Meehan Range
(Redgate Section)

Nature Recreation Area
Meehan Range Nature Recreation Area (Redgate Section) Management Statement 2018

The Tasmania Parks and Wildlife Service (PWS) acknowledges the Aboriginal people of Tasmania and pays its respects to their Elders, past, present and emerging.

The management statement applies to the Meehan Range (Redgate Section) Nature Recreation Area, which is managed under the National Parks and Reserves Management Act 2002 and is subject to the National Parks and Reserved Lands Regulations 2009.

This management statement incorporates feedback on earlier drafts provided by various groups and public authorities. Many people have assisted in the preparation of this plan with ideas, feedback and advice. Their contribution to its development is appreciated and acknowledged.

Jason Jacobi
General Manager
Tasmania Parks and Wildlife Service

ISBN: 978-1-74380-030-0

© Department of Primary Industries, Parks, Water and Environment. 2018

Cover photo: D. Donald

Published by:
Department of Primary Industries, Parks, Water and Environment

GPO Box 1751
HOBART TASMANIA 7001


COVER IMAGE: Mountain bike riders in the Meehan Range, by Jonathan Wherrett.
### Contents

**Summary** ................................................................. 7
- Protection of threatened species and vegetation communities ...... 7
- Encouraging appropriate recreation and use. ............................... 7
- Reduction of threats to the reserve ........................................... 8

**1. Introduction** .......................................................... 9
  1.1 Reservation .................................................................. 9
  1.2 Location ........................................................................ 9

**2. Reserve Management Framework** ................................. 11
  2.1 Vision .......................................................................... 11
  2.2 Purpose of this Management Statement .............................. 11
  2.3 Legislation and Management Objectives .............................. 11
  2.4 Policies and Plans ......................................................... 13
    - Tasmanian Reserve Management Code of Practice 2003 .... 13
    - Management Zoning Policy ............................................. 13
    - Recreation Standards Framework (RSF) Policy ................. 13
    - Other PWS Policies ....................................................... 13
  2.5 Key Desired Outcomes .................................................. 14

**3. Conservation of Reserve Values** ................................. 15
  3.1 Landscape Values ................................................................ 15
    - Management Considerations .......................................... 15
    - Desired Outcomes ....................................................... 15
    - Management Response ................................................ 15
  3.2 Geology and Soils .......................................................... 16
    - Management Considerations .......................................... 16
    - Desired Outcomes ....................................................... 16
    - Management Response ................................................ 16
  3.3 Flora and Fauna ............................................................ 17
    - Flora ............................................................................ 17
    - Vegetation ...................................................................... 18
    - Fauna ............................................................................ 19
    - Management Considerations .......................................... 20
    - Desired Outcomes ....................................................... 20
    - Management Response ................................................ 20
  3.4 Aboriginal Heritage Values ............................................. 21
Management Considerations .................................................... 21
Desired Outcomes ................................................................. 21
Management Response ......................................................... 21
3.5 Historic Heritage Values .................................................... 22
Management Considerations .................................................... 22
Desired Outcomes ................................................................. 22
Management Response ......................................................... 22
4. Threats to Reserve Values .................................................... 23
4.1 Climate Change ................................................................. 23
Management Considerations .................................................... 23
Desired Outcomes ................................................................. 23
Management Response ......................................................... 23
4.2 Weeds, Pests and Diseases .................................................. 23
Weeds ...................................................................................... 24
Pests ......................................................................................... 25
Disease ..................................................................................... 25
Management Considerations .................................................... 26
Desired Outcomes ................................................................. 26
Management Response ......................................................... 26
4.3 Fire ...................................................................................... 26
Management Considerations .................................................... 27
Desired Outcomes ................................................................. 27
Management Response ......................................................... 27
4.4 Threats from Human Use .................................................... 27
Unauthorised access .............................................................. 27
Illegal wood cutting ............................................................... 28
Unauthorised works ............................................................... 28
Arson ....................................................................................... 28
Rubbish Dumping ................................................................. 28
Management Considerations .................................................... 28
Desired Outcomes ................................................................. 28
Management Response ......................................................... 28
5. Recreational Use and Infrastructure ..................................... 29
5.1 Car parking ......................................................................... 29
5.2 Recreational use ............................................................... 29
Mountain biking ................................................................. 29
Horse riding ............................................................................ 32
Walking and trail running ........................................................... 32
Dog walking .............................................................................. 32
Rogaining and orienteering ....................................................... 32
Rock climbing ........................................................................... 32
Bird watching and nature study ................................................. 33
Management Considerations .................................................... 33
Desired Outcomes .................................................................... 34
Management Response ............................................................ 34
5.3 Other Uses ............................................................................. 39
Competition and Events ............................................................ 39
Training ..................................................................................... 39
Research and Education.......................................................... 39
Telecommunications ................................................................. 39
Management Considerations .................................................... 39
Desired Outcomes .................................................................... 39
Management Response ............................................................ 39
5.4 Volunteers .............................................................................. 40
Management Considerations .................................................... 40
Desired Outcomes .................................................................... 40
6. Management Zoning ......................................................... 41
Protection Zone .......................................................................... 41
Natural Zone ............................................................................. 41
Recreation Zone ....................................................................... 41
Other Zones .............................................................................. 42
7. Monitoring and Evaluation ............................................... 44
7.1 Key Desired Outcomes ........................................................... 44
7.2 Management Statement Review ............................................. 45
Management Considerations .................................................... 45
Desired Outcomes .................................................................... 45
Management Response ............................................................ 46
Sources of Further Information ................................................ 47
Appendix 1 – Monitoring the Highest Priority Key Desired Outcomes 49
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4WD</td>
<td>Four-wheel drive vehicle</td>
</tr>
<tr>
<td>AHT</td>
<td>Aboriginal Heritage Tasmania, a section of DPIPWE</td>
</tr>
<tr>
<td>DPIPWE</td>
<td>Department of Primary Industries, Parks, Water and Environment</td>
</tr>
<tr>
<td>EPBC Act</td>
<td><em>Environment Protection and Biodiversity Conservation Act 1999</em></td>
</tr>
<tr>
<td>Ha</td>
<td>Hectares</td>
</tr>
<tr>
<td>IUCN</td>
<td>International Union for Conservation of Nature</td>
</tr>
<tr>
<td>IMBA-AU</td>
<td>International Mountain Biking Association – Australia</td>
</tr>
<tr>
<td>NRA</td>
<td>Nature Recreation Area</td>
</tr>
<tr>
<td>PWS</td>
<td>Tasmania Parks and Wildlife Service</td>
</tr>
<tr>
<td>RAA</td>
<td>Reserve Activity Assessment</td>
</tr>
<tr>
<td>RSF</td>
<td>Reserve Standards Framework</td>
</tr>
<tr>
<td>THPI</td>
<td>Tasmanian Heritage Places Inventory</td>
</tr>
<tr>
<td>TSP Act</td>
<td><em>Threatened Species Protection Act 1995</em></td>
</tr>
<tr>
<td>WoNS</td>
<td>Weed of National Significance</td>
</tr>
</tbody>
</table>
Summary

Within the broader Meehan Range are three geographically separated sections of the Meehan Range Nature Recreation Area (NRA). In addition to the Redgate Section, there is the Mount Direction Section and the Risdon Vale Section. This management statement relates only to the Redgate Section.

Located at the southern end of the Meehan Range, to the east of the River Derwent, the Meehan Range NRA (Redgate Section) – (the reserve) is only a ten-minute drive from Hobart’s city centre and provides convenient access to a mostly natural area.

The reserve is important for its natural values of state, national and international significance, in particular the ten species of threatened plants and five species of threatened animals recorded from within the reserve. It is also highly valued by the local and wider community for the recreational opportunities it affords, including mountain biking, walking and running, dog walking and horse riding.

The reserve would have been traversed by Moomairemener people who were part of the Oyster Bay tribe.

During World War II, the reserve was used for defence purposes, as a lookout and for ammunitions storage and quarrying. In the 1970s, it was a base for constructing sections of the Tasman Bridge. The name “Redgate” appears to be linked to the name of a railway station on the Sorell to Bellerive railway line, which operated between 1892 and 1926.

The Tasmania Parks and Wildlife Service (PWS) aims to manage the reserve for these three key outcomes:

Protection of threatened species and vegetation communities

There are ten species of threatened plants and five species of threatened animals recorded from within the reserve. Four of the five threatened animal species are nationally listed under federal legislation: Tasmanian devil and eastern quoll (both Endangered), eastern barred bandicoot (Vulnerable) and swift parrot (Critically Endangered) which feed on and may nest in the blue gums in the reserve. A further nine species of threatened animals could occur within the reserve. There are also three threatened vegetation communities occurring across the reserve. Two of the threatened plant species have a large proportion of their entire population within the reserve (Risdon peppermint and crimsontip daisybush).

Encouraging appropriate recreation and use.

The reserve is highly valued and very well used for recreation, particularly mountain bike riding. The Meehan Range is one of three areas in the state recognised nationally for this recreational pursuit. An extensive network of mountain bike tracks has been constructed through the reserve, offering a range of riding opportunities. The reserve is also used for walking and trail running, dog walking, nature study including bird watching, and horse riding. Other uses have included rogaining and orienteering, as well as more passive pursuits such as bird watching. It is important that these uses continue whilst appropriate and adequate protection is afforded to the reserve’s natural values.
Reduction of threats to the reserve.

The reserve has previously been subject to illegal four-wheel drive and motorbike access, sometimes associated with illegal wood cutting. There has been unauthorised trail construction. The reserve was also the site of dumping of stolen cars, rubbish and garden waste. It is anticipated that with a greater involvement of recreational visitors, local community and other stakeholders, these threats can be cooperatively addressed and reduced. Arson has occurred occasionally and, with a drying climate, bushfires have spread into the reserve several times in recent decades. Natural regeneration after fires has been dominated by dry-tolerant tree species, and the area of threatened vegetation is reducing. Some weeds have invaded the reserve, but their populations are generally small.
1. Introduction

1.1 Reservation

Gazetted Area: 494.3 ha  
Municipality: Clarence  
Central Plan Registry Ref No: 4360  
IUCN Category: V

Reservation of the Meehan Range (Redgate Section) Nature Recreation Area brought together a number of Crown land blocks leased to government departments, and at least one private block that was purchased by the Lands Department (file letter 24/08/84; Land District Chart). The area was first reserved in 1982 as a State Recreation Area under the Crown Lands Act 1976. The reservation was to preserve the skyline views of the eastern shore from Hobart.

Through the Regional Forest Agreement (RFA), negotiated between the State and Commonwealth Governments in 1997, a Comprehensive, Adequate and Representative (CAR) approach to reservation was adopted, and new categories of reserve were created. It was proposed that the Meehan Range reserves be classified as a State Reserve due to the significant natural values present, but concerns were raised by the community that there may be restrictions placed on recreational activities with this classification. Therefore, in 1999, through the provisions of the Regional Forest Agreement (Land Classification) Act 1998, the Meehan Range (Redgate) State Recreation Area was reclassified to the Meehan Range Nature Recreation Area, under the National Parks and Wildlife Act 1970. There was a further addition of 8.79 hectares, to incorporate the Clarence Mountain Bike Park in 2011, as a result of the 2008 Crown Land Assessment and Classification process.

A draft non-statutory management plan was previously developed in 1997 by Sinclair Knight Merz through the Clarence City Council, the PWS, and Pioneer Concrete. At the same time the reserve was also being assessed via the RFA process. The draft plan was cross-tenure and included the then Meehan Range State Recreation Area, Clarence City Council reserves and private land then owned by Pioneer Concrete. The draft plan was scheduled for review in 2004 but the plan was never finalised.

1.2 Location

The reserve is located north-east of Hobart, on the eastern shore of the River Derwent, north of the Tasman Highway (Figure 1, Figure 2). The main public access points are in the southwest corner at Flagstaff Gully Road, Mornington, and on the eastern side from Belbins Road, Cambridge.

The majority of the properties bordering the reserve are Crown Land (Department of State Growth land managed for the Tasman Highway) or private freehold. All the bordering private properties are in a largely natural state, and several are covered by a conservation covenant.
Figure 1: Location of the Meehan Range NRA (Redgate Section) in relation to Hobart, the River Derwent and other sections of the reserve.

Figure 2: Extent of the Meehan Range NRA (Redgate Section), showing adjoining land tenure.
2. Reserve Management Framework

2.1 Vision

The reserve is managed to conserve its significant flora and fauna species, including listed threatened plant species such as Risdon peppermint and crimson-tip daisybush, threatened animals such as swift parrots, Tasmanian devils and eastern barred bandicoots and three threatened forest types. At the same time, the reserve provides easily accessible recreational opportunities, particularly mountain biking, for the local and greater Hobart community and interstate visitors. The PWS oversees cooperative management of the reserve with partner volunteer groups, the Clarence City Council and the local community, who are afforded opportunities to learn more about the reserve and actively participate in its stewardship.

2.2 Purpose of this Management Statement

The purpose of this management statement is to improve conservation outcomes and encourage appropriate and sustainable recreation in the reserve.

The management statement details:

- the natural, Aboriginal and historic values of the reserve, and the threats to those values;
- the recreational and other social values of the reserve; and
- management considerations, desired outcomes and the management actions that are to occur to protect and sustain those values.

This plan is intended to help guide community groups, local residents, PWS and Clarence City Council staff and the natural resource management network in managing the reserve for the next ten years.

2.3 Legislation and Management Objectives

A nature recreation area is a category of reserve that has values, purposes and objectives defined by the Nature Conservation Act 2002 and the National Parks and Reserves Management Act 2002:

- **Values**: a nature recreation area is an area of land predominantly in a natural state, or containing sensitive natural sites, of significance for recreation.
- **Purpose of reservation**: of a nature recreation area is for public recreation and education consistent with conserving the natural and cultural values of the area of land.
- **Objectives**: the management objectives which apply to nature recreation areas are prescribed in Schedule 1 of the National Parks and Reserves Management Act 2002. Management objectives for the reserve are:
  a) to conserve natural biological diversity;
  b) to conserve geological diversity;
  c) to preserve the quality of water and protect catchments;
  d) to encourage appropriate tourism, recreational use and enjoyment consistent with the conservation of the nature recreation area’s natural and cultural values;
a) to encourage education based on the purposes of reservation and the natural or cultural values of the nature recreation area, or both;
b) to encourage research, particularly that which furthers the purposes of reservation;
c) to protect the nature recreation area against, and rehabilitate the nature recreation area following, adverse impacts such as those of fire, introduced species, diseases and soil erosion on the nature recreation area’s natural and cultural values and on assets within and adjacent to the nature recreation area;
d) to encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with the purposes of reservation and the other management objectives; and
e) to provide for exploration activities and utilisation of mineral resources.

Not all objectives will necessarily be applicable to the reserve, for example the final objective applies to all nature recreation areas, but exploration and mining activities are not considered to be consistent with the protection of significant natural values, recreation use and amenity provided by the reserve.

Section 5 of the National Parks and Reserves Management Act 2002 requires that, in managing development on reserved land, regard must be given to the objectives of the Tasmanian resource management and planning system (RMPS).

Schedule 2 of the National Parks and Reserves Management Act 2002 provides these objectives –

1): 
   a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity;
   b) to provide for the fair, orderly and sustainable use and development of air, land and water;
   c) to encourage public involvement in resource management and planning;
   d) to facilitate economic development in accordance with the objectives set out in paragraphs a, b and c; and
   e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State.

2): 
   In item 1(a), “Sustainable development” means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while:
   a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations;
   b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
   c) avoiding, remedying or mitigating any adverse effects of activities on the environment.

It is intended that the future use and management of the reserve will be in accordance with the meaning of Schedule 2, Clause 1(a) of the RMPS; all planning of future assets including signage, tracks and other amenities must include consideration of the conservation of the natural values for which the land was reserved.

Threatened plants and animals are protected under the Threatened Species Protection Act 1995.

All items of Aboriginal heritage in Tasmania are protected under the Aboriginal Heritage Act 1975.
2.4 Policies and Plans

Tasmanian Reserve Management Code of Practice 2003

Specifies appropriate standards and practices for new activities in reserves, which have been approved through project planning and RAA processes. It also provides best practice operational standards. The General Principles and Basic Approach specified in the Tasmanian Reserve Management Code of Practice 2003 have been adopted in the development of this management statement, and will be applied in the conduct of operational management activities.

Management Zoning Policy

Use and potential development in the reserve is regulated and controlled through a system of Management Zones. The draft internal PWS zoning principles, which describes five Management Zones: Protection, Natural, Recreation, Visitor Services and Utilities have been applied to the Meehan Range NRA (Redgate Section). The zones reflect the spectrum of current and anticipated use and their associated levels and types of infrastructure.

Recreation Standards Framework (RSF) Policy

The type, level, standard, function, maintenance and appearance of visitor facilities can affect visitor experience and safety. The RSF is used by the PWS to describe a range of recreational facility types and standards that define the levels of service for visitor infrastructure, so that it matches the type of visitor coming, or likely to come, to the reserve.

Other PWS Policies

Other PWS policies will be applied as appropriate to the management and use of the reserve. Relevant PWS policies include the Environmental Risk Management Policy, Mountain Biking Policy and Procedures, Walking Track Classification System, Visitor Risk Management Policy, Group Activities and Events Policy and Procedures, Planned Burning and various other fire management policies including Neighbouring Developments and Fire Management Policy.
2.5 Key Desired Outcomes

Based on consideration of the reserve context, values, threats and resources available for management, the following key desired outcomes are identified for the reserve.

1. Existing disturbed areas and sites of erosion within the reserve are mapped and prioritised for remediation.

2. The highest priority areas are remediated to prevent further erosion occurring.

3. Threatened plant populations and communities increase in extent and condition.

4. Habitat for threatened animals improves in quality and extent.

5. Natural bush views into the reserve are maintained, restored or enhanced.

6. Instances of threatening activities such as wood cutting, rubbish dumping, presence of feral cats, unauthorised vehicle access and unauthorised trail building continue to decrease.

7. Car parking, toilets and signage provided in and adjacent to the reserve are adequate and appropriate. Adequate car parking is available for events and peak visitation times, to minimise disturbance to local residents and other reserve users.

8. Information about access and trail locations, use restrictions, significance of reserve values and environmental threats is adequate, consistent and available to visitors before and during visits. Directional signage in the reserve is adequate to allow easy navigation around the trail network.

9. The trail network is designed, constructed and maintained to an appropriate and sustainable standard, in consultation with relevant stakeholders. All trails are managed to avoid or minimise impact to natural values, provide a quality visitor experience, and to allow safe use.

10. The potential for conflict between recreational user groups is minimised and there are opportunities provided for current and future recreational activities practiced within the reserve. All existing tracks and trails are assigned a use or uses, classified, formalised or where appropriate, closed. Signage is adequate.

11. The PWS and the Clarence City Council continue to engage with, and support, volunteer groups to undertake approved activities in the reserve.

See Section 7 Monitoring and Evaluation and Appendix 1 for information on how to determine a “great result” in achieving these key desired outcomes.
3. Conservation of Reserve Values

3.1 Landscape Values

The undulating landforms of the Meehan Range provide prominent relief behind the eastern shore suburbs of Hobart. The landscape values of the Meehan Range (Redgate Section) NRA contribute to the scenic context and landscape of the wider Derwent Estuary. People travelling from the east on the Tasman Highway are met by views of forested hills behind Cambridge and Warrane and this plays an important role in presenting the City as a nature-based destination. Long-term visual management of this area, including the relationship of the reserve with adjoining residential, commercial and reserved public lands, is important.

The reserve is hilly, with topography varying from approximately 100m to 300m above sea level. Stringy Bark Gully is located in the southern half of the reserve and runs north-west to south-east. In the northern half of the reserve, Simmons Hill and Golden Hill feature prominently in the landscape, with Simmons Hill being the highest point of this reserve at 304m. Many of the suburbs of the Clarence municipality are bounded by dry-eucalypt bushland and this aesthetic is particularly appreciated and valued by residents. The lifestyle of suburban living with easy access to bushland at Geilston Bay, Lindisfarne, Rose Bay, Mornington and Cambridge is highly valued by the community.

Large areas of native vegetation continue across the reserve boundary into private property and around all sides of the reserve. This is attributable to a number of factors, including local council policies to retain natural skylines in the greater Hobart area.

The complex topography and bushland setting are landscape characteristics that contribute to the reserve’s recreational values, and have resulted in the development of a unique tracks and trails network highly valued by a range of visitors. Recreational use is discussed in Section 5.

Management Considerations

It is important that the value of the aesthetics of this landscape at the urban fringe is recognised and considered with any development within the reserve. Some features, such as uninterrupted ridgelines and wooded hillsides, are particularly important.

Desired Outcomes

- Natural bush views into the reserve are maintained, restored or enhanced.

Management Response

- Give careful consideration in planning to avoid any interruption in tree-line or change in landscape patterns prior to any new works or maintenance works within the reserve, particularly from track and trail construction or from fire management activities.
3.2 Geology and Soils

Bedrock in the reserve is comprised mainly of Jurassic dolerite or Permian sediments including siltstone and sandstone. Generally, there have not been fossils found in the Permian sediments, although macrofossils have been found in small sections of Permian siltstone talus. Some minor areas of the reserve around Stringy Bark Creek have Quaternary alluvial sediments.

Podzolic soils on mudstone are the dominant soil types in the reserve. Classified as a kurosol under the Australian Soil Classification, these soils are described as poor to imperfectly drained, grey-brown, texture contrast soils. They occur on Permian siltstone bedrock. These soils are found on undulating to rolling terrain, with annual rainfalls less than 750mm.

The soils in the reserve are particularly susceptible to sheet, rill, gully, tunnel and streambank erosion if disturbed. This is due to the combination of an inherently weak parent rock type and a minimal organic layer. The principle process of landform change has been erosion along creek lines and there is some siltstone talus across the slopes.

Management Considerations

Within Stringy Bark Gully there are multiple sites subject to intense erosion. Initiators of this erosion include past quarrying and inappropriate fire trail and track placement and construction, together with a lack of track maintenance. Low soil accumulation rates combined with this disturbance can result in continued erosion.

Unauthorised access to the reserve by four-wheel drives (4WDs) and motorbikes has exacerbated erosion and created degraded areas. Unauthorised mountain bike trail construction and trail use is of concern, as some trails have been constructed up steep slopes in erosion-prone areas. The perpetuation of further erosion-inducing activities and failure to address existing erosion concerns, is a management threat.

Management of future bushfires and/or fuel reduction burns in the reserve should consider potential impacts to catchments from soil erosion or pollution from those activities.

Desired Outcomes

- Activities conducted within the reserve mitigate soil erosion and pollution of the catchment.

Management Response

- Existing disturbed areas and sites of erosion within the reserve are mapped and prioritised for remediation.
- Undertake appropriate rehabilitation actions consistent with the *Tasmanian Reserve Management Code of Practice 2003*.
- Construction of new mountain bike trails and other tracks should be environmentally sustainable and only occur after consideration of erosion risk. No tracks/trails should be constructed in locations where erosion cannot be effectively mitigated and managed long-term.
3.3 Flora and Fauna

The RFA assessment of the reserve concluded that the reserve is “important for its recreational values and the presence of rare plant species and swift parrot habitat.” The RFA report considered the conservation of swift parrot habitat to be a matter of priority and originally proposed that the reserve be classified as a State Reserve. However, due to strong support by the local community for continued recreational access, the classification remained Nature Recreation Area.

Flora

Ten species of plant occurring within or close to the reserve are listed as threatened under the Tasmanian Threatened Species Protection Act 1995 (TSP Act). Moss sunray (*Hyalosperma demissum*) is listed as endangered, although it has not been recorded in the area since 1908. Blue devil (*Eryngium ovinum*) is Vulnerable, and the other species are all listed as Rare (Table 1). None of the plant species recorded are listed under the national Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>TSP Act</th>
<th>Observation Count</th>
<th>Last Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>crested speargrass</td>
<td><em>Austrostipa blackii</em></td>
<td>Rare</td>
<td>1</td>
<td>01-Nov-1984</td>
</tr>
<tr>
<td>blue devil</td>
<td><em>Eryngium ovinum</em></td>
<td>Vulnerable</td>
<td>2</td>
<td>01-Mar-2006</td>
</tr>
<tr>
<td>Risdon peppermint</td>
<td><em>Eucalyptus risdonii</em></td>
<td>Rare</td>
<td>92</td>
<td>25-Feb-2011</td>
</tr>
<tr>
<td>variable raspwort</td>
<td><em>Haloragis heterophylla</em></td>
<td>Rare</td>
<td>6</td>
<td>10-Nov-2015</td>
</tr>
<tr>
<td>moss sunray</td>
<td><em>Hyalosperma demissum</em></td>
<td>Endangered</td>
<td>1</td>
<td>01-Oct-1908</td>
</tr>
<tr>
<td>gentle rush</td>
<td><em>Juncus amabilis</em></td>
<td>Rare</td>
<td>4</td>
<td>07-Oct-2004</td>
</tr>
<tr>
<td>crimsontip daisybush*</td>
<td><em>Olearia hookeri</em></td>
<td>Rare</td>
<td>6</td>
<td>23-Sep-2011</td>
</tr>
<tr>
<td>soft tussock grass</td>
<td><em>Poa mollis</em></td>
<td>Rare</td>
<td>4</td>
<td>23-Aug-2006</td>
</tr>
<tr>
<td>tall wallaby grass</td>
<td><em>Rytidosperma indutum</em></td>
<td>Rare</td>
<td>10</td>
<td>09-Jun-2010</td>
</tr>
<tr>
<td>forest germander</td>
<td><em>Teucrium corymbosum</em></td>
<td>Rare</td>
<td>5</td>
<td>24-Jun-2015</td>
</tr>
</tbody>
</table>

* A survey for this species in June 2017 found around 2,500+/- plants, but the Natural Values Atlas had not yet been updated.

Three of the reserve’s threatened plant species grow only in Tasmania. Crimsontip daisybush (*Olearia hookeri*) has its largest population within this reserve. A survey by North Barker Ecosystem Services in June 2017 estimated the population within the reserve to be in the order of 2,500. Crimsontip daisybush grows mainly in Risdon peppermint forest on north and north-westerly facing slopes.

Risdon peppermint is only listed as rare, but it does not grow outside Tasmania and within the state is restricted to the Meehan Range (Risdon to Grass Tree Hill). Previously, the Redgate population represented 22% of the total population of Risdon peppermint. Mapping in 2017 indicated a smaller area was occupied than had previously been mapped, so there may be less than 22% of the total population in the Redgate Section. Risdon peppermint forest is also a threatened forest type. It is discussed further in the vegetation section.

Soft tussock grass is also endemic to Tasmania, but it is widespread across the eastern half of the state.
Vegetation

The vegetation in the reserve is dry forest communities dominated by black peppermint (*Eucalyptus amygdalina*), Risdon peppermint (*E. risdonii*), blue gum (*E. globulus*), stringybark (*E. obliqua*), silver peppermint (*E. tenuiramis*) and white peppermint (*E. pulchella*). Risdon peppermint forest was thought to be the most widespread community in the reserve. However, recent mapping has indicated that there is a larger area of black peppermint forest than previously mapped.

Of the seven native vegetation types occurring within the reserve, three are listed as threatened under the *Nature Conservation Act 2002*. Risdon peppermint forest mainly occupies north-facing slopes and ridgelines and has a distinctive grey appearance from a distance (Figure 3). Silver peppermint forest and woodland on sediments is found on the lower slopes of Stringy Bark Gully. Blue gum dry forest and woodland is restricted to southerly facing slopes and moist gullies in the reserve (Figure 3).

Figure 3: Distribution of threatened vegetation in the Meehan Range (Redgate Section) NRA.
Fauna

Five species of threatened animals have been recorded from the reserve, and a further nine species are modelled as potentially occurring there (Table 2, Table 3). Eleven of the 14 species are nationally listed under the EPBC Act. They include mammals, birds, a frog, a fish, a skink and a butterfly.

Table 2: Fauna species listed under state or federal legislation, recorded from Meehan Range (Redgate Section) NRA from Natural Values Atlas, September 2017.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>TSP Act</th>
<th>EPBC Act</th>
<th>Observation Count</th>
<th>Last Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>grey goshawk</td>
<td>Accipiter novaehollandiae</td>
<td>Endangered</td>
<td></td>
<td>1</td>
<td>05-May-1986</td>
</tr>
<tr>
<td>eastern quoll</td>
<td>Dasyurus viverrinus</td>
<td>Endangered</td>
<td></td>
<td>1</td>
<td>20-Dec-1980</td>
</tr>
<tr>
<td>swift parrot</td>
<td>Lathamus discolor</td>
<td>Endangered</td>
<td>Critically Endangered</td>
<td>35</td>
<td>09-Dec-2010</td>
</tr>
<tr>
<td>eastern barred bandicoot</td>
<td>Perameles gunnii</td>
<td>Vulnerable</td>
<td></td>
<td>12</td>
<td>19-Nov-2016</td>
</tr>
<tr>
<td>Tasmanian devil</td>
<td>Sarcophilus harrisii</td>
<td>Endangered</td>
<td>Endangered</td>
<td>4</td>
<td>11-Feb-2014</td>
</tr>
</tbody>
</table>

Table 3: Fauna species listed under state or federal legislation, modelled as potentially occurring in the Meehan Range (Redgate Section) NRA from Natural Values Atlas, September 2017.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>TSP Act</th>
<th>EPBC Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>chaostola skipper</td>
<td>Antipodia chaostola</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>Tasmanian wedge-tailed eagle</td>
<td>Aquila audax subsp. fleayi</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>spotted-tailed quoll</td>
<td>Dasyurus maculatus</td>
<td>Rare</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>white-bellied sea-eagle</td>
<td>Haliaeetus leucogaster</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>green and gold frog</td>
<td>Litoria raniformis</td>
<td>Vulnerable</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>forty-spotted pardalote</td>
<td>Pardalotus quadragintus</td>
<td>Endangered</td>
<td>Endangered</td>
</tr>
<tr>
<td>Australian grayling</td>
<td>Prototroctes maraena</td>
<td>Vulnerable</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>tussock skink</td>
<td>Pseudemoia pagenstecheri</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>masked owl</td>
<td>Tyto novaehollandiae subsp. castanops</td>
<td>Endangered</td>
<td>Vulnerable</td>
</tr>
</tbody>
</table>
The reserve and surrounds are known to be a key site for foraging and breeding of swift parrots. Migrating south after over-wintering in south-east Australia, swift parrots seek out flowering blue gums and black gums (E. ovata) from which to feed, and hollow-bearing trees in which to build nests, close to their preferred food sources. Because of the variable flowering of these eucalypts, only limited amounts of foraging habitat may be available in any one year. Thus, in one year nesting densities might be high in an area, but then very low the next year. The conservation management of swift parrots is best undertaken as a ‘whole of habitat’, long-term approach. The blue gums and all old, hollow-bearing trees in the reserve are important habitat for swift parrots. Trees with hollows are also potential nesting habitat for masked owls.

Eastern quolls were once found throughout eastern Australia but they are now considered extinct on the mainland. They are still relatively common and widespread in Tasmania. Eastern quolls are mainly recorded in grasslands, grassy woodlands including dry eucalypt forest, and coastal scrub.

Eastern barred bandicoots inhabit native grasslands and grassy woodlands across eastern and northern Tasmania. Some of the blue gum forest in the reserve has a grassy understorey, and areas of thick understorey also provide cover for bandicoots. Large eucalypts, in sheltered areas in the middle of large patches of forest, are used for nesting by wedge-tailed eagles and white-bellied sea eagles. No eagle nests have been recorded within 500m of the reserve but a nest, which is occupied most seasons, is located a few kilometres to the north of the reserve. Both species forage over the reserve.

The waterway through the reserve, Barilla Rivulet, possibly contains vegetated pools that are suitable for green and gold frog. The rivulet may flow adequately to provide habitat for Australian grayling, which move between freshwater and estuaries during their lifecycle. However, there has been considerable disturbance along the lower reaches of the rivulet within the reserve due to past quarrying, and the upper waterway sections do not flow most of the time.

Chaostola skipper, a small butterfly, only occurs where there is a population of one of two species of cutting grass. One of these, Gahnia radula, was recorded in the most restricted of the vegetation communities in the reserve; blue gum wet forest (North Barker 2017). The plant was not recorded from any other forest type, and it is likely that potential habitat for the skipper is similarly restricted.

Management Considerations

A variety of habitats in the reserve are used by threatened plants and animals, and 40% of the vegetation is threatened forest types. Activity within the reserve should avoid impact to threatened species and their habitats, and to threatened vegetation communities.

Desired Outcomes

- Threatened plant populations and communities increase in density, distribution and condition within their natural range.
- Habitat for threatened animals improves in quality.
- Reserve uses support the improvement in the condition of the reserve.
- Reserve visitors have the opportunity to learn about, and understand the significance of the reserves natural values.

Management Response

- Determine which reserve use/s degrade, or have the potential to degrade threatened species habitat, threatened vegetation communities, or threatened fauna.
- Monitor tracks and trails, as well as compliance with the recreational prescriptions, and enforce restrictions as necessary to avoid threats and impacts. For example, enforce dogs on lead only, close or
re-route mountain bike trails that are damaging threatened plants including Risdon peppermint, and prevent woodcutting activity that could damage old, hollow-bearing trees or any blue gums.

- Manage the threats to threatened species and vegetation, for example remove weeds that have the potential to degrade vegetation or habitat, undertake fuel reduction burns in an ecologically sensitive manner, keep bushfire out of the wet forest areas, and rehabilitate trails that are reducing creek water quality.
- Re-map / survey threatened vegetation and threatened plants within five years.
- Incorporate messages about the reserve’s natural values in any interpretation material that is developed for the reserve.

### 3.4 Aboriginal Heritage Values

Tasmanian Aboriginal people known as the Moomairemener were the first people known to occupy the lower eastern shore of the River Derwent. Part of the Oyster Bay tribe, their homelands included all of the present day Clarence municipality in addition to rich foraging and hunting grounds around Pitt Water. Through arrangement with neighbouring tribes, the Moomairemener people travelled throughout the wider region. There are many midden sites along the length of the River Derwent, reflecting long-term occupation.

Aboriginal Heritage Tasmania (AHT) has undertaken a search of the Tasmanian Aboriginal Site Index (TASI) specifically for this management statement. They advise that there are no Aboriginal heritage sites recorded within or close to the area. Due to a review of previous reports in the surrounding area, it is believed that there is a low probability of Aboriginal heritage being present.

#### Management Considerations

Although no sites or items of Aboriginal heritage have been discovered, the reserve is centrally located between Pitt Water and the River Derwent. As with all works on reserved land, a precautionary approach should be employed, and all works undertaken in the reserve should include an Unanticipated Discovery Plan.

#### Desired Outcomes

- Aboriginal heritage values are understood and protected.
- Reserve visitors have the opportunity to learn about, and understand the significance of the reserve’s Aboriginal heritage values.

#### Management Response

- All reserve activity assessments must, as a minimum, include a desktop survey for Aboriginal heritage.
- All works must include an Unanticipated Discovery Plan that sets out a process for recording Aboriginal artefacts or sites discovered during works, and an order to stop work until the site is assessed by a suitably qualified person.
- Consider including Aboriginal heritage and connection to the reserve and/or area in any interpretation of the values of the reserve. This will need to be undertaken in partnership with the Tasmanian Aboriginal community.
3.5 Historic Heritage Values

The Meehan Range may have been viewed as “barren land” by early Europeans and so was not developed as farmland, although a stock grazing licence was later granted over parts of the reserve. Later, when the surrounding area was developed as suburbs, it was not possible to provide water and sewerage to land above 60 metres, thus development was restricted to lower lying places. In 1970, the Clarence City Council codified the protection of the municipality’s “sky lines” by formally restricting building above 90m above sea level for scenic reasons.

Prior to reservation, the area had been Crown Land and was leased for various activities including quarrying, beekeeping, stock grazing and wood gathering. During World War II, the Meehan Range was seen as a strategic location between the airport at Cambridge and the city of Hobart, so the Commonwealth Government compulsorily acquired an area of 31ha (77 acres) at the end of Belbins Road for the purpose of establishing an explosives replenishing centre. For this reason, Stringy Bark Gully has also been known as ‘Air Force Gully’. Remnants of this use can still be seen throughout the valley at the end of Belbins Road, where a number of concrete foundations still exist.

After World War II the reserve was leased for various quarrying activities. Gravel was extracted for the construction of the runway for the (then) new Hobart Airport, and for roads within the Seven Mile Beach Public Reserve. A Department of Main Roads workshop was located in Stringy Bark Gully and from 1975 to 1978, concrete formwork was constructed for the Tasman Bridge following its collapse.

Following reservation, the (then) Lands Department began to manage the reserve for public use. A number of activities continued including car club events, emergency services training and Australian Defence Force training. Licenses were issued for grazing, beekeeping and wood collecting. These activities began to be phased out in the 1980s. An old farmhouse near the Belbins Road entrance was removed, rubbish cleared and boom gates and signs installed at the reserve entrances.

The name “Redgate” appears to be linked to the name of a railway station on the Sorell to Bellerive railway line, which operated between 1892 and 1926. This station, which was located somewhere near the Belbins Road entrance, may have taken its name from a nearby property. The area was likely known by a number of names, with Meehan Range only being gazetted in 1970. Searches of local newspapers show no record of prior use of that name.

A dressed sandstone bridge abutment that was part of the Sorell railway line is located just outside the reserve, adjacent to the Clarence Mountain Bike Park.

Management Considerations

Historic use of the reserve has modified the landscape of Stringy Bark Gully. Some of this has included earthworks, resulting in ongoing erosion.

Desired Outcomes

- Visitors are afforded the opportunity to learn about the reserve’s history of use and strategic importance.

Management Response

- Incorporate messages about the reserves historic heritage values into any interpretation material that is developed for the reserve.
4. Threats to Reserve Values

4.1 Climate Change

Tasmania has a temperate maritime climate influenced by surrounding oceans. Strong westerly prevailing winds dominate weather patterns. Precipitation in eastern Tasmania does not follow a distinct seasonal cycle, and, on average, between 50-70mm of rain falls each month of the year. South-eastern Tasmania has an average annual rainfall of between 375 and 1000mm, while the mean annual rainfall in this area is 550mm. Average winter minimum temperatures range from -1 to 6°C across the region. The region has mild summers, with average maximum temperatures ranging from 13 to 23°C (average 19°C across the region). The Meehan Range is within the rain shadow of the Wellington Range.

Over the last 45 years, there has been a 20-30% reduction in annual rainfall in south-eastern Tasmania. Since 1970, there has been an increase in average temperature by between 0.05 and 0.1°C per decade, and an increase of between 0.10° and 0.15°C in the maximum temperature, per decade (www.bom.gov.au).

Much of the terrestrial biodiversity in Tasmania is known to be unique in character with its suite of remnant Gondwanan-era species. Some of these species are at the edge of their biogeographic range.

Management Considerations

When considering the impacts of climate change in the Meehan Range (Redgate Section) NRA the main considerations for reserve management include the increasingly favourable conditions for weeds to spread, and increasingly frequent drought events. Tree species – and, therefore, forest type - are already changing from species that prefer wetter conditions i.e. blue gums, to species that can withstand drier conditions, such as black peppermints. The shrub and heath component of the vegetation could also change with higher bushfire frequency, due to lower native species recruitment.

Weed and fire management are discussed more fully below.

Desired Outcomes

- Ensure broader climate change research and monitoring outcomes are applied to reserve management, and monitoring of values includes a focus on values vulnerable to climate change. Management practices improve the ability of natural systems to be resilient to climate change.

Management Response

- Encourage appropriate research and monitoring to improve understanding of the impacts of climate change on vulnerable values.
- Review and adapt management practices and tools, such as fire management and biosecurity, to minimise the impacts of climate change.

4.2 Weeds, Pests and Diseases

Biosecurity is concerned with preventing the introduction and/or spread of weeds, pests and diseases within and from the reserve. Plant, machinery, hand tools and vehicles, footwear, bicycles and horse hooves can spread weed seeds or pathogens such as root rot (Phytophthora cinnamomi). Clean gear and machinery brought into the
reserve can also pick up new weed seeds, and potentially diseases from the reserve and then spread these to other places if not cleaned afterward.

**Weeds**

The reserve has some weed incursions due to previous land uses causing ground disturbance, and also due to dumping of green waste. The main weed infestations occur around the Belbins Road entrance and also at an old quarry pit and along fire trails (Figure 4). The limited number and extent of weeds means that with limited but ongoing management, the weed threat could be largely eradicated.

![Figure 4: Weeds mapped in the Meehan Range (Redgate Section) NRA in June 2017.](image)

Three Weeds of National Significance occur in the reserve: boneseed, blackberry and canary or Montpellier broom. Several of the weed species present have been declared under the *Weed Management Act 1999* (Table 4).
Table 4 Recorded weed species in the Meehan Range (Redgate Section) NRA.

<table>
<thead>
<tr>
<th>Common name</th>
<th>Species</th>
<th>Declared under Weed Management Act</th>
<th>Weed of National Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>slender thistle</td>
<td>Carduus pycnocephalus and C. tenuiflorus</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>boneseed</td>
<td>Chrysanthemoides monilifera subsp. monilifera</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>spear/ scotch thistle</td>
<td>Cirsium vulgare</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish heath</td>
<td>Erica lusitanica</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>canary/Montpellier broom</td>
<td>Genista monspessulana</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>horehound</td>
<td>Marrubium vulgare</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>radiata pine</td>
<td>Pinus radiata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>wild mignonette</td>
<td>Reseda lutea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>blackberry</td>
<td>Rubus fruticosus agg.</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>blue periwinkle</td>
<td>Vinca major</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pests**

Feral cats are a wide-spread and cross tenure issue in Tasmania, associated with a range of biodiversity and human health threats. Cat management and control in Tasmania is governed by the *Cat Management Act 2009* and *Cat Management Regulations 2012*, and supporting documents such as the *Tasmanian Cat Management Plan 2017-2022*.

Feral cats have been observed in the reserve, however the PWs do not currently undertake trapping. An integrated approach to feral cat control within the Clarence municipality is required, involving the Clarence City Council, other land managers and residents. Without an integrated approach, any control undertaken by the PWS within the reserve, would likely have minimal impact in the long-term, given the permeability of the reserve, and close proximity of residential areas.

The PWS has not received any information or complaints regarding ‘feral’ dogs in the reserve. However, dogs off lead are observed, with implications for user safety (i.e. rider collisions with dogs), and biodiversity management. Dog management is referred to in Section 5 of this Management Statement.

**Disease**

Root rot (*Phytophthora cinnamomi*) is a water mould that causes plant death in Tasmanian vegetation, particularly in moorland, heathland and heathy dry eucalypt forest. Numerous plant species can be affected, particularly plants in the Epacridaceae family.

DPiPWE specialists have recently surveyed the reserve for the presence of root rot. A desktop review highlighted a ‘variable’ vulnerability to root rot infestation in dry eucalypt forest in the reserve, particularly in Stringy Bark Gully. The reserve is apparently free from root rot, and there is thought to be a low likelihood of a future infestation. The vegetation in the reserve is not generally conducive to the spread of root rot. The main risk is considered to be via vehicles along vehicle tracks, where water pooling occurs.
Management Considerations

Management vehicles, technician vehicles and other authorised vehicles can bring weeds into the reserve, as can mountain bikes, motorbikes and other recreational users carrying soil from weed-infested areas. Weeds can also spread naturally from adjacent or nearby land. A cooperative approach to weed management that includes the PWS, the Clarence City Council, the Department of State Growth, and private land owners is best for effective weed management.

Desired Outcomes

- Montpellier broom, Spanish heath and boneseed are eradicated from the reserve.
- Isolated weed outliers in the reserve are controlled.
- There is a coordinated, ongoing weed control program in the reserve.
- The PWS are actively involved in an integrated, municipal wide approach to feral cat control.

Management Response

- Remove the single, isolated weeds. Eradicate the Montpellier broom infestation near Belbins Road. Eradicate the Spanish heath infestation near Cross Rivulet. Follow-up treatments will be necessary.
- Develop and implement a weed management plan using the principles of removing outliers, controlling weeds that are spreading rapidly, and controlling weeds that could threaten the significant values of the reserve, as the highest priority.
- Re-map the weeds across the reserve within five years after this management statement comes into effect, and utilise this information to review the weed management plan.
- The “Clean, Check, (Disinfect) Dry” message could be included in any signage in the reserve, especially at the car parks.
- Work with the Clarence City Council to provide mountain bike wash-down facilities at both the Clarence Mountain Bike Par and Belbins Road entry points, with appropriate interpretation and instructions.
- Work with Clarence City Council and other land owners and managers within the municipal area on an integrated approach to feral cat control.

4.3 Fire

Vegetation in the Meehan Range is dominated by dry eucalypt communities, which are highly flammable. This combined with consistently high fuel loads and close proximity to the urban interface, high visitation to the reserve and the intrinsic natural values, means that fire management in the reserve is complex. The south-west band of the reserve was burnt in 2006 in the eastern shore fires. Some values in the reserve could be degraded by an increased fire frequency.

Modelling generated though the Bushfire Risk Assessment Model recommends increased prevention activity including targeted patrols during fire weather, to reduce fire starts, and conducting appropriate planned burning, to reduce potential fire intensity and increase the probability for suppression success.

Between 2006 and 2008, the PWS undertook fire trail maintenance works, funded from the (then) Bushfire Mitigation Program. The key objective of the works was to ensure that key fire trails were accessible by fire fighting vehicles (Class 4 and 5 tankers).
Management Considerations

Wildfire in the reserve has mostly been due to arson originating elsewhere and burning through the reserve.

Fire management activities in the reserve must also be considered in the context of the natural values such as Risdon peppermint and the swift parrot habitat forest. Advice from the Tasmanian Government’s Threatened Species Link for the swift parrot gives the following considerations:

- Major bushfires can destroy foraging and nesting habitat for the swift parrot. The recovery time from destructive bushfires can be as long as several decades.
- Occasional low-intensity fire in mature eucalypt forest can increase nesting habitat by promoting the formation of hollows, where the fire does not kill blue gum trees and when swift parrots are not breeding in the area being burnt at the time of the fire.
- To avoid destroying foraging habitat - avoid activities which increase the risk of wildfire in or near foraging habitat. Suppress fires in the area when there is high fire risk.

Fire is vital to the reproduction and regeneration of Risdon peppermint. However, too frequent fire reduces the seed-bank available for regeneration. Given the reserve’s location and high conservation values, planned burning objectives should incorporate both community protection and maintenance of biodiversity values.

Any fire management activities in the reserve must also consider the need for weed management including pre- and post-burning weed control activities. In planned burning activities, hygiene of vehicles, machinery, other equipment and clothing must be considered. Control measures to prevent weeds from spreading should be considered - as a priority - for any fire management activity within or adjacent to the reserve.

Desired Outcomes

- Biodiversity in the reserve is maintained or enhanced with appropriate fire management.
- Risk of bushfire to neighbouring communities is reduced.

Management Response

- Apply appropriate fuel management regimes in the reserve, giving consideration to risk and values.
- Maintain fire assets within the reserve to ensure the best possible potential for fire suppression.

4.4 Threats from Human Use

Like most reserves in a similar setting, the Meehan Range (Redgate Section) NRA experiences anti-social behaviour from time to time. While the vast majority of visitors are respectful, the PWS must manage several key issues including unauthorised vehicle entry and associated illegal wood collection, unauthorised construction of trails or other infrastructure, rubbish dumping and arson.

Unauthorised access

There are many unofficial access points to the reserve that provide unauthorised access for motorbikes and four-wheel drives. Illegal access to the reserve is damaging existing fire trails and creating new tracks. This activity damages soils and plants and can spread weeds. The noise and speed of motorbikes also adversely impacts the experience of other reserve users. Unauthorised vehicle entry is mainly associated with illegal wood cutting. In addition, unauthorised vehicle use conflicts with legitimate recreational activities and poses an increased safety risk.
**Illegal wood cutting**

Illegal wood collection, firewood cutting or “wood-hooking” has long been a concern in the Meehan Range. Illegal entry is gained from adjoining private land without landowner knowledge or consent, or through damaged gates.

**Unauthorised works**

Outside of the Clarence Mountain Bike Park, the majority of mountain bike trails within the reserve have been constructed and/or tracks modified without authority from the PWS, the land manager. This activity reduced considerably following improved engagement with users. Poorly constructed tracks/trails can erode, reduce environmental quality or become dangerous. Unauthorised tracks are generally not built to an adequate standard and do not take into consideration the requirements of other recreational activities. Unauthorised tracks/trails can fragment forest patches, damage natural values particularly threatened vegetation, threatened species or their habitat, cause soil erosion or become a pathway for new weed incursions.

**Arson**

Although not common, arson, the deliberate starting of fires, occasionally occurs in the Meehan Range NRA. This anti-social behaviour is dangerous as it puts at risk the local communities and neighbouring properties.

**Rubbish Dumping**

The dumping of rubbish occurs occasionally just outside the reserve. Belbins Road has seen some stolen cars dumped.

Green waste dumping in the reserve occurs occasionally. This activity threatens biodiversity values because some garden plants can spread into the reserve and become weeds. Some garden plants are toxic to native animals and some alter the habitat of native animals.

**Management Considerations**

The biggest threats to biodiversity in the Redgate Section are from illegal wood cutting, unauthorised track construction, unauthorised vehicle access, weeds, soil erosion and an inappropriate fire regime. This reserve has a high level of visitation and visitors should be encouraged to report anti-social behaviour and access breaches. Early detection and reporting together with PWS compliance patrols and activities will help reduce instances of illegal and unauthorised use. Construction, upgrading or removal of tracks in the Redgate Section must be considered in terms of environmental risk, safety and public liability and social sustainability. All proposed new tracks must be adequately assessed and considered through the RAA process.

**Desired Outcomes**

- Instances of threatening activities such as wood cutting, rubbish dumping, unauthorised vehicle access and unauthorised trail building continue to decrease.

**Management Response**

- The PWS will continue to patrol the reserve and carry out compliance operations, when possible.
- Visitors to the reserve will be encouraged to record and report any illegal or unauthorised activity. This information may be included on signage within the reserve.
- Work with neighbouring landowners to reduce unauthorised access.
5. Recreational Use and Infrastructure

5.1 Car parking

Currently there are no visitor amenities or car parking spaces provided inside the reserve. The Clarence City Council has developed a car park and will construct a toilet just outside the south-western corner of the reserve, on Crown Land near the mountain bike park. The Redgate Section is a very popular part of the reserve, and on most weekends, in all seasons, both the Flagstaff Gully Road (mountain bike park) car park and the Belbins Road car park are full, with reserve users being forced to park along the entry roads. The Belbins Road site is limited to around ten cars.

The Department of State Growth is in the process of transferring an area of Crown Land adjacent to the Tasman Highway to the Department of Primary Industries, Parks, Water and Environment. The Clarence Mountain Bike Park partly occupies this area of Crown Land. This will simplify the management arrangement.

Access to the neighbouring properties is impeded from time to time as a result. The PWS currently authorises access to park cars within the reserve during approved orienteering and mountain biking events.

5.2 Recreational use

The reserve is primarily used by residents of the greater Hobart area. It is valued for the recreational opportunities it offers as an accessible area with an extensive trail network, offering a wide range of recreational opportunities. It is best known for its mountain biking but is also highly valued for the bushwalking, running, dog walking, horse riding, birdwatching and nature study, orienteering/rogaining and rock climbing opportunities it affords.

The relatively rapid increase in recreational use of the reserve in the 1990s resulted in a perception amongst reserve visitors and local residents that there was conflict between various user groups in the reserve, such as horse riding, bushwalking, dog walking and motorbike riding (Sinclair Knight Merz, 1997).

When discussing recreational use of tracks and trails, the word ‘track’ or ‘tracks’ will predominantly be used for both existing and constructed or proposed tracks and trails. The use of the word ‘track’ therefore, can relate to a walking track, multiple-use track, mountain bike track and/or vehicular track. However, where a specific reference is required, the term mountain bike trail, fire trail or a named trail (Meehan Skyline Trail) is used.

**Mountain biking**

The reserve has been used for mountain biking since the early 1980s. Mountain bike riding has increased dramatically over the past 15-20 years and it continues to grow in popularity. During iconic multi-day events such as Wildside in western Tasmania and Blue Dragon MTB challenge at Derby, it was estimated that at least half the competitors had travelled from interstate. Mountain biking has become a primary drawcard in places with developed bike trails in Tasmania such as Derby and Blue Tier in the north-east, the North-South Track on Mount Wellington and the Glenorchy Mountain Bike Park.

The mountain bike trails in the reserve have been mainly developed for cross country style riding. There are various loops or “options” to provide for different skill levels (Figure 5). The significance of these trails to the local riding community is evident, with high attendance in all seasons, in good weather and particularly on weekends. The volunteer involvement in the development of the mountain bike trail network has resulted in this user group having a strong sense of attachment to the reserve, and a continuing interest in its management.
In recent years, the popularity of mountain bike riding within the reserve has increased significantly. This is due in part to the promotion of the track network through social media, mountain bike magazines, and more general marketing of Tasmania as a mountain bike destination.

The amount of purpose built mountain bike singletrack within the reserve is attractive to riders. The reserve has a high repeat visitation rate among local riders, as well as attracting intrastate mountain bike visitors as an ‘add on’ when in the state to visit trail networks at Derby or Maydena.

In 2011, the PWS participated in the development of the Greater Hobart Mountain Bike Master Plan; a plan that aims to ensure that the development of the trail network occurs in a strategic and effective manner. The plan included consideration of a number of trails that the PWS manage in the south-east region.

The Clarence Tracks and Trails Strategy 2012 and Clarence City Council Tracks & Trails Action Plan guide the development of tracks and trails within the municipality. The action plan aims to provide a framework for developing an integrated network of tracks around the municipality. The plan identifies seven significant trails, one of those being the Meehan Skyline Trail from Risdon Vale to Acton Park. The section of the trail within the reserve currently includes the fire trail from Flagstaff Hill to Tunnel Hill then extends down through the Clarence Mountain Bike Park.

The Clarence City Council, Meehan Range Trail Groomers and the Clarence Mountain Bike Park Committee have also initiated a review of the draft Meehan Range Strategic Trail Plan. The PWS, as the land manager for the majority of the land covered by the plan, will be involved in this project.

The original Meehan Range Strategic Trail Plan was prepared for the Clarence City Council in 2015. The intent of the revised plan is to provide a strategic direction for the development, management, and maintenance of the mountain bike trail network. The plan will also address classification, signage and associated support infrastructure and services requirements. The strategic trail plan will need to be consistent with the intent and recommendations within this Management Statement, and on-ground recommendations assessed and approved by the PWS through the RAA process.

