into lobes, with the tip of each lobe ending in a spine. The stems are winged and spined and are covered with hairs. The root is a branched tap root.

Spear thistle flowers are reddish to purple. The flower heads are surrounded by a large number of spiny bracts, and occur singly or in groups of two or three heads at the ends of branches. Spear thistle seeds germinate mainly after autumn rains. The plant over-winters as a rosette (a whorl of leaves close to the ground); rosettes grow rapidly through spring and can reach a diameter of 60 cm. The rosette may produce stems, flower and die in their first summer. Alternatively, rosettes may persist through summer and continue growth into a second autumn and winter. Dead plants often remain standing for several years.

variegated thistle (*Silybum marianum*)



Variegated thistle is a large biennial plant (living for two years) forming rosettes of a metre or more in diameter and a flowering stem up to 2 metres in height. Rosette leaves are lobed and with spiny margins, and the upper surface is a bright, shining green with distinct white variegations. The flower heads are large and showy, bright purple in colour, and surrounded by long, stiff, spiny bracts. Most seed germination takes place in early autumn but can also occur in spring and summer in irrigated areas. Variegated thistle normally over-winters as a rosette but in spring-sown crops it can establish as a seedling then flower and produce seed within the life of the crop.

Appendix 8 – Code of Conduct guidelines

Code of Conduct

A shared trail code of conduct was developed as part of the Tangara Trail Management Plan 2012 which identifies the following principles for safe and courteous use of trails.

- Respect Other Users - Includes priority for horses, controlling dogs and slowing when passing
- Be Safe - Includes slowing for corners and blindspots, controlling speeds and wearing helmets
- Stay on Trail - Includes obeying signs prohibiting access to bird nesting areas and no trespassing on private land.
- Minimise impacts on the environment - Includes avoiding muddy tracks after rain, leave no trace and remove litter
- Get involved - Includes reporting hazards and taking part in volunteer days

The Code of Conduct provides guidance for appropriate behaviour for the various user groups. This ensures the trails are shared safely and cooperatively and that users have an expectation of how others will behave when they are encountered. These principles are communicated in council publications, website and through etiquette signage. Examples are shown below:

