TASMANIAN ABORIGINAL CENTRE INC.

trawtha makuminya

HEALTHY COUNTRY PLAN 2015

TABLE OF CONTENTS

FIGURES AND TABLES

ACKNOWLEDGEMENTS

This plan was developed by representatives of the Tasmanian Aboriginal community, supported by the Tasmanian Aboriginal Centre (TAC).

A small working group was formed to develop the plan for trawtha makuminya (and Preminghana at the same time)

- Adam Thompson
- Allison Cann
- Andry Sculthorpe
- Graeme Gardner
- Raylene Foster
- Rebecca Digney
- Tim Brown

We would like to thank all community members and TAC staff for their help in preparing the plan.

INTRODUCTION

trawtha (pron: trow-dtha) (Big River Country) makuminya (pron: mah-ku-mi-nya) (Tracks) comprises 6,878 ha of land situated in the Central Highlands region of Tasmania. The property contains a range of significant conservation values including several rare and threatened flora and fauna species, threatened vegetation communities, sites of important geo-heritage significance and areas of Aboriginal historical and ancient value. In context, the property adjoins the Tasmanian Wilderness World Heritage Area, lands owned by the Tasmanian Land Conservancy subject to conservation covenants, and reserved forest land (TAC, 2013:3).

Gowan Brae was purchased by the Aboriginal Land Council of Tasmania in 2012 with financial assistance from the Australian Government's Caring for Our Country fund through its Establishing Protected Areas for the National Reserve System (NRS) program, and the Indigenous Land Corporation (TAC, 2013:3).

This Healthy Country Plan has been developed to guide the management of trawtha makuminya for the next 5 years (2015-2020)

Figure 1: Location map

PLAN SCOPE

trawtha makuminya is located in the in the Central Highlands of Tasmania approximately 15 km east of Lake St Clair, 18km west of Great Lake and 11 km northwest of Bronte Park, at latitude 42 0' S and longitude 146 25' E (

trawtha makuminya lies in the centre of Tasmania, 2 hours' drive from both Launceston and Hobart. It is next to the Tasmanian Wilderness World Heritage Area (TWWHA).

The property is bounded in the east by Pine River, but Circular Marsh and 'The Cellars' blocks are just east of Pine River. Johnsons Lagoon abuts the property in the North West Corner. trawtha makuminya ranges from 790m to 1060m elevation and receives over 2,500 mm of rainfall per year, together with prolonged frost and heavy snowfalls in winter.

The Healthy Country plan covers all of trawtha makuminya, although many of the values and issues on trawtha makuminya occur in the larger region.

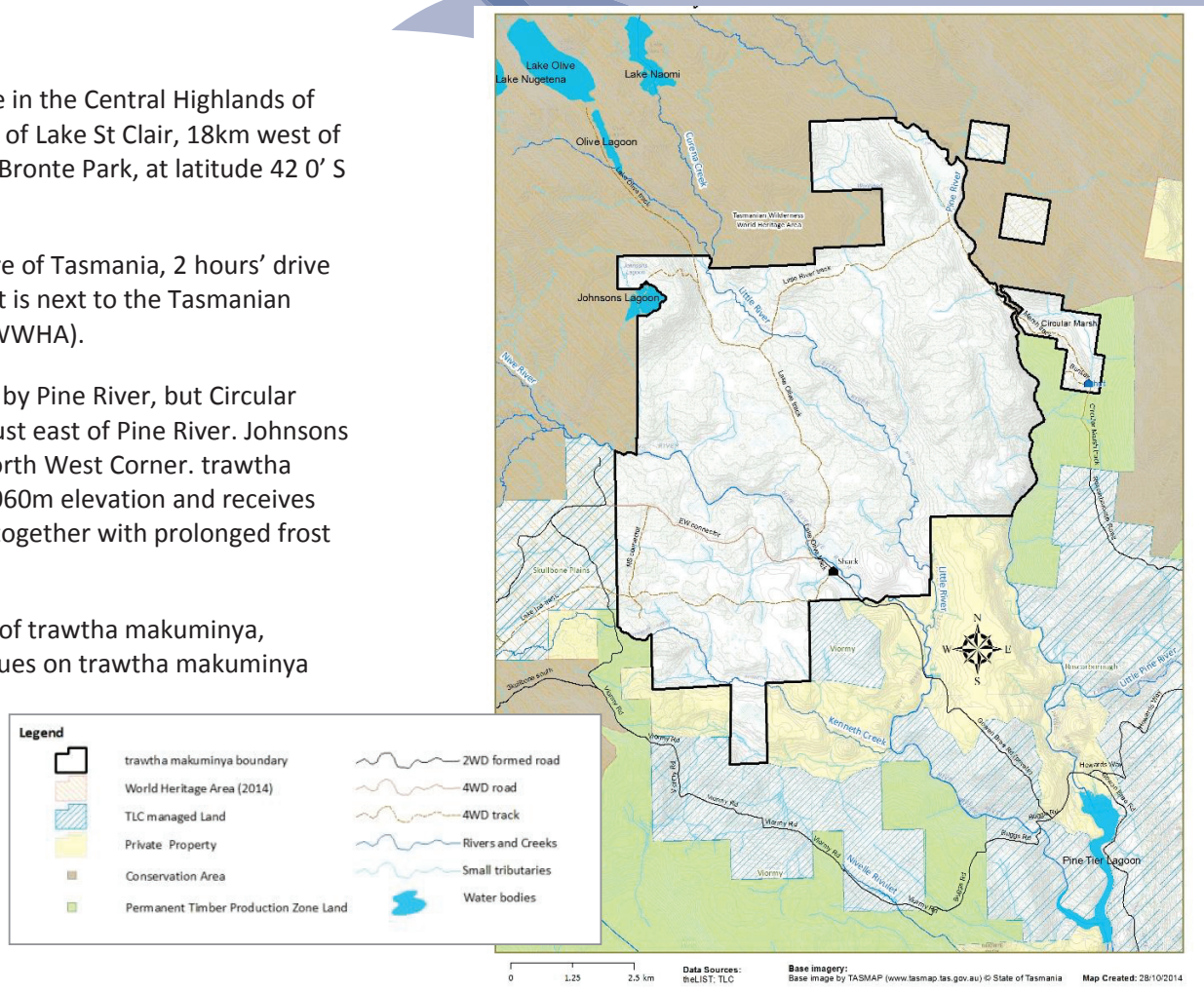


Figure 2: trawtha makuminya showing surrounding land use

USING THE PLAN

The trawtha makuminya Healthy Country Plan will help achieve the Tasmanian Aboriginal peoples' vision and goals for how their country might be managed into the future.

The Plan talks about the important things that we want to look after on trawtha makuminya – our Targets. For each target, we give a rating that describes how healthy we think it is. This will help us to see whether our Healthy Country Plan is working over time.

The Plan then lists the "Problems" (Threats) facing our country. For each problem, we give a rating that describes how bad the problem is, and this helps us to see if our Plan is helping to reduce the problems.

The Plan then lists the projects we want to set up to help care for and improve the targets and to get rid of or reduce the threats. For each project we talk about the targets and threats that the project is trying to help. Each project also has a clear objective that tells us exactly what we want the project to achieve.

An important part of our Plan is that it helps us to monitor how the Plan is implemented, how effective each project is, and the status of each of the targets and threats. This tells us whether the Plan is being put into practice and whether it is working for us and our country.

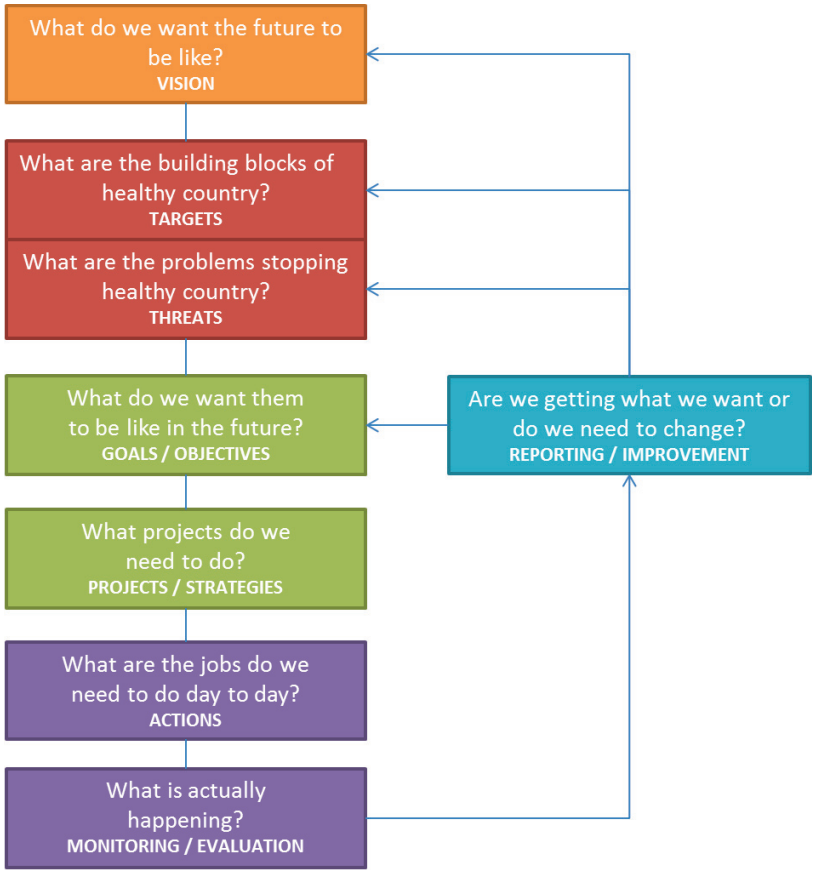


Figure 3: How the plan fits together

What do we do first?

This plan is all about achieving our vision on all our country, but we need to set out what we need to do first. This Plan will be put in place through seven Projects, detailed in this plan. To guide those projects, we need to start with the following:

Establish a trawtha makuminya management team (2014/15)

From our Board and Staff identify who is available to work on implementing this plan. A Working Group requires individuals with a range of skills. If these skills don't exist within the Board, we will look within the community for people with the skills we need, and then seek outside support.

Implement the High Priority Actions / Projects (2014/15)

There are many projects we could undertake. We need to begin to re-align our activities with the priorities identified in the plan.

Regular review of progress (2014/15)

Begin immediately a process of quarterly progress review. Bring the Working Group and ranger team together for a day, and discuss progress and record our successes, and changes needed.

Involve the community in all that we do (ongoing)

By reporting on what we do, sharing this through various media, newsletters, web, social, will ensure thatall priorities expectations and people are respected.

OUR VISION

Our Vision guides us to where we want to go with this plan and all our work. If this plan is successful it will move us closer to achieving our vision.

trawtha makuminya is a place

to create story

to develop an understanding

of its history, heritage values, use and environment,

for traditional and new practices




TARGETS (BUILDING BLOCKS OF HEALTHY COUNTRY)

To Tasmanian Aboriginal people, all of our country is important, and there are lots of things about our country that we value: the animals and plants; the landscape; the water; and our connection and culture. All these things have great cultural and spiritual importance for us, and we have stories about many of these things that help us to understand them and keep them healthy.

In order to create a plan that will enable us to focus our resources on key issues, seven targets have been identified. In order for our country to be healthy, these seven targets need to be healthy. The targets are listed here and described in detail below. We will work on all our targets, but focus our work in the following order of priority:

Very Good	As healthy as it can be
Good	Might need a bit of support
Fair	Needs a lot of support
Poor	Needs urgent attention

Item	Indicators	Status
Birds and mammals of conservation significance	• Abundance / diversity • Presence / absence	Good
Community Use	• Community satisfaction • Level of visitation • Number of community events	Fair
Cultural places, heritage and resources	• Appropriate visits • Cultural knowledge documented • Site condition • Sites identified	Good
Financial Opportunities	• Income through property • Number of Aboriginal people employed	Poor
Grasslands and surrounding forests	• Diversity within communities • Vegetation condition	Good
tunapri	• Activities undertaken to gain and share knowledge • Fire management • kipli availability • Palawa kani names use • Stories documented	Fair
Waterways and wetlands	• Water quality and quantity • Native species (galaxias)	Very Good

Table 1: trawtha makuminya Healthy Country Targets and their Health rating

BIRDS AND MAMMALS OF CONSERVATION SIGNIFICANCE

HEALTH	GOOD
INDICATORS	• Abundance / diversity • Presence / absence
PRIORITY THREATS	• Cats and Foxes • Introduced herbivores • Disrespectful use

trawtha makuminya is a diverse and largely pristine property covering 6,750 ha (TLC 2013). The property is in good ecological condition, with over 93% comprising intact native vegetation (Gowan Brae Interim Management Plan 2013). trawtha makuminya supports a diverse range of fauna habitats including subalpine woodlands and grasslands, alpine Sphagnum bogs, heathland, wetlands, and rainforest (Gowan Brae Interim Management Plan 2013). These diverse habitat support a rich array of vertebrate and invertebrate fauna.

Of special note is the presence of three carnivorous marsupials within the property. trawtha makuminya occurs within the Bronte region (IBRA region: Tasmanian central Highlands) which is one of the few areas in Tasmania that retains an intact guild of large carnivorous marsupials, the Tasmanian devil, spotted-tail quoll, and the eastern quoll. The Tasmanian devil and spotted-tail quoll are nationally threatened and the eastern quoll is a species of conservation concern (TLC 2014).

The extensive highland eucalypt forests that occur throughout the support large hollow bearing trees which provide nesting habitat for threatened bird species such as the masked owl and a number of other hollow dependent bird and mammal species (TLC 2014). Potential nesting habitat for the Grey Goshawk occurs along rivers and riparian zones across the property. The endangered Swift Parrot utilises has been recorded in the Bronte area during its northward migration before crossing Bass Strait to overwinter on mainland Australia (TLC 2014), and it is likely to utilise forests within the property during this autumn migration.

Threatened fauna which are known or likely to occur within the property are listed in Appendix 1. Eight threatened species have so far been recorded at trawtha makuminya, including three threatened mammals (Tasmanian devil, Spotted-tail Quoll and Eastern Barred Bandicoot), three threatened birds (the iconic Wedge-tailed Eagle, Grey Goshawk, and Masked Owl), the endangered highland Clarence Galaxias, and the Ptunarra Brown Butterfly. A number of other threatened species have been recorded on adjacent properties and are likely to also occur in the property.

COMMUNITY USE

HEALTH	FAIR
INDICATORS	• Community satisfaction • Level of visitation • Number of community events
PRIORITY THREATS	• Absence of active management • Wildfire • Difficult access • Disrespectful use

trawtha makuminya is a culturally and environmentally significant place for the Tasmanian Aboriginal community. It is a meeting place where members of the community can gather to share stories, forge connections, and strengthen community. trawtha makuminya carries a virtually uninterrupted cultural landscape, which gives evidence of the past tracks used by our ancestors. The property also holds an abundance of traditional resources, some of which provide the basis for ongoing cultural activities, for example basket making. The property also provides an opportunity for access for the contemporary Aboriginal community to traditional foods and medicines and the possibility of the existence of an ochre site will provide for continued use of this important cultural natural resource (Caring for Our Country 2012). trawtha makuminya also possesses many intangible values of great significance and value to the traditional owners, such as the sense of isolation and solitude, the presence of a living history, and the sense of unbroken ownership and connection with the land.

The button grass plains that surround the property are a direct result of the 'fire-stick' burning of landscape carried out by our ancestors and again will provide the opportunity for the contemporary Aboriginal community to learn about these activities. The property will also provide greater opportunity for community visits, including camping sites and development of accommodation within the property, and cultural participation and expression. These traditions and practices which will be continued within this

landscape will help to achieve on-going cultural well-being for Tasmanian Aborigines. Aboriginal ownership will also provide on-going participation in the management of the property (Caring for Our Country 2012).

CULTURAL PLACES, HERITAGE AND RESOURCES

HEALTH	GOOD
INDICATORS	• Appropriate visits • Cultural knowledge documented • Site condition • Sites identified
PRIORITY THREATS	• Vandalism • Wildfire • Disrespectful use

The property is part of the Big River Peoples territory (Smith et al. 1996, cited in the Gowan Brae Interim Management Plan 2013). The Central Plateau contains a known story of Aboriginal use and occupation that currently extends to the last glaciations of the area 20,000 years ago (Gowan Brae Interim Management Plan 2013).

Evidence of substantial Aboriginal occupation have been found in Aboriginal heritage assessments of trawtha makuminya. A survey by archaeologist Richard Cosgrove identified 31 aboriginal heritage locations on the Little River, of which 21 are within trawtha makuminya (cited in Pedder 2013). A further two sites were identified on the Nive River within the boundary of the property (cited in Pedder 2013). A recent survey by Pedder (2013) identified 17 aboriginal heritage sites containing aboriginal stone artefacts. Some of these locations on the Little River are likely to be some of the artefacts recorded by Cosgrove in the early 1980s, however most of them are newly recorded locations (Pedder 2013).

Rock art sites have been reported close to the property. Plomley (1991:68: cited in Smith et al 1996:24) also indicated that a corroboree was held near Lake Fergus on a yearly basis. Lake Fergus is just to the east of the property, indicating the significant Aboriginal cultural values (Gowan Brae Interim Management Plan 2013).

Other cultural places and resources presents on trawtha makuminya include the presence of native plants and abundant fauna such as wallabies and possums providing traditional bush tucker, stone quarries, traditional campsites and trading routes, and the possible existence of an ochre site on the property (Caring for Our Country 2012). There are also plans in place to establish a cremation site within the property. Another, less tangible resource provided by trawtha makuminya is simply a place of isolation, solitude and cultural healing.

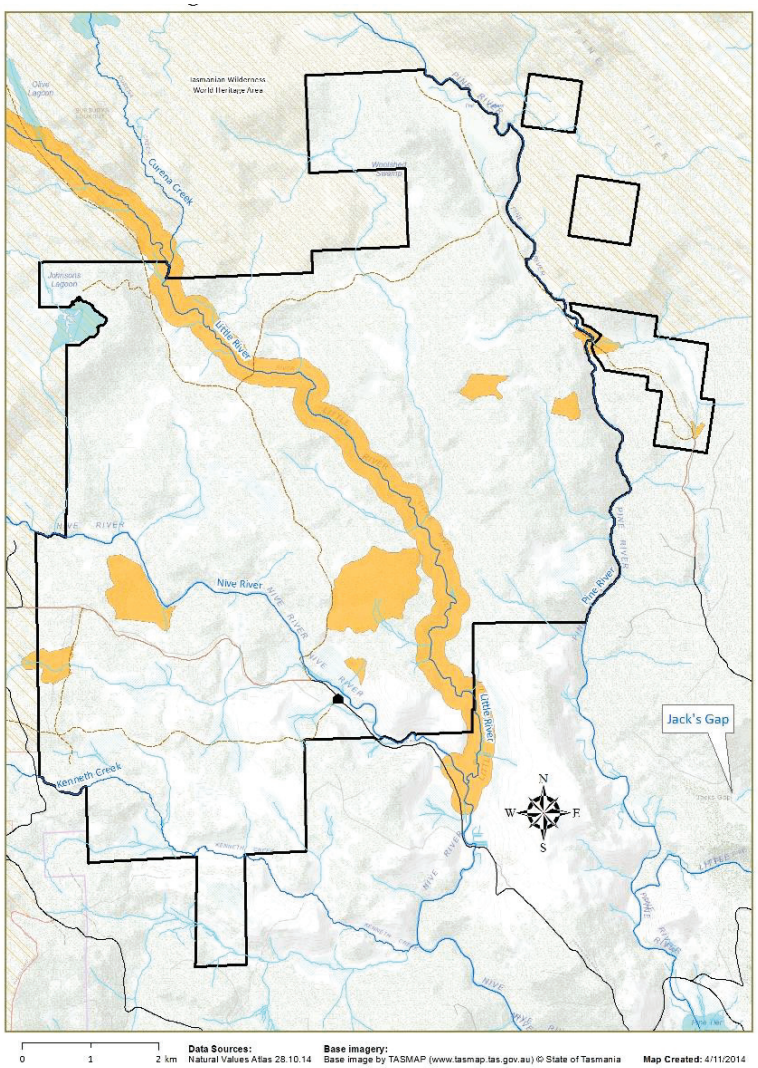


Figure 4: Cultural Heritage

Legend

Known Heritage Sites

Incl. chert quarries, hearths, scatters and isolated tools

Rivers and Creeks

Small tributaries

World Heritage Area (2014)

FINANCIAL OPPORTUNITIES

HEALTH	POOR
INDICATORS	• Income through property • Number of jobs, employment
PRIORITY THREATS	• Absence of active management • Inadequate engagement

trawtha makuminya is an opportunity for the community to explore options for a more independent economic base. For the community, being able to move to greater self-determination and reduce reliance on government is essential.

If financial opportunities are lost from trawtha makuminya this will undermine the sustainability of the property.

Some of the financial opportunities are directly linked to the health of other targets:

- Birds and Mammals of Conservation Significance: Funding for threatened species
- Grasslands and surrounding forests: Funding for threatened species
- Waterways and Wetlands: Potential for ecosystem service payments
- Community use: access to kipli

Other financial opportunities exist not because of specific targets but are more general:

- Hunting for Deer

- Tourism – due to the proximity to Walls of Jerusalem / Tasmania Trail / World Heritage Area / Bunker / Artists retreat
- Potential for a carbon project to help defray the management costs over the long term (Sprod and Hay 2012) but has set this aside to pursue
- The property could form the core of the development of a Conservation Trust.

GRASSLANDS AND SURROUNDING FORESTS

HEALTH	
INDICATORS	• Diversity within communities • Vegetation condition
PRIORITY THREATS	• Weed infestation • Wildfire • Introduced herbivores • Disrespectful use

trawtha makuminya occurs in the Tasmanian Central Highlands IBRA region. The native vegetation of trawtha makuminya is in excellent condition. The property is 93% intact native vegetation, 6.6% is regenerating cleared land and only 0.4% has been cleared (Gowan Brae Interim Management Plan 2013).

trawtha makuminya primarily supports a highland eucalypt forest ecosystem that is regenerating after low intensity forest harvesting over the past 40 years. In addition to highland eucalypt forest there are a number of non-forest vegetation communities, particularly heathlands and native grasslands which are rich in fauna and were important as traditional hunting grounds.

trawtha makuminya supports five vegetation communities listed as threatened (Appendix 2), including significant areas of highland Poa grassland which provide habitat for the threatened Ptunarra Brown Butterfly. Given the nature of the surrounding properties there are expected to be additional significant habitats as knowledge of the property grows (Gowan Brae Interim Management Plan 2013).

Frost and fire are important processes for the maintenance of these communities. Where frost prevents trees from surviving, grasslands, moorlands and heathlands occur, and where drainage is very poor, wetlands and aquatic systems dominate. Fire is also important in determining the distribution of vegetation across the property. Fire is a natural event in heathlands and native grasslands, and was used by the traditional owners to maintain open plains for hunting and travelling through.

Important nested targets under this target are threatened vegetation communities and threatened plants (see Appendix 2). and invertebrate fauna. This is because protection of the vegetation is the primary tool for securing primarily vegetation-based invertebrate habitats (see Appendix 1).

While the invertebrate fauna of trawtha makuminya are relatively poorly known, the threatened Ptunarra Brown Butterfly has been recorded in the past in several grasslands containing Poa tussocks near Bronte Park, and the species has been recorded at trawtha makuminya (TLC 2013; see Appendix 1).

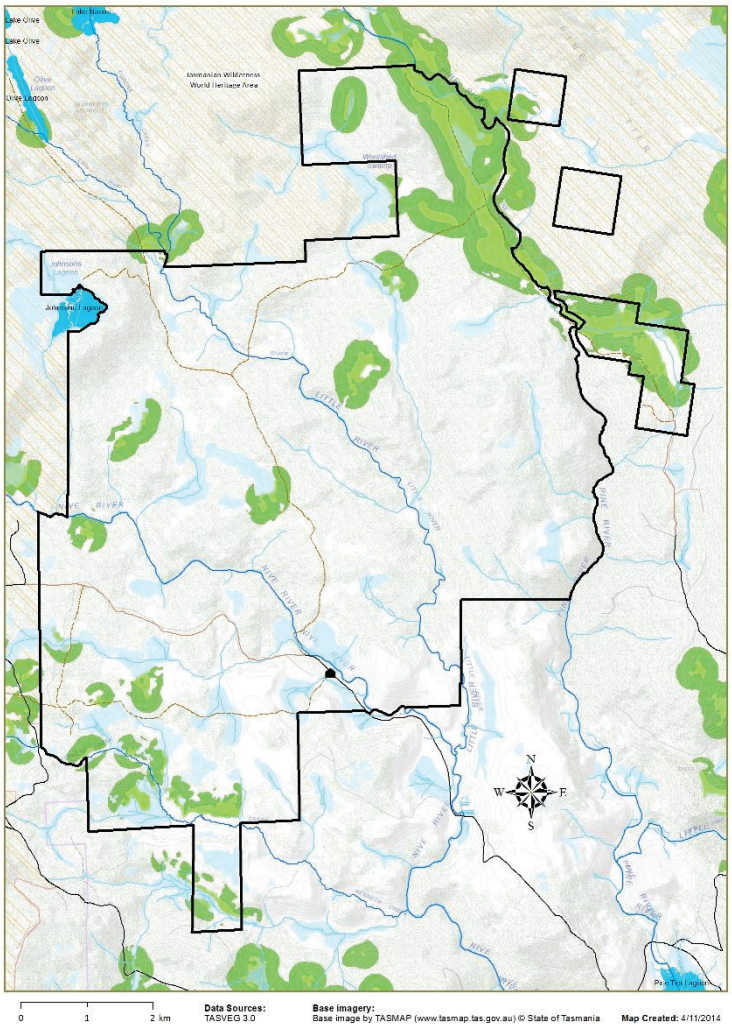


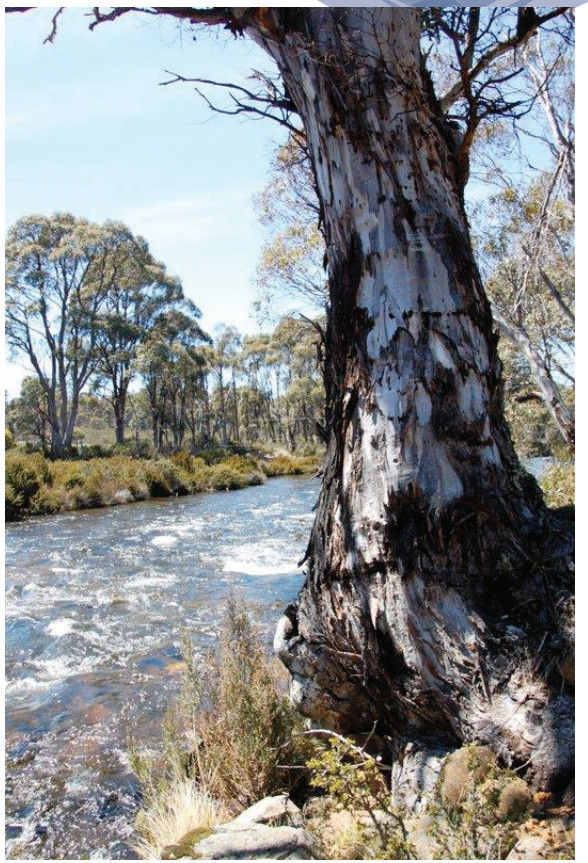
Figure 5: Grassland and surrounding forest

TUNAPRI

HEALTH	FAIR
INDICATORS	• Activities undertaken to gain and share knowledge • Fire management • kipli availability • Palawa kani names use • Stories documented
PRIORITY THREATS	• Absence of active management • Lack of interest

tunapri is an Aboriginal word that means 'to know' or 'to understand'. Knowledge and understanding are important elements in the connection Aboriginal people have with the land. Aboriginal people traditionally had an intimate knowledge and understanding of their environment that came from living closely with nature and through stories passed down from generation to generation. Modern Aboriginal people have had to adapt to living in an environment in which we have been dispossessed of our lands and where foreign cultures and ways of life have been forced upon us.

trawtha makuminya is a place that can contribute to our understanding of our culture and history, which will strengthen our connection to that land and to all lands. Examples of tunapri are cultural activities and practices such as collecting food, hunting, burning and speaking our language. It is important for the survival of our culture and for community cohesion that tunapri not only be maintained, but it needs to be increased– and more widely known within the Aboriginal community.



WATERWAYS AND WETLANDS

HEALTH	VERY GOOD
INDICATORS	• Water quality and quantity • Native species (galaxias)
PRIORITY THREATS	• Trout • Vandalism • Introduced herbivores

Three rivers traverse trawtha makuminya; the Nive, Pine and Little Rivers, tributaries of the Derwent River. These rivers are in largely pristine condition and flow freely throughout the dry summers (Gowan Brae Interim Management Plan 2013; TLC 2013). trawtha makuminya is largely free of processes which commonly threatened waterways such as clearing, intensive agriculture, and urban pollution.

Important wetlands occur within trawtha makuminya and provide important habitat for aquatic invertebrates, frogs and wading birds. Of particular note at trawtha makuminya are significant areas of alpine sphagnum peatland, nestled in pristine wetlands and grassland glades (TLC 2013). Alpine sphagnum peatlands are endangered nationally and are rare in Tasmania. Sphagnum peatland occurs on trawtha makuminya in areas where fire has been either absent or present with very low frequency and intensity. It usually occurs on constantly wet sites, and can be recognized by the lack of trees and dominance of moss beds which can be large and hummocky (FPA 2014). trawtha makuminya and the surrounding area comprise the most extensive areas of sphagnum bogs in Tasmania, including some scientifically unique 'standing wave' structures unknown elsewhere in the world (Morgan et al. 2010, cited in Gowan Brae Interim Management Plan 2013).

Johnston Lagoon, a pristine natural lake, occurs in the north-west corner of trawtha makuminya, and provides essential habitat for the threatened Clarence galaxias. Johnston Lagoon has no discrete creek feeding it, and the deep lake swells and contracts through the season, sometimes giving the impression there are mats of vegetation floating on the water (TLC 2013).

trawtha makuminya is also one of the primary sources of water downstream for many agriculture, industry and domestic water supply purposes. Maintaining and enhancing the condition of these upper catchments through conservation management will help to upgrade water quality and flow buffering ecosystem services (Gowan Brae Interim Management Plan 2013).

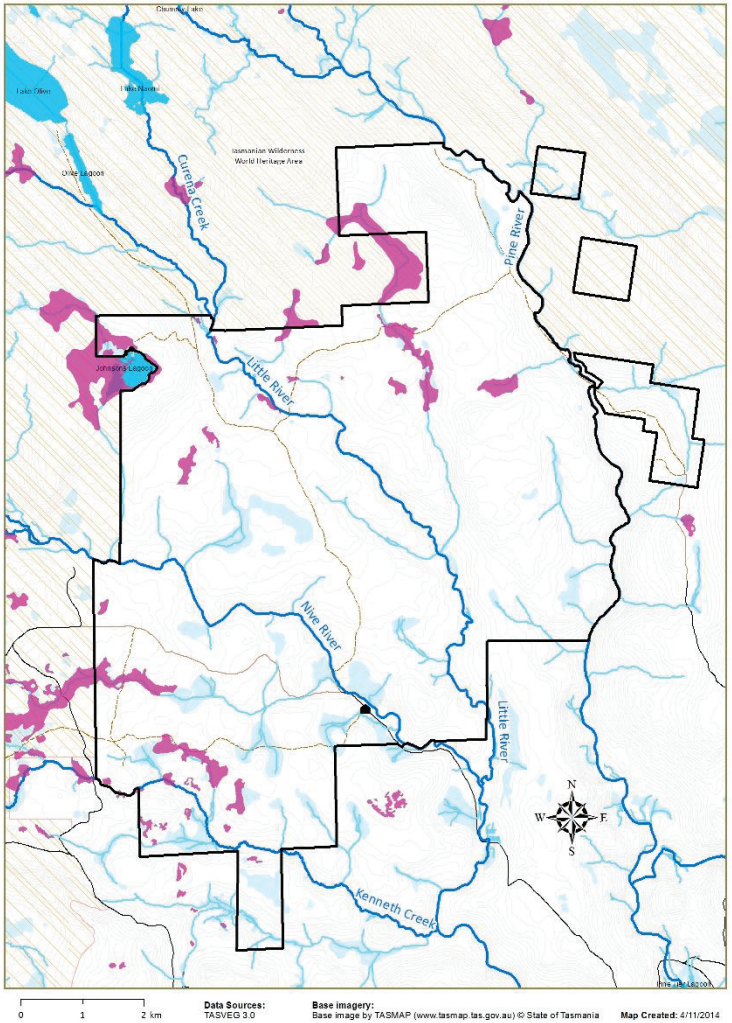
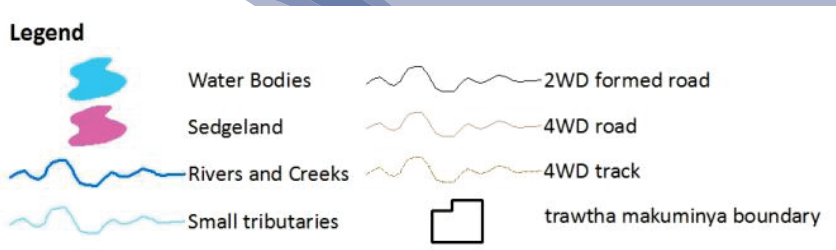


Figure 6: Waterways and wetlands



THREATS (PROBLEMS WE FACE)

Problems (Threats) on trawtha makuminya are things which damage the targets. They include things which might damage or offend our traditional cultural beliefs and sacred sites. Many of the issues on trawtha makuminya come from things that were done in the past, like introducing feral animals and grazing. Other issues are things that might happen in the future, like climate change or too many careless visitors.

Thinking carefully about the things that threaten our country helps us to decide which problems are the most serious and which ones are not so important. Giving a rating to each threat helps us to focus our activities so that the things we do can have the greatest benefit on the ground. We have thought a lot about which things are damaging our country.

We have rated the seriousness of each issue for each of the targets and have given a colour to each rating (Very High: red, High: yellow, Medium: light green, Low: dark green). One of the aims of our Healthy Country Plan is to convert as many of the yellow boxes (High threat) to green (Medium and Low threat) as we can.

The main problems we will focus on are:

Threats	Threat Rating
Wildfire	High
Inadequate engagement	
Introduced herbivores	Medium
Absence of active management	
Cats and Foxes	
Disrespectful use	
Weed infestation	Low
Conservation covenant	
Trout	
Rabbits	
Trespassers	

Table 2: Summary threat table

Threats \ Targets	Waterways and wetlands	Cultural places, heritage and resources	Community Use	Financial Opportunities	tunapri	Grasslands and surrounding forests	Birds and mammals of conservation significance	Summary Threat Rating
Wildfire		High	Medium			High		High
Inadequate engagement			Medium	High	High			High
Introduced herbivores	High	Low				Low	Low	Medium
Absence of active management			Medium	High	Medium			Medium
Cats and Foxes							High	Medium
Disrespectful use		Medium	Medium			Low	Medium	Medium
Weed infestation	Low					Medium		Low
Trout	Medium							Low
Rabbits							Medium	Low
Trespassers	Low	Low	Low			Low	Low	Low

Table 3: Detailed Table of the Threats and how we see them. In time we want to reduce them as much as possible.

WILDFIRE

Fire is a natural part of the Tasmanian environment. However, the impact of fire varies greatly between different vegetation communities and habitats, so even small and cool fires have the potential to severely damage fire sensitive habitats. The absence of fire from other habitats can also be a problem, for example, resulting in a build-up of fuels, increasing the chance of severe wildfire which can damage even fire tolerant habitats such as eucalypt forest and woodland. Wildfire can also pose a threat to human life, infrastructure and property.

Much of the native vegetation on trawtha makuminya is dry subalpine woodland, heath and grassland which are generally tolerant of fire. These vegetation types would by and large be able to recover from a severe wildfire event. However, several communities within trawtha makuminya are extremely vulnerable to fire (TLC 2014). Fire sensitive communities within trawtha makuminya include the nationally threatened sphagnum peatland, several important areas of wetland and the riparian zones.

The aim of fire management on trawtha makuminya is to explore and build and understanding of how fire is and can be used in the landscape, and to maintain or enhance biodiversity and protect natural values through appropriate ecological fire regimes in so far as this is consistent with the first objective. An important aim of fire management will be to exclude wildfire from the fire communities of high conservation significance. Fire management of the property can be achieved by reducing fuel loads around infrastructure; maintaining access tracks for the purpose of firefighting; co-operating with neighbours, local councils, Parks and Wildlife Service and the Tasmanian Fire Service to prevent the spread of bushfires; and working closely with relevant experts, including the Tasmanian Fire Service, fire ecologists, botanists and zoologists, to determine the appropriate burning regime in fire-tolerant vegetation (TLC 2014).

INADEQUATE ENGAGEMENT

A number of the Targets identified are associated directly with the community and their use of trawtha makuminya eg Community Use, tunapri, Cultural Places and Financial Opportunities. Many of these

are impacted directly by more commonly understood threats, such as wildfire, introduced animals and weeds.

As with the threat of the Absence of Active Management (see below), Inadequate Engagement reduces the capacity of the Aboriginal community to maintain the health of these Targets.

Inadequate engagement describes both the need for the broader Aboriginal community to engage with the needs of trawtha makuminya, and community organisations to support that engagement.

INTRODUCED HERBIVORES

Fallow Deer (Dama dama) are a pasture-edge and open forest deer species, introduced to Tasmania from Europe. Established fallow deer populations exist in several areas adjacent to the Central Plateau Conservation Area, particularly around Liawenee and north-west of Bronte Park. Fallow deer also occur within the CPCA at least on a seasonal basis in the area known as the Nineteen Lagoons and along the Pine River and Nive River valleys. Up to 20 adult male and female deer were observed in the trawtha makuminya area during a targeted deer survey in 2006 (Locke 2007). Fallow deer may currently be at climatic (altitudinal) limit on edge of CPCA, with the potential for further spread and expansion in numbers under a warming climate (Mallick and Driessen 2010).

Fallow deer graze on sweet, soft grasses and browse on new shoots, soft bark, seed heads, flowers and leaves (Bryant 2014). Impacts of deer include tramping sensitive areas, causing erosion, hindering revegetation efforts, and potentially spreading pathogens such as foot and mouth disease (Bryant 2014). Deer also have the potential to cause local extinctions of favoured food plants by overgrazing (Mallick and Driessen 2010). The species can also be a threat to the diversity of the grasslands and the regeneration of the woodlands (Gowan Brae Interim Management Plan 2013; TLC 2014). Fallow deer may also cause over-browsing of grasslands and succulent grasses and herbs in marshland and wetlands. This invasive species is partly protected in Tasmania and can only be destroyed under permit either during the recreational hunting season or for crop protection purposes (TLC 2014). The Parks and Wildlife Service acknowledge deer as a potential threat to the WHA particularly where reserved land adjoins agricultural land and it has a policy of controlling deer in the CPCA (Bryant 2014).

Sheep and cattle pose a threat to native vegetation through over browsing (particularly native grasslands), trampling of native plants, and compaction of soils. Stock, particular cattle, can also damage and pollute streams of water bodies, causing significant damage to wetland habitats. There is currently some grazing pressure within trawtha makuminya from wandering stock from these neighbouring properties (Gowan Brae Interim Management Plan 2013). While the areas of native grasslands are generally in excellent condition, the exclusion of wandering stock and reduced burning to maintain their condition and extent would likely further improve the structure and diversity of the grasslands (Gowan Brae Interim Management Plan 2013). Boundary intrusions by grazing stock will remain a concern requiring on-going maintenance of perimeter fences and cooperation with neighbouring land owners.

ABSENCE OF ACTIVE MANAGEMENT

trawtha makuminya was actively managed for millennia by Aboriginal people to meet their needs, using fire and other tools. As with most parts of Tasmania, trawtha makuminya was populated much of the time.

In more recent times, that active management has been removed from the landscape, directly impacting on the health of tratha makuminya and contributing to making other threats worse.

In other parts of Australia this is sometimes referred to as 'empty country' – places that should have people in them looking after them, but that do not.

CATS AND FOXES

Feral cats (Felis catus) have established in most habitats in Tasmania including undisturbed native vegetation and subalpine areas. Feral cats are known to prey on a diverse array of small to medium sized mammals and birds. Despite the relatively high public profile as an exotic species threatening native wildlife, there is relatively little documented evidence for their having been the primary cause of native species extinctions in Australia, with the exception of a number of species confined to islands and the desert/arid zone (Dickman 1996). However, while feral cats may not necessarily threaten native species with extinction, they can more significant impacts on the abundance and population structure of their prey (Mallick and Driessen 2010).

Feral cats are widespread in the Central Plateau area and are regularly trapped by land managers or shot by recreational hunters (TLC 2014). Feral cats have been observed on trawtha makuminya and have been flagged as a significant management issue requiring ongoing control measures (Gowan Brae Interim Management Plan 2013). However, eradication of feral cats is not feasible. Dedicated attempts to control the numbers of feral cats should be a priority only where cats can be shown to be an immediate threat to a specific conservation value. On trawtha makuminya, the principle high conservation species at potential risk from feral cats is the eastern barred bandicoot, which is known to be predated on by domestic cats (Mallick et al. 1997).

The European red fox (Vulpe svulpes) is a relatively recent arrival in Tasmania with the species apparently having been introduced intentionally in the 1990s (DPIPWE 2001; Saunders et al.2006). Predation by foxes represents an ongoing threat to the survival of more than 100 terrestrial species on mainland Australia(Coutts-Smith et al. 2007) and the fox is now listed as a Key Threatening Process under Australia's Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Sightings of the European red fox have been made on the Marlborough Highway to the east of trawtha makuminya by members of the public and fox baiting has been undertaken in the area by the Tasmanian Government's Fox-Free Task Force (TLC 2014).

DISRESPECTFUL USE / TRESPASSERS

Illegal removal of wood for firewood is a common problem, particularly in dry forest with abundant dead and fallen wood, in many isolated and remote areas of Tasmania where surveillance and detection is extremely difficult. Dead stags and old and moribund trees provide a rich source of hollows for hollow nesting birds and mammals, including nationally threatened birds such as the swift parrot (Saunders and Tzaros 2011) and masked owl (Bell and Mooney 1997). These dead and moribund trees are a common target for firewood collection, and their removal represents a significant loss of fauna habitat.

The three principal forms of vandalism that threaten trawtha makuminya include the lighting of fires leading to wildfire, illegal hunting, and four wheel driving. The TAC does not support non-traditional recreational hunting or four wheel driving as these activities have a negative impact on the conservation and cultural heritage values of the land, while controlled hunting of pest animals such as deer may be required for conservation purposes (Gowan Brae Interim Management Plan 2013).

Illegal four wheel driving and so-called ‘mud-running’ pose a significant threat to the natural values of trawtha makuminya through damage to soils on native vegetation, and through the potential introduction of disease in the mud that they carry from other places. There has been some localised damage along waterways as a result of unrestricted 4WD access, and ‘braiding’ of tracks as drivers attempt to avoid wet areas, or access new areas with their vehicles (Gowan Brae Interim Management Plan 2013). Currently drivers access the area via Gowan Brae Rd, although the property boundary has been gated (Gowan Brae Interim Management Plan 2013).

WEED INFESTATION

trawtha makuminya is in ecologically good condition, with a relatively low level of infestation by weed species. Selective logging has occurred in much of the woodland and forest areas of trawtha makuminya early this century, and these areas are regenerating well. Some weed species are present in the more heavily disturbed areas, however most of these are unlikely to persist following complete forest regeneration (Gowan Brae Interim Management Plan 2013).

Only two species of declared weeds are recorded within 5000 m of the property: ragwort (Senecio jacobaea) and gorse (Ulex europaeus) (NVA Natural Values Report, September 2014). Gorse is a Weed of National Significance (WONS). A number of additional weed species have been recorded from the neighbouring Skullbone Plains property, including scotch thistle (Onopordum acanthium), great mullein (Verbascum thapsus) and Californian thistle (Cirsium arvense). These weeds are also a legacy of stock grazing, soil disturbance and the movement of heavy machinery and vehicles along roads and during commercial timber harvesting (TLC 2014). Canary broom (Genista monspessulana) is also known from adjacent properties and has a high probability of spread (TLC 2014).

Only one invasive weed species is seen to be of current concern for trawtha makuminya (Gowan Brae Interim Management Plan 2013). Ragwort occurs at a number of locations within trawtha makuminya, most notably in the Johnston lagoon area, where weed control measures were undertaken in February 2013 (Whispering Landscapes, unpublished report). Ragwort is a declared weed in Tasmania and currently occurs in areas where soil disturbance has occurred. The species is known to be competitive in native grasslands that have high total grazing pressure (Gowan Brae Interim Management Plan 2013).

TROUT

Brown trout (Salmo trutta) occur in almost all areas of accessible rivers and streams in Tasmania, and are present in the rivers and streams within trawtha makuminya (Gowan Brae Interim Management Plan 2013). Brown trout are of particular concern within the property, as they are the primary threat to the endangered Clarence galaxias. The Clarence galaxias is found only in central Tasmania, where it is restricted to the Clarence and Nive River catchments. Currently, the Clarence galaxias is restricted to a few headwaters in the Clarence and Nive River catchments that do not support brown trout populations (TSU 1998). Trout are the main threat to this species. Brown trout predate on native galaxias and have the potential to destroy local population of Clarence galaxias.

Johnston lagoon supports a population of Clarence galaxias, and is one of less than 10 populations known to remain in existence (Inland Fisheries Commission, unpublished data). There are several streams within trawtha makuminya in which brown trout do not occur, and this is likely due to the marshy, braided nature of the wetland areas forming a barrier to trout entering into these streams (TSU 1998; Gowan Brae Interim Management Plan 2013). Johnsons Lagoon is free of brown trout as a result of the species

having been removed from this water body in the past (Gowan Brae Interim Management Plan 2013).

It is critical that brown trout are not able to move into these trout-free streams and water bodies that currently support the Clarence galaxias. There is also a risk that brown trout will be intentionally translocated into these water bodies. Ongoing cooperation between the TAC, the Tasmanian Government's Threatened Species Unit and the Inland Fisheries Service is required to ensure that this does not happen (Gowan Brae Interim Management Plan 2013).

RABBITS

The European rabbit (Oryctolagus cuniculus) is widespread over the Central Plateau area (Cullen 1995). Rabbits can impact heavily on the environment through overgrazing of native plants, particularly palatable grassland and shrub species, and causing significant soil erosion. Within trawtha makuminya, rabbits are a threat to the diversity of the grasslands and the regeneration of the woodlands (Gowan Brae Interim Management Plan 2013).

GOALS AND OBJECTIVES (WHAT WE WANT TO ACHIEVE)

Goals, Objectives and Projects set out the way we will reduce threats and improve targets:

1. A Goal is how we want our Targets to be, and is a statement of what we should see in the health of the target (ie a shift from yellow to green in the health table)

2. An Objective is what we want to do about our threats, as part of reaching our Goal, and is a statement of what we should see in the threat ranking (ie a shift from yellow to green in the threat table)

3. A Project is made up of Strategies and Actions we will do to help us reach our Objectives and Goals.

There are seven (7) goals for the trawtha makuminya Plan. That is, there are nine areas we would like to improve our Targets, mainly focusing on the Targets with only Fair health, but some with Good are also to be improved. We should measure progress toward the Goal by measuring the health of the Target, and revisiting the health table above.

There are then seven (7) Objectives across the Threats, and these mostly focus on the high-ranked threats. Achieving the Objectives should see the threats reduce, and we should measure this by revisiting the threat table, after we measure how many and where the threats are.

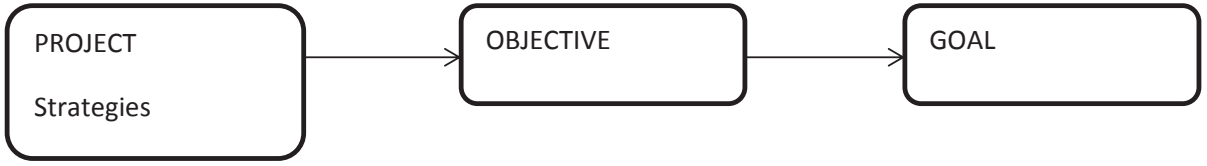


Figure 7: Relationship between Projects, Strategies, Objectives and Goals

GOALS for Targets	TARGETS supported	2015 HEALTH 2020	
1. A 'good' understanding of the location and condition of Cultural Places, Heritage and Resources on all of trawtha makuminya by 2020	Cultural places, heritage and resources	GOOD	GOOD
2. Aboriginal community financial position is improved through business opportunities involving trawtha makuminya	Financial Opportunities	POOR	FAIR
3. Populations of Birds and mammals of conservation significance are no less in 2025 than in 2015	Birds and mammals of conservation significance	GOOD	GOOD
4. The condition and diversity of species in Grasslands and surrounding forests are maintained in 2015 condition	Grasslands and surrounding forests	GOOD	GOOD
5. trawtha makuminya is a place where tunapri (fire, kipli, palawa kani, stories) will be shared and recorded over the next 5 years	tunapri	FAIR	FAIR
6. trawtha makuminya is used regularly (Aug-Apr 2/month, May-Jul 1/month) by the Aboriginal community for cultural and recreational purposes by 2020	Community Use	FAIR	GOOD
7. Waterways and wetlands on trawtha makuminya are maintained in very good condition	Waterways and wetlands	VERY GOOD	VERY GOOD

Table 4: Goals for the trawtha makuminya plan

OBJECTIVES for Threats	THREATS reduced	2015 THREAT 2020	
1. All users of trawtha makuminya are authorised and respectful, and do no harm*	Disrespectful use / Trespassers	MEDIUM	LOW
2. An established and regular presence on trawtha makuminya is able to monitor the use of the property and ensure less negative impacts			
3. By 2020, introduced herbivores have no more impact on trawtha makuminya than in 2015*	Introduced herbivores	MEDIUM	LOW
4. Every year we have the funds to fulfil high priority aspects of the plan and maximise employment	Absence of active management	MEDIUM	MEDIUM
5. Reduce and maintain the area of weeds on trawtha makuminya to less than 10% of the 2014 area	Weed infestation	LOW	LOW
6. Reduce the risk and impact of destructive wildfire on trawtha makuminya	Wildfire	HIGH	MEDIUM
7. trawtha makuminya is actively managed to protect its values using tunapri and other knowledge	Inadequate engagement	HIGH	LOW

Table 5:Objectives for the trawtha makuminya plan

PROJECTS AND STRATEGIES (JOBS TO DO)

The trawtha makuminya Healthy Country Plan will be implemented through nine Projects that strengthen our targets and weaken the threats, moving us toward our vision.

There are many things we would like to do to help our country and to keep it healthy. But because of limitations in the number of people to do the work and constraints in funding we have to prioritise our work.

There are many strategies that we will implement to help achieve our Goals and Objectives. These are the jobs we all have to do.

The Strategies, Objectives and Goals have been arranged into operational Projects which help the things we value most (the targets) and address the most serious issues (the threats). We also want to carry out projects which have the most chance of making a real difference to the health of our country.

Each project focuses on supporting a number of targets and their goals, an objective, and on a strategy or strategies to achieve that objective. There are seven (7) Projects:

PROJECT	OBJECTIVES	GOALS
01. Weed control	5	4, 7
02. Fire Management	6	4, 6
03. Aboriginal Community use	7	2, 5, 6
04. Financial Opportunities	4	2
05. tunapri, Cultural places, Heritage and resources	7	1, 3, 5
06. Wetlands and waterway management	1, 3	3, 7
07. Integrated approach to operations	2	1, 2, 3, 4, 5, 6, 7

Table 6: Projects, Goals and Objectives

The strategies that make up each project are listed below. A detailed workplan for each project is provided in a separate document.

The Goals and Objectives linked to each Project help monitor our progress and are shown in the table above. We will continue to adjust our Strategies if we are not achieving the expected results.

Projects, Strategies and their priority

Item	Strategy	Rating	Priority
01. Weed control	Annual weed control	Effective	Medium
02. Fire Management	Build overall TAC fire management capacity	Less Effective	Medium
	Establish and implement annual Fire Management Plan that includes tunapri	Effective	High
	Increase the understanding of fire on trawtha makuminya systems	Effective	High
03. Aboriginal Community use	Introducing people to site through facilitated access trips in addition to those implementing other strategies	Effective	High
	Promote the use of trawtha makuminya for independent Aboriginal community visitors	Effective	Medium
04. Financial Opportunities	Businesses outside the Aboriginal community using trawtha makuminya must employ community members	Less Effective	Low
05. tunapri, Cultural places, Heritage and resources	Build the baseline (tunapri and other)	Effective	High
	Include community in on-country activities to share knowledge	Very Effective	High
06. Wetlands and waterway management	Ensure river crossings and road infrastructure is appropriate for purpose to stop driving through rivers and wetlands	Effective	High
	Remove Lease and fix the fence	Less Effective	Low
07. Integrated approach to operations	Annual property patrol to look at weeds, trespassers, heritage and feral animals	Effective	High
	Establish the funds and staff capacity to manage trawtha makuminya in 5 years following the management plan	Effective	High
	Maintain infrastructure	Less Effective	High
	Purposeful contact with all neighbours at least once per year	Less Effective	High
	Raise funds for trawtha makuminya from a variety of sources to run the property	Effective	High
	Visitor Management	Effective	High

Table 7: Project strategies and priority

IMPLEMENTATION (ACTIONS)

This Plan will be implemented by TAC using a detailed Operational Plan specifying what we will do, when we will do it, and how we will accomplish it. The Operational Plan is a separate document to this one.

GOVERNANCE

The trawtha makuminya plan covers a period of 5 years, and overall responsibility for its implementation rests with TAC Directors supported by an Operational team of employed staff (Coordinator / Manager and others), as well as the broader Tasmanian Aboriginal community.

To make the Plan work will need coordination of annual work programs and reporting on what has been done and what has been achieved.

A Plan Coordinator will ideally be appointed and work in conjunction with a Management Committee and together they will complete an annual Project Work Plan that implements the Projects set out in the Plan.

Figure 8: Annual work planning and review cycle

An Operational Team will produce Quarterly Work Plans that reflect, on a month by month basis, the aims and objectives of the years' Annual Work Plan.

To make sure that the actions and achievements of the Plan are properly documented and to help the Operations team monitor progress, they will also complete Quarterly, Annual, and mid-term reports (see section below).

On the ground

The operational team rangers will now be able to annually prioritise activities – what we do first. With the necessary resources, these activities will be implemented and the results monitored to track the desired improvements to the health of our identified targets.

LEARNING AS WE GO (MONITORING, REPORTING AND IMPROVEMENT)

The fundamental question facing any team is: "Are our strategies working?" To answer this question, we will periodically collect data on a number of indicators that gauge how well our strategies are keeping the critical threats in check and, in turn, whether the health of our targets is improving.

When we talk about Reporting, we are looking at reporting on 3 things:

- **Implementation** – are we using the plan?
- **Effectiveness** – are the strategies working?
- **Status** – are our targets improving?

Figure 9 shows how these three things are linked together.

Figure 10 provides a general calendar to follow for when these would be done over the life of the plan.

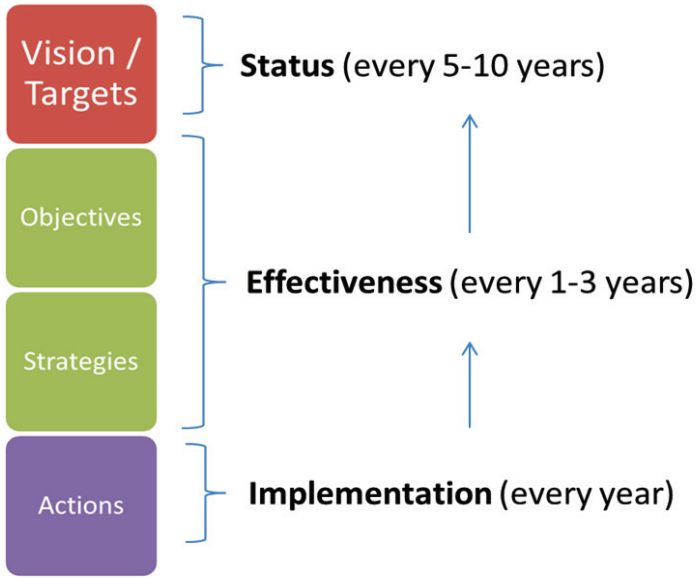


Figure 9: How the different monitoring fits together to tell us what we are achieving

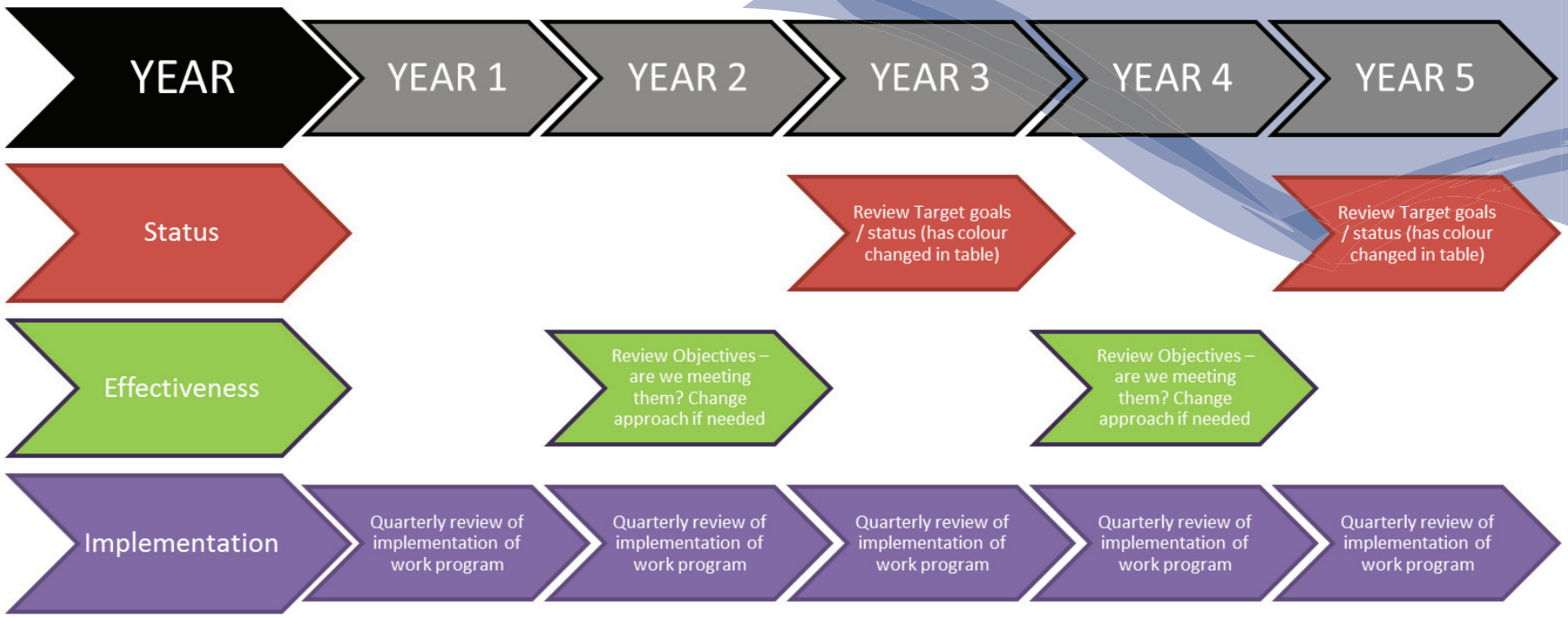


Figure 10: Calendar showing times for each type of review and reporting

Implementation Monitoring (Activity / Jobs)

Implementation monitoring and reporting is the simplest and most frequently carried out. Implementation monitoring simply answers the question "Are we using the plan?", and is a regular review of the Actions in the work plan to see if they are being done, and check their progress.

When and how should it be done?
For trawtha makuminya it is recommended that an Operational team meet **quarterly** and review the work plan, giving each activity

one of the following ranks and recording any relevant factors that explain the rating:

- **Scheduled for Future Implementation:** Activity is not yet started
- **Major Issues:** Ongoing, but has major issues that need attention
- **Minor Issues:** Ongoing, but has minor issues that need attention
- **On Track:** Ongoing, generally on track
- **Completed:** Successfully accomplished
- **Abandoned:** No longer relevant or useful

Who will do it?
Implementation monitoring should be done by the Coordinator / Manager, ideally with the Ranger team.

What happens to the results?
The results should be put together in a report and given to the Management Committee with any recommendations for change.

Effectiveness Monitoring (Strategy / Objectives)

Effectiveness monitoring focuses on the Strategies and Objectives, and whether we are seeing change that shows we are being successful. Effectiveness monitoring builds on implementation monitoring, but in addition to simply recording activity, we look at all the information we have collected from the work completed and think about what that it showing us (eg more or less weeds)

When and how should it be done?
Objectives should be reviewed every two years, and the results of Strategies looked at to report against progress toward achieving the Objective. Ideally this would happen two months before the Annual General Meeting.

Who will do it?
Effectiveness monitoring should be done by Ranger team members guided by outside experts.

What happens to the results?
The results should be put together in a report and given to the Board / AGM and Funders with any recommendations for change.

Status Monitoring

Status monitoring focuses on the Targets and their ongoing health. It tells us whether, with all the activities and successes in our strategies, we are actually seeing an improvement in the targets we are working to make healthy. Status monitoring is typically the most difficult of the three levels of monitoring, and requires the greatest investment in time and resources, both for data capture as well as for analysis.

When and how should it be done?
Status monitoring will often require specialist skills, particularly for analysis. Baseline conditions will need to be established to confirm the health of Targets. Specific monitoring approaches will need to be determined based on each Target, and which agencies are able to provide the data to the TAC.

Who will do it?
Status monitoring will be carried out by management teams supported by other organisations / agencies – the coordinator will need to liaise with others to secure the data or ideally the analysis to report progress.

What happens to the results?
The results should be put together in a report and given to the project team, the community, Board and Funders with any recommendations for change.

Adapting the Plan

Adapting the plan is an ongoing process of regular review, and is not left to the end of the proposed plan time. Creating a 'culture' of review is important to ensure that work being done in the plan is as effective as possible, and requires the following key elements:

1. Regular (quarterly) review of **implementation** by the Operational team

2. Effective learning also depends on being able to review previous work, outcomes and results. It is essential that a simple approach to information be established to keep track of all records relating to implementing the plan. A simple 'folder' approach is cheap and easy to implement, storing any materials (reports, photographs, Cyber tracker logs etc) in folders under project or target names (Figure 11).

Supported by simple record keeping the small regular reviews will feed up into larger mid-term and full plan reviews as shown in Figure 12.

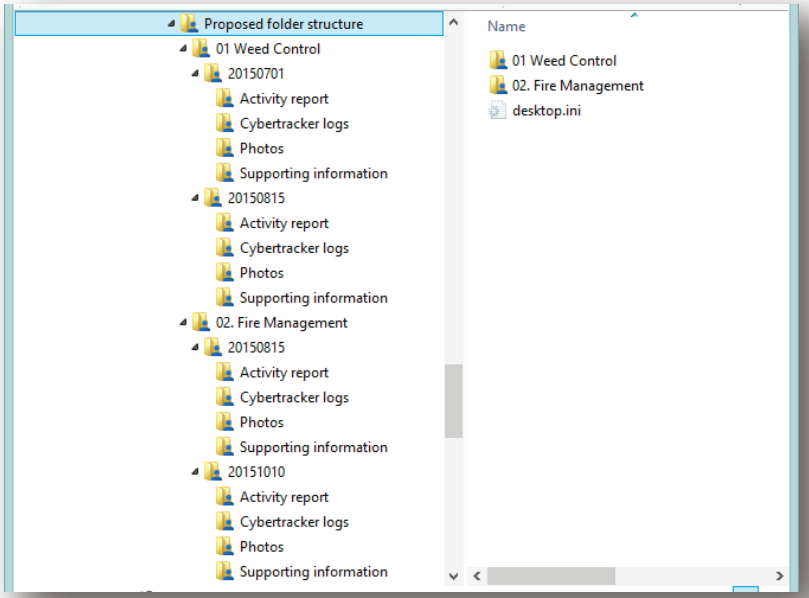


Figure 11: Example folder structure for storing information on projects for later reporting and analysis

Figure 12: Regular reporting feeds into full and mid-term plan reviews

It may be helpful to establish an Advisory Committee of experts in various aspects of implementing and monitoring management plans, to help the Directors and the Operations team put the plan in place. An Advisory Committee can have a number of benefits:

- Access to additional skills
- Builds plan credibility to a wider audience
- Keeps the plan and process moving

An Advisory Committee may need to meet no more than twice per year, and possibly eventually only once per year.

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APPENDIX 1: IMPORTANT FAUNA AND FLORA

Fauna of conservation significance for trawtha makuminya (based on a DPIPWE Natural Values Atlas Report in the Gowan Brae Interim Management Plan [2013], supplemented by additional reports for neighbouring properties), showing threatened species status (State and Commonwealth), habitat/s within the , and principal threats.