A key component of the original draft trail plan was to determine the extent of the Clarence Mountain Bike Park, within the Redgate Section. The Clarence Mountain Bike Park features a significant network of trails through a previously disturbed area of the reserve. The trails cater for various mountain bike disciplines, at a variety of levels from beginner through to advanced. Several of the trails continue through the rest of the reserve or other neighbouring properties.
Figure 5: Location of approved trail network within the Meehan Range (Redgate Section) NRA 2018. Sections of fire trail are also used for mountain bike riding.
Horse riding

Horse riding is a popular activity in the area and is permitted on the designated fire trails within the Redgate Section. However, parking for cars and horse floats is not provided. Horse riders indicated that the limited parking available at Belbins Road has likely led to a decrease in use by this user group. They also indicated that the fire trails within the reserve are an important asset, particularly in the context of increasing popularity of other recreational areas. Future parking investigations could include consideration of the provision of space for horse float/s. There are a number of riding areas in the region, including the Tangara Trail network managed by the Clarence City Council.

Horse riders also indicated that they would like to be included in future track planning – with a particular interest in developing circuits for horse riders off the Meehan Skyline Trail.

Walking and trail running

The Meehan Range is a popular walking and running destination, and individuals and groups, including walking clubs, visit the reserve throughout the year. There are many options, from short routes to extended tracks.

Dog walking

The reserve is popular with the local community for dog walking. Dogs are permitted on designated fire trails and multiple-use tracks, provided they are on a lead to prevent disturbance to native animals. Despite this restriction being indicated on signage at reserve entry points, dogs are regularly encountered off-lead in the reserve. Improved entry signage and further interpretation signage on the potential impacts of dogs on the reserve’s significant values may assist in communicating to visitors why dogs must be on a lead at all times.

Rogaining and orienteering

Rogaining and orienteering events are held in the reserve. Participants include all ages and abilities. Participants in both sports usually follow existing tracks as much as possible.

Orienteering Tasmania, the state orienteering body, has a Memorandum of Understanding with the PWS which provides authority to undertake orienteering events in particular reserves across the state. There are conditions for events, such as the provision of port-a-loos. Rogaining Tasmania obtains authorities for individual events as required, at least two months before the event. Where supported, authorities are issued in accordance with the National Parks and Reserved Land Regulations 2009 and the PWS Group Activities and Events Policy and Procedures (PWS P-062). The open area between Belbins Road and Stringy Bark Gully is often used as a staging area during such events.

Rock climbing

Rock climbing is also undertaken in the reserve, on a mudstone cliff. There are several climbing routes established, from beginner to intermediate grades and the routes are mostly bolted. The climbing is self-regulated and the PWS does not maintain any rock climbing infrastructure. The sport is generally compatible with the area’s natural values when climbers minimise the use of bolts and practice minimal-impact climbing techniques, as detailed in the Climbers Club of Tasmania Code of Conduct.
**Bird watching and nature study**

The Meehan Range, including the Redgate Section, is popular with birdwatchers. Birdlife Tasmania occasionally organises bird watching excursions to the reserve, but mostly the activity is undertaken by individuals. There may be swift parrots present in the reserve at certain times of the year.

The Meehan Range provides the most accessible place to see Risdon peppermint forest. Other significant vegetation and plant species are also accessible with a short walk.

**Management Considerations**

The Belbins Road car park is not of a suitable size or standard to cater for existing and future use. Subject to land-owner consent and Council approval, there is the potential to develop a car park on private land just outside the reserve. The outside reserve option has benefits in terms of vehicle security and minimising impacts on the reserve. There is no toilet at the Belbins Road entrance. However, a toilet is to be constructed at the Clarence Mountain Bike Park side – near the Flagstaff Gully Road entrance.

Signage for the location and use of trails/tracks by different user groups needs to be clear, at all main entry points and trail junctions. At the current time, there is no clear orientation information available to visitors - either pre-visit or upon arrival in the reserve, to help people find their way around.

Given the potential conflict of use between recreational users and the environment as well as safety issues, each track and trail needs to be classified and designated for a particular use (single use only) or range of uses (multiple use). Generally, down-hill mountain bike tracks should not be used for any other purpose. Under the National Parks and Reserved Land Regulations 2009 mountain biking, dog walking and horse riding must be within designated areas, and comply with any conditions associated with the designation.

Any new trails proposed will require assessment under the RAA process, consistent with the PWS Environmental Management System.

Many trails extend beyond the reserve boundary onto private land. The PWS does not bear the responsibility for the maintenance or signage of these trails, or the liability for their use. The Clarence City Council has negotiated some licence agreements over trails on private land, and continues to work towards licencing all the private trails relevant to recreational use of the reserve.

The reserve contains significant values that can, and have been degraded by recreational use. In particular, poor siting of trails and a lack of maintenance has allowed erosion to occur. It is essential that flora, fauna and other conservation values are not degraded by recreational use.

There is an intention to formalise the management responsibility of the Clarence Mountain Bike Park with a lease or similar arrangement, with the Clarence City Council. The details of the boundary of the lease area and the lease conditions are to be determined.
**Desired Outcomes**

- Car parking, toilets and signage provided in and adjacent to the reserve are adequate and appropriate. Adequate car parking is available for events and peak visitation times, to minimise disturbance to local residents and other reserve users.

- Information about access and trail locations, use restrictions, significance of reserve values and environmental threats is adequate, consistent and available to visitors before and during visits. Directional signage in the reserve is adequate to allow easy navigation around the trail/track network.

- The trail network is constructed and maintained to an appropriate standard, in consultation with relevant stakeholders. All trails are managed to avoid or minimise impact to natural values and allow safe use.

- All recreational trail segments on private property, accessed from the reserve, have a licence agreement with local or state government, as appropriate. Horse riding, dog walking and mountain bike riding continue to be permitted on designated tracks and trails, subject to the formal agreement of adjacent landowners.

- The potential for conflict between recreational user groups is minimised, and there are opportunities provided for the current recreational activities practiced within the reserve. All existing tracks and trails are assigned a use or uses, classified, formalised; or where appropriate, closed and adequately signposted.

**Management Response**

- The PWS develop a lease agreement, or appropriate formal instrument, for the Clarence City Council to take on the day-to-day management responsibility for the Clarence Mountain Bike Park area. The general area of the Clarence Mountain Bike Park is classified as Recreation Zone on Figure 6. A survey will need to be undertaken to clarify the spatial extent of the lease area.

  The lease agreement or instrument is to specify management and maintenance requirements, impact mitigation and liability responsibilities.

- The PWS is to work with the Clarence City Council and the Department of State Growth to determine the best location/s for car parking and funding options. Maintenance responsibilities should also be clarified as part of this process.

- Monitor toilet waste at the Belbins Road reserve entrance following the installation of the public toilet near the Clarence Mountain Bike Park entrance, to determine if the lack of a toilet is a significant issue, and requires further consideration.

- Permit mountain biking on the mountain bike trails as shown on Figure 5, and work with clubs to maintain those trails.

- Assess the suitability of the mountain bike trails for shared use with walkers, and signpost accordingly.

- Declare the fire trails, multiple use tracks and mountain bike tracks as designated areas for the respective permitted uses under the *National Parks and Reserves Management Regulations 2009*. Permit shared use of the designated fire trails for authorised vehicles, walking, trail running, mountain bike riding, dog walking (on lead), and horse riding. See Table 5 for definitions of trail/track types.

- The use of the sections of fire trails outside of the reserve is to be subject to the formal agreement of present and future landowners. The Clarence City Council is to continue to negotiate appropriate access licence agreements with adjacent landowners who have recreational trail on their land that forms part of the established track and trail network.

- In conjunction with representatives of the Meehan Range Trail Groomers Association and the Hobart Wheelers/ Dirt Devils Cycling Club, the PWS is to assess the mountain bike tracks to determine those that should be designated single direction trails, to reduce the potential for collisions. Signpost accordingly.
• Prepare a signage plan for the reserve, to direct the consistent development and installation of directional, information and interpretive signage. Interpretive themes should be drawn from the reserve’s unique natural and cultural values, including significant flora and fauna, past military use of the Belbins valley area, and Aboriginal cultural values. Include contact information for visitors to report unauthorised activities.

• Categorise and sign all mountain bike trails within the reserve, consistent with the signage implemented within the Clarence Mountain Bike Park area. Signage to be in accordance with the International Mountain Biking Association (IMBA) Australia Trail Difficulty Rating System, and cognisant of any signage plan developed for the reserve.

• Categorise, sign and manage the multiple use tracks in accordance with the PWS Walking Track Classification System, given that the predominant use is walking. Multiple use tracks that are frequently used by riders should also incorporate mountain bike information (i.e. difficulty rating under IMBA system).

• Any proposed new trails, trail upgrades and realignments to be assessed through the PWS RAA process.

• Unless otherwise designated by sign, walkers, including dog walkers and horse riders have right of way over mountain bike riders, and walkers including dog walkers have right of way over horse riders.

• Manage the designated fire trails in accordance with the PWS Fire Trail Standards (Fire Management Infrastructure Categories and Standards 2009) or equivalent, to the minimum category of Class 5. See Table 5 for definitions.

• Classify the disused vehicle track network no longer required for reserve management access as ‘multiple use tracks’ and permit shared use for walking, trail running, mountain bike riding and dog walking (on lead). See Table 5. The multiple use tracks may be used as temporary access for fire management operations or other emergency situations.

• The approved trail network is to be mapped and a map made publically available. Mapping to include track name/identifier and grade. Track names to be formalised in accordance with Nomenclature Board requirements. Other information on access, facilities, values and threats to be made available as practical.

• The PWS and the Clarence City Council to continue volunteer agreements with the Meehan Range Trail Groomers Association or equivalent, to ensure mountain bike trails are managed and maintained to the appropriate, safe standard that avoids impact to natural values.

• The PWS and the Clarence City Council to work with adjoining neighbours to minimise unauthorised access to the reserve from adjoining private land. Identify informal tracks and other cleared or disturbed areas which require remedial action, including closure. Undertake the remedial action in accordance with a rehabilitation plan.

• Monitor the reserve for unauthorised track construction and accelerated erosion of tracks. Any unauthorised tracks will be closed as soon as practical. Develop and implement a range of measures to increase compliance, including community awareness, signage, surveillance camera, and operational activities/patrols (fire and compliance).

• The PWS, in conjunction with the Clarence City Council consider installing mountain bike wash-down facilities and signage. Bike wash-downs are to be consistent with the NRM South’s “Ride Clean” biosecurity program, at the Clarence Mountain Bike Park.
• Work with the Clarence City Council, the Meehan Range Trail Groomers, the Clarence Mountain Bike Park Committee and other stakeholders to revise and update the Meehan Range Strategic Trail Plan, and ensure that it is consistent with the intent and management prescriptions of this management statement.

• Review recreational use, and the trail and track network in five years (in 2023) to determine whether the network is providing an adequate range of recreational opportunities for the users, and that trails are environmentally sustainable. This may include interim track user monitoring (i.e. installation of track counters) to provide baseline use data.

• The reserve has been zoned using the PWS management zoning system (Figure 6), and is to be managed accordingly. Areas of threatened vegetation communities and threatened plant populations are zoned Protection. No facilities or infrastructure are to be provided in Protection Zone. Recreational users will be encouraged to stay on the tracks (Recreation Zone) and event organisers will be encouraged to set up courses that can be completed whilst staying out of the Protection Zone areas. The PWS will assess applications for one-off events (i.e. regaining or orienteering) within the Protection Zone. There may be circumstances in which these events are permitted, subject to conditions that minimise impact.