Species	Recorded	Threatened status (EPBC[1]/ TTSPA[2])	Habitats within the	Principal threats – note that most of the threats below are absent on the
Tasmanian devil *Sarcophilus harrisii*	Yes (TLC 2013)	E/e	Favours mixed aged forest often bordering grasslands, pasture and disturbed sites, and will readily use roads and tracks (TLC 2014)	Devil Facial Tumour Disease (DFTD), loss/fragmentation of foraging and Denning habitat (TSS 2014a)
Spotted-tailed quoll *Dasyurus maculates*	Yes (TLC 2013)	V/r	Habitat generalist, forages in native forests, woodlands and grasslands, also agricultural land	Clearing of native habitats (TSS 2014b)
Eastern-barred bandicoot *Perameles gunnii*	Yes (TLC 2013)	V/-	Areas of native Poa grassland	Clearing/conversion of remnant native grassland habitat (Mallick et al. 1997)
Tasmanian bettong *Bettongia gaimardi*	No (recorded on adjacent Skullbone Plains; TLC 2014)	-/-	Dry eucalypt forests with open shrubby understory, particularly on shallow soils (Driessen et al. 1997)	Clearing/fragmentation of dry forest habitat
Wedge-tailed eagle *Aquila audax fleayi*	Yes (TLC 2013)	E/e	contains foraging habitat, potential for suitable nest sites (mature eucalypt forest with emergent canopy trees and sheltered aspect)within area	Clearing of nesting habitat, disturbance of nesting birds, persecution (TSS 2014c)
White-breasted sea-eagle *Haliaeetus leucogaster*	No (recorded on adjacent Skullbone Plains; TLC 2014	-/v	Regularly forages over water bodies a few kilometres to the south of the and areas such as adjacent to Pine Tier Lagoon are suitable for breeding (TLC 2014)	Clearing of nesting habitat, disturbance of nesting birds, persecution (TSS 2014d)
Grey goshawk *Accipiter novaehollandiae*	Yes (TLC 2013)	-/E	Potential nesting habitat along rivers and riparian zones across the property, species is occasionally seen foraging in the wetter forest margins in the area (TLC 2014)	Clearing of nesting habitat(TSS 2014e)
Masked owl *Tyto*	Yes (TLC	V/e	Highland eucalypt forests	Clearing of nesting

Species	Recorded	Threatened status (EPBC[1]/ TTSPA[2])	Habitats within the	Principal threats – note that most of the threats below are absent on the
novaehollandiae castanops	2013)		within the with large with hollow bearing trees provide potential nesting habitat (TLC 2014)	habitat (TSS 2014f)
Swift parrot *Lathamus discolour*	No (recorded on adjacent Skullbone Plains; TLC 2014	E/e	Utilises forests in the area of the during northward migration in autumn (TLC 2014)	Clearing of foraging (flowering *Eucalyptus*, particularly blue gum) and nesting habitat (mature/old-growth eucalypt forest containing trees with hollows)
Clarence galaxias *Galaxias johnstoni*	Yes (TLC 2013)	E/e	Sites in include: The lower limit of the distribution on 'Skullbone Plains Creek' 448965 E 5346718N; further up the creek at where the old road fords the creek at 447939 E 5347027 N; and at Johnsons Lagoon where the borders the lagoon at 448348 E 5352026 N (IFC unpublished data)	Expansion of brown trout into streams/wetlands were the species survives (TSS 2006)
Western Paragalaxias *Paragalaxias julianus*	No (within species' range, potential habitat)	-/r	Lakes in the upper reaches of the Ouse, James and Little Pine rivers	Predation by trout, water-level fluctuations
Ptunarra brown butterfly *Oreixenica ptunarra ptunarra*	Yes (TLC 2013)	V/en	Recorded in the past in several grasslands containing Poa tussocks near Bronte (TLC 2014), has been sited on the (TLC 2013)	Clearing conversion of remnant native grassland habitat
Miena jewel *Castiarina insculpta* beetle	No (within species' range, potential habitat)	-/En	Identified in *Ozothamnus hookeri* habitat near Liawenee north-west of the (TLC 2014), may occur in suitable habitat within the	Loss of habitat through conversion, grazing or fire, illegal collection (TSS 2013, 2014g)

Table 8: Fauna of conservation significance for the trawtha makuminya

[1] Commonwealth *Biodiversity Protection and Biodiversity Conservation Act 1999*
[2] Tasmanian *Threatened Species Protection Act 1995*

Flora of conservation significance for trawtha makuminya (based on a DPIPWE Natural Values Atlas Report in the Gowan Brae Interim Management Plan [2013], supplemented by additional reports for neighbouring properties), showing threatened species status (State and Commonwealth) and principal threats.

Species	Recorded?	Threatened status (EPBC[1]/TTSPA[2])	Principal threats
Eucalyptus gunnii ssp. Divaricata Miena cider gum	Yes (TLC 2013)	E/r	Drought, browsing, inappropriate fire regimes, fragmentation, climate change, and clearing (TSS 2010)
Leucochrysum albicans grassland paper daisy	Yes (TLC 2013)	E/e	Conversion of native vegetation, particularly for pasture improvement and cropping (TSS 2003)
Colobanthus curtisiae Curtis' colobanth	Yes (TLC 2013)	V/r	Clearing of grassland and grassy woodland habitat on arable soils for cropping
Prasophyllum tadgellianum small alpine leek orchid	Yes (TLC 2013)	-/r	Very few populations recorded, at risk from stochastic events due to restricted extent of occurrence (TSS 2000)
Planocarpa nitida shiny cheeseberry	Yes (TLC 2013)	-/r	Rare species
Hovea montan mountain purplepea	Yes (TLC 2013)	-/r	Rare species
Glycine latrobeana clover glycine	No (recorded on adjacent Skullbone Plains; TLC 2014)	V/v	Habitat loss (Carter and Sutter 2010)
Carex capilliacea yellow leaf sedge	No (recorded on adjacent Skullbone Plains; TLC 2014)	-/r	Rare species
Ranunculus pumilios ubsp. *Pumilo* ferny buttercup	No (recorded on adjacent Skullbone Plains; TLC 2014)	-/r	Rare species
Muehlenbeckia axillaris matted lignum	No (recorded on adjacent Skullbone Plains; TLC 2014)	-/r	Rare species
Viola cunninghamii alpine violet	No (recorded on adjacent Skullbone Plains; TLC 2014)	-/r	Rare species
Pentachondra ericifolia fine frillyheath	No (recorded on adjacent Skullbone Plains; TLC 2014)	-/r	Rare species
Ucinia elegans handsome hooksedge	No (recorded on adjacent Skullbone Plains; TLC 2014)	-/r	Rare species
Plantago glacialis	No (recorded on	-/r	Rare species

Species	Recorded?	Threatened status (EPBC[1]/TTSPA[2])	Principal threats
small star plantain	adjacent Skullbone Plains; TLC 2014)		

Table 9: Flora of conservation significance for the trawtha makuminya

1 Commonwealth *Biodiversity Protection and Biodiversity Conservation Act 1999*
2 Tasmanian *Threatened Species Protection Act 1995*

Threatened the vegetation communities mapped for trawtha makuminya (based on a DPIPWE Natural Values Atlas Report in the Gowan Brae Interim Management Plan 2013), showing threatened status (State and Commonwealth).

Species	Threatened status (EPBC[1]/TTSPA[2])
Highland grassy sedgeland	r,e/-
Highland Poa grassland	r,e/-
Sphagnum peatland	R/E
Freshwater aquatic sedgeland and rushland	v/-
Wetland (undifferentiated)	v/-
Subalpine *Diplarrena latifolia* rushland	r/-

Table 10: Threatened the vegetation communities mapped for trawtha makuminya

1 Commonwealth *Biodiversity Protection and Biodiversity Conservation Act 1999*
2 Tasmanian *Threatened Species Protection Act 1995*

APPENDIX 2: VEGETATION COMMUNITIES

Vegetation communities mapped for trawtha makuminya (based on a DPIPWE Natural Values Atlas Report in the Gowan Brae Interim Management Plan 2013), showing area of each vegetation type.

Threatened vegetation communities present on the property are given in Appendix 1.

Species	Area (ha)
Eucalyptus pauciflora forest and woodland on dolerite	3220.8
Eucalyptus delegatensis dry forest and woodland	1313.74
Highland grassy sedgeland	541.26
Regenerating cleared land	439.61
Subalpine heathland	273.71
Highland Poa grassland	266.85
Eucalyptus coccifera forest and woodland	229.53
Eucalyptus rodwayi forest and woodland	220.02
Eastern alpine sedgeland	181.98
Eastern alpine heathland	82.71
Leptospermum scrub	24.37
Sphagnum peatland	21.82
Water, sea	21.50
Eucalyptus gunnii woodland	9.44
Freshwater aquatic sedgeland and rushland	8.09
Wetland (undifferentiated)	6.21
Nothofagus rainforest undifferentiated	4.98
Lichen lithosere	3.39
Agricultural land	1.63
Inland heathland (undifferentiated)	1.22
Subalpine *Diplarrenalatifolia*rushland	0.89
Leptospermum with rainforest scrub	0.76
Urban areas	0.24

Table 11: Vegetation communities mapped for trawtha makuminya

1 Commonwealth *Biodiversity Protection and Biodiversity Conservation Act 1999*
2 Tasmanian *Threatened Species Protection Act 1995*

Phone: (03) 6234 0700
Email: hobart@tacinc.com.au

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TASMANIAN ABORIGINAL CENTRE INC.