Proposals that may require a change of zoning, for example construction of a new track or trail, require either a level 1 or level 2 Reserve Activity Assessment.
Table 5: Track and trail classification scheme for the Meehan Range (Redgate Section) NRA.

<table>
<thead>
<tr>
<th>Fire Trail</th>
<th>Multiple Use Track</th>
<th>Mountain Bike Trail (MBT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification Scheme</strong></td>
<td>PWS Fire Trail Standards (Fire Management Infrastructure Categories and Standards - 2009).</td>
<td>International Mountain Biking Association (IMBA) – Australia Trail Difficulty Rating System (adopted through the PWS Mountain Biking Policy and Procedures).</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Permanent four wheel drive access track that meets the minimum fire trail category of Class 5.</td>
<td>Trail designed and constructed specifically for mountain biking, and in accordance with the IMBA – Australia Trail Difficulty Rating System – Land Managers Guide. The IMBA system should be applied consistently across the reserve (i.e. intermediate trails within the reserve should be broadly consistent in their level of technical challenge – but not necessarily with intermediate trails elsewhere). May include technical features.</td>
</tr>
<tr>
<td><strong>Function / purpose</strong></td>
<td>Primarily for bushfire control and other reserve management access purposes. May be available for recreational use (shared). Non PWS management access (vehicular) by permit only (access to communications tower &amp; approved events). Not for general public vehicle use.</td>
<td>Mountain bike preferred trail. Generally cross country/ all mountain trail riding and mountain biking touring opportunities. May be other mountain biking styles such as down-hill or free-riding, and in the Clarence Mountain Bike Park also dirt jumps.</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>In accordance with the PWS Managed Vehicular Fire Trail Categories including naming and clearances.</td>
<td>In accordance with PWS and Australian standards and with reference to IMBA guidelines.</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>To the standard of the predominant use or for environmental management. The predominant use is walking therefore the tracks are to be managed in accordance with the Walking Track Classification System. Tracks require classification to the appropriate class (i.e. T3).</td>
<td></td>
</tr>
</tbody>
</table>
Table 5: Track and trail classification scheme for the Meehan Range (Redgate Section) NRA continued.

<table>
<thead>
<tr>
<th></th>
<th>Fire Trail</th>
<th>Multiple Use Track</th>
<th>Mountain Bike Trail (MBT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permitted uses</td>
<td>Shared use</td>
<td>Shared Use</td>
<td>Single Use</td>
</tr>
<tr>
<td></td>
<td>• Authorised vehicles</td>
<td>• Walking, trail running</td>
<td>• Mountain biking</td>
</tr>
<tr>
<td></td>
<td>• Walking, trail running</td>
<td>• Mountain biking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Mountain biking</td>
<td>• Dog walking (on lead only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Dog walking (on lead only)</td>
<td>Standard of tracks not suitable for horse riding.</td>
<td>Walkers are discouraged as most MBTs are single tracks where it is not possible to safely share the trail due to narrow width and poor sight lines and mountain biking style (i.e. down-hill).</td>
</tr>
<tr>
<td></td>
<td>• Horse riding</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above tracks and trail classification scheme is illustrated on Figure 5.
5.3 Other Uses

**Competition and Events**

As mentioned, the reserve is used for orienteering and rogaining events. Other recreational user groups also use the reserve for competitions and infrequent events.

**Training**

While the majority of people visit the reserve for recreation, the Redgate Section has been used for State Government Emergency Services training.

**Research and Education**

The reserve provides an accessible environment for research and data collection on a variety of environmental and recreational values. Research on the reserve’s biodiversity values is undertaken by DPIWE. The University of Tasmania has undertaken research on the site and uses the reserve for field excursions. Research subjects include the Risdon peppermint population, and the range and habitat of swift parrots and their blue gum forest habitat.

**Telecommunications**

There are currently mobile phone towers on private land adjacent to the reserve. Access to these can only be gained through the reserve. Access is authorised to communications technicians as needed, via written authority from the PWS.

**Management Considerations**

Access to the reserve for uses other than recreation should be considered on a case by case basis and in accordance with PWS policies and procedures.

There is an access road from Belbins Road to a reserve neighbour that has been constructed, in part, within the reserve. A licence agreement is required for the section of this road within the reserve.

**Desired Outcomes**

- Activities that add value and/or are not inconsistent with the objectives of the reserve are permitted.

**Management Response**

- The PWS will assess requests for events including training in accordance with the Group Activities and Events Policy and Procedures. Approved permits for events and activities will include relevant conditions, including those that minimise environmental impact.
- The PWS will continue to allow and encourage research and educational use, where it improves the inventory and understanding of the reserve, and where it adheres to relevant policy.
- The PWS will continue to permit access through the reserve for utility managers.
- Negotiate a licence agreement between the PWS and the private landowner, over the sections of private road constructed within the reserve.
The reserve has been zoned using the PWS Management Zoning System (Figure 6), and is to be managed accordingly. Areas of threatened vegetation communities and threatened plant populations are zoned Protection. No facilities or infrastructure are to be provided or developed in the Protection Zone. Event, training and educational reserve users will be encouraged to stay on the tracks (Recreation Zone) and event organisers will be encouraged to set up courses that can be completed whilst staying out of Protection Zone areas. However, the PWS will assess applications for one-off events (i.e. regaining or orienteering) within the Protection Zone. There may be circumstances in which these events are permitted, subject to conditions that minimise impact.

Proposals that would require a change of zoning, for example construction of a new telecommunications tower, require either a level 1 or level 2 Reserve Activity Assessment.

### 5.4 Volunteers

Volunteering is good for individual well-being and it has the potential to greatly improve reserve management. A TRC Tourism report in 2013 (see Further Information Sources) stated, with regard to the Blue Derby Mountain Bike Trails in the north-west of the State, “the long-term success of tracks is closely linked to community engagement”. Volunteers must be valued, encouraged and given access to information.

Formalising partnerships is beneficial to volunteers and land managers. Volunteer groups may get access to training, certification or funding through volunteering. Members could be covered for worker’s compensation and public liability in case of accidents or emergencies.

The Dirt Devils Mountain Bike Racing Club and the Meehan Range Track Groomers Association have been the most active volunteer groups within the reserve recently. The groups’ main interest is trail building and maintenance, and running community mountain biking events. The groups have a formal partnership agreement with the PWS.

### Management Considerations

There is a need to formalise and maintain partnerships with community organisations and user groups, and provide for agreed and authorised works plans that comply with PWS policies and procedures. Once works have been approved, groups would then be free to apply for funding on PWS-managed land with the full support of the PWS.

### Desired Outcomes

- The PWS and the Clarence City Council engage with, and support, volunteer groups to undertake approved activities in the reserve.

### Management Response

- The PWS to develop/continue formal partnership agreements with appropriate volunteer groups for the reserve, and develop and implement agreed priority works programs. The PWS to provide support, training and insurance through Wildcare Inc. to volunteer groups as appropriate.
- The Clarence City Council to continue to work with volunteers on trail management and maintenance and signage, within the Clarence Mountain Bike Park.
- The PWS to engage and encourage others to engage with the local community, to communicate reserve values, and encourage community participation in conservation and management activities, as appropriate.
6. Management Zoning

The aims of the PWS management zoning system are to:

- identify, protect and enhance reserve values by concentrating and directing recreation, tourism, management and development use to the most appropriate locations;
- provide a diverse range of recreation and tourism opportunities;
- take account of existing and future proposed access and use; and
- ensure substantial areas remain as little disturbed as possible.

The draft PWS zoning principles have been applied to the Meehan Range (Redgate Section) NRA (Figure 6). Every effort has been made to ensure that the zones applied in this reserve accurately reflect existing agreed and approved use and management intent.

The zone boundaries are indicative in the sense that they may not accurately align with identifiable landscape features on the ground. However, efforts have been made to apply zones in a way that can be discerned on the ground, where possible. For example, the Protection Zone reflects the mapped boundaries of threatened vegetation communities, and the width of the Recreation Zone can be measured from the centreline of the tracks/trails.

**Protection Zone**

The Protection Zone is reserved for the protection of highly significant values that are sensitive to disturbance. Proposed zone outcomes are: natural areas are retained in good condition; natural integrity is maintained; natural and cultural heritage values are protected; highly significant and/or vulnerable natural and/or cultural heritage values are free from disturbance; with a very low level of use which has little if any effect on natural integrity and cultural heritage values. No facilities or infrastructure will be provided within the Protection Zone.

Across the Redgate Section, the Protection Zone covers the recently (June 2017) mapped population of threatened species (crimsontip daisybush) and mapped extent of threatened vegetation communities (Risdon peppermint forest, blue gum dry forest and silver peppermint forest on sediments).

Any development that requires a change of zone, for example a new recreational trail that would be zoned Recreation, constructed through threatened vegetation (Protection Zone), will require at least a level 2 Reserve Activity Assessment, with specialist input (for example a botanist, zoologist and/or Aboriginal heritage officer).

**Natural Zone**

Areas in the reserve that are less likely to contain mapped threatened vegetation or threatened species habitat, and are not designated recreational tracks or areas, are zoned Natural Zone. This includes undisturbed or regenerating natural vegetation. Any proposed new trails will require at least a level 1 Reserve Activity Assessment.

**Recreation Zone**

The Recreation Zone has been designated over all of the approved tracks/trails within the reserve that are managed for mountain bike riding, walking, trail running, dog walking and/or horse riding. Use is to be managed to minimise the impact on natural and/or cultural values present within the Recreation Zone. The Recreation Zone is applied as a narrow corridor that covers an area of 10 metres either side of the track/trail, measured from
the centreline. This provides for a 20m buffer to allow for minor re-routing as required for environmental management. This width is consistent with the PWS Recreation Standards Framework specifications.

The Recreation Zone is also designated over the Belbins Road entry and the entire area of the Clarence Mountain Bike Park, extending out to include the down-hill tracks around the park. The park area will continue to be managed by the Clarence City Council under lease agreement or similar arrangement with the PWS.

Development allowed within the Recreation Zone may include the construction or upgrading of walking tracks, bike tracks, toilets, signs, roads and vehicle access, including parking areas.

Other Zones

There are no areas of Visitor Services or Utilities Zone within the reserve.
Figure 6. Application of Management Zones to the Meehan Range (Redgate Section) NRA.
7. Monitoring and Evaluation

The aim of this management statement is to document agreement on how the reserve is managed, used and enjoyed. The Meehan Range (Redgate Section) NRA Management Statement has also been written to outline the key recreational and natural values and legislative objectives which drive PWS management of the reserve. In this way, management of the reserve is clarified and provides a basis for more specific planning and future use. This will benefit both internal and external stakeholders.

Figure 7 The adaptive management cycle. (Source: Jones, 2005, 2009; DPIPWE, 2016)

The PWS is committed to an evidence-based, adaptive approach to reserve management. Preparing a management document is just one step in a cyclic process of good reserve management. Monitoring and evaluation are vital parts of reserve management, and this begins with a statement of clear, measurable performance indicators against the Key Desired Outcomes for reserve management.

7.1 Key Desired Outcomes

Some of the most important Key Desired Outcomes have been selected for monitoring. Due to limited resources it will not be possible to undertake more extensive monitoring. These Key Desired Outcomes relate to key values, threats and uses of the reserve:

1. Existing disturbed areas and sites of erosion within the reserve are mapped and prioritised for remediation.
2. The highest priority areas are remediated to prevent further erosion occurring.
3. Threatened plant populations and communities increase in extent and condition, within their natural range.
4. Habitat for threatened animals improves in quality and extent, within their natural range.

5. Natural bush views into the reserve are maintained, restored or enhanced.

6. Instances of threatening activities such as wood cutting, rubbish dumping, unauthorised vehicle access and unauthorised trail building continue to decrease.

7. Car parking, toilets and signage provided in and adjacent to the reserve are adequate and appropriate. Adequate car parking is available for events and peak visitation times, to minimise disturbance to local residents and other reserve users.

8. Information about access and trail locations, use restrictions, significance of reserve values and environmental threats is adequate, consistent and available to visitors before and during visits. Directional signage in the reserve is adequate to allow easy navigation around the trail network.

9. The trail network is designed, constructed and maintained to an appropriate and sustainable standard, in consultation with relevant stakeholders. All trails are managed to avoid or minimise impact to natural values, provide a quality visitor experience and allow safe use.

10. The potential for conflict between recreational user groups is minimised, and there are opportunities provided for current and future recreational activities practiced within the reserve. All existing tracks and trails are assigned a use or uses; classified; formalised; or where appropriate, closed. Signage is adequate.

11. The PWS and the Clarence City Council continue to engage with and support volunteer groups to undertake approved activities in the reserve.

The priority Key Desired Outcome performance indicators are detailed in Appendix 1.

7.2 Management Statement Review

It is intended that this management statement be reviewed in five years’ time to evaluate its implementation, effectiveness of the actions, and relevance. This evaluation is to be done by collating relevant data and evidence and reviewing progress against the priority Key Desired Outcomes performance indicators (Appendix 1). Recommendations should be made for any adjustments or changes in management that are required. The revised management statement should incorporate these recommendations.

Management Considerations

The monitoring actions for the Key Desired Outcomes are to be devised to take advantage of data already collected regularly, or data easily collected by PWS staff and/or stakeholders. It is important that the collection and storage of data and evidence is consistent. All data and evidence should be documented and retained for future reference.

Desired Outcomes

- Progress can be demonstrated towards achievement of the highest priority Key Desired Outcomes.

- The review of management statement implementation actions is conducted in a timely manner that allows for responsive adaptation of management operations for the benefit of all values and stakeholders.
Management Response

- Implement the monitoring actions as described in Appendix 1 to enable the assessment of management effectiveness and adaptation of management actions to allow achievement of the Key Desired Outcomes.

- Undertake an evaluation of the implementation of the management statement after five years. Review the management statement and update with the evaluation recommendations at the same time.
Sources of Further Information


## Appendix 1 – Monitoring the Highest Priority Key Desired Outcomes

<table>
<thead>
<tr>
<th>Outcomes 1 and 2 Geology and Soils</th>
<th>Existing disturbed areas and sites of erosion within the reserve are mapped and prioritised for remediation. The highest priority areas are remediated to prevent further erosion occurring.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator</td>
<td>Obvious erosion occurring.</td>
</tr>
<tr>
<td>Monitoring actions</td>
<td>Determine whether:</td>
</tr>
<tr>
<td></td>
<td>Sites of existing erosion have been identified and prioritised for remediation.</td>
</tr>
<tr>
<td></td>
<td>Appropriate rehabilitation actions have been taken, as per prioritisation and the <em>Tasmanian Reserve Management Code of Practice 2003</em>.</td>
</tr>
<tr>
<td></td>
<td>Construction of new mountain bike trails has been environmentally sustainable and has only occurred after consideration of erosion risk. No tracks/trails constructed in locations or in a manner that would result in erosion.</td>
</tr>
<tr>
<td>Great result</td>
<td>By 2023:</td>
</tr>
<tr>
<td></td>
<td>Erosion sites have been identified, prioritised and remediated.</td>
</tr>
<tr>
<td></td>
<td>New trails constructed are not causing erosion.</td>
</tr>
<tr>
<td>Acceptable result</td>
<td>By 2023:</td>
</tr>
<tr>
<td></td>
<td>Erosion sites have been identified and prioritised. Some erosion sites have been remediated.</td>
</tr>
<tr>
<td>Unacceptable result</td>
<td>By 2023:</td>
</tr>
<tr>
<td></td>
<td>Sites still eroding.</td>
</tr>
<tr>
<td>Outcomes 3, 4 and 5 Flora and Fauna</td>
<td>Threatened plant populations increase in extent and condition. Habitat for threatened animals improves in quality and extent. The condition and extent of threatened vegetation increases.</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Indicator</td>
<td>Knowledge of health and number/size of threatened species populations and threatened vegetation.</td>
</tr>
</tbody>
</table>
| Monitoring actions                | • Determine which reserve use/s degrade, or have the potential to degrade, threatened species habitat or threatened vegetation. Determine the restrictions necessary to avoid that impact.  
• Threats to threatened species and threatened vegetation communities are managed.  
• Threatened vegetation and threatened plants are re-mapped within five years. |
| Great result                      | By 2023:  
• Use of the reserve does not degrade threatened species habitat or threatened vegetation. Necessary restrictions to avoid that impact are in place.  
• Threats to threatened species and vegetation are managed.  
• The extent of threatened vegetation and threatened plant species has not reduced due to human use of the reserve. |
| Acceptable result                 | By 2023:  
• Use of the reserve does not significantly degrade threatened species habitat or threatened vegetation. Necessary restrictions to avoid use impacts are in place.  
• Most threats to threatened species and threatened vegetation are managed.  
• The extent of threatened vegetation and threatened plant species has not significantly reduced due to human use of the reserve. |
| Unacceptable result               | By 2023  
• Use of the reserve continues to degrade threatened species habitat or threatened vegetation. Necessary restrictions to avoid that impact are not in place.  
• Threats to threatened species and threatened vegetation are not managed.  
• The extent of threatened vegetation and threatened plant species has reduced due to human use of the reserve. |
### Outcome 6
**Threats from non-recreational human use**

**Instances of threatening activities such as wood cutting, rubbish dumping, presence of feral cats, unauthorised vehicle access and unauthorised trail building continue to decrease.**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Instances of threatening activities such as wood cutting, rubbish dumping, unauthorised vehicle access and unauthorised trail building.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Monitoring actions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• The PWS continues to patrol the reserve. Compliance operations.</td>
<td></td>
</tr>
<tr>
<td>• Reports of illegal or unauthorised activity.</td>
<td></td>
</tr>
<tr>
<td>• The PWS are actively involved in an integrated, municipal wide approach to feral cat control.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Great result</th>
<th>By 2023:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The PWS has continued to patrol the reserve, and to carry out compliance operations.</td>
<td></td>
</tr>
<tr>
<td>• It is possible for reserve visitors to report illegal activity and some reporting has occurred.</td>
<td></td>
</tr>
<tr>
<td>• The PWS continues to work with neighbouring landowners and unauthorised access has reduced.</td>
<td></td>
</tr>
<tr>
<td>• The PWS is working collaboratively with Clarence City Council and other land owners and managers within the municipal area on an integrated approach to feral cat control, and cat numbers are decreasing.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acceptable result</th>
<th>By 2023:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The PWS has undertaken occasional patrols in the reserve. Some compliance operations have been undertaken.</td>
<td></td>
</tr>
<tr>
<td>• It is possible for reserve visitors to report illegal activity.</td>
<td></td>
</tr>
<tr>
<td>• The PWS has worked with neighbouring landowners and unauthorised access has reduced.</td>
<td></td>
</tr>
<tr>
<td>• An integrated approach to feral cat control in the Clarence municipality has been initiated, with a control program scheduled.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unacceptable result</th>
<th>By 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The PWS has undertaken no patrols in the reserve. No compliance operations have been undertaken on known illegal activity.</td>
<td></td>
</tr>
<tr>
<td>• It is difficult for reserve visitors to report illegal activity, and no reporting has occurred.</td>
<td></td>
</tr>
<tr>
<td>• Unauthorised access has increased.</td>
<td></td>
</tr>
<tr>
<td>• An integrated approach to feral cat control has not occurred, and the number of feral cats in the reserve has increased.</td>
<td></td>
</tr>
</tbody>
</table>
Outcomes 7, 8, 9 and 10
Recreational use and infrastructure

Car parking, toilets and signage provided in and adjacent to the reserve are adequate and appropriate. Adequate car parking is available for events and peak visitation times, to minimise disturbance to local residents and other reserve users.

Information about access and trail locations, use restrictions, significance of reserve values and environmental threats is adequate, consistent and available to visitors before and during visits. Directional signage in the reserve is adequate to allow easy navigation around the trail network.

The trail network is designed, constructed and maintained to an appropriate and sustainable standard, in consultation with relevant stakeholders. All trails are managed to avoid or minimise impact to natural values, provide a quality visitor experience, and allow safe use.

The potential for conflict between recreational user groups is minimised and there are opportunities provided for the current recreational activities practiced within the reserve. All existing tracks and trails are assigned a use or uses, classified, formalised or where appropriate, closed. Signage is adequate.

Indicator

Car parking, toilets and signage is adequate for reserve use.
Tracks and trails are used safely, without conflict between user groups, and all user groups have access to adequate trails.
No reserve natural values are damaged by recreational use.

Monitoring actions

- Check that adequate and appropriate car parking, toilets and signage are provided in and adjacent to the reserve.
- Check that adequate and consistent information about access and trail locations, use restrictions, significance of reserve values and environmental threats is publicly available. Directional signage is placed across the reserve and is adequate to allow easy navigation around the trail network.
- Check that the trail network is constructed and maintained to an appropriate standard and that all trails are managed to avoid or minimise impact to natural values and allow safe use.
- Check that all recreational trail segments on private property, accessed from the reserve, have a licence agreement in place, and that horse riding, dog walking and mountain bike riding continue to be permitted on designated tracks and trails.
- Check that the potential for conflict between recreational user groups has been minimised and there are opportunities provided for the current recreational activities practiced within the reserve. Check that all existing tracks and trails are assigned: a use or use; classified; formalised or where appropriate closed; and adequately signposted.
<table>
<thead>
<tr>
<th>Great result</th>
<th>By 2023:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car parking, toilets and other visitor support facilities have been provided, and are adequate for the type and level of visitation.</td>
<td></td>
</tr>
<tr>
<td>Up-to-date information and signage is provided and maintained, to ensure visitors can navigate the trail network, understand the values and use restrictions within the reserve.</td>
<td></td>
</tr>
<tr>
<td>The approved trail network has been designed, constructed– or upgraded, to the appropriate standard. The trail network is regularly maintained with the support of volunteers under a PWS Partnership Agreement.</td>
<td></td>
</tr>
<tr>
<td>Licence or other agreements with the Clarence City Council and private land owners are in place, to formally provide for the use and management of the trail network.</td>
<td></td>
</tr>
<tr>
<td>There are no reports of user conflict or incidents, within the reserve.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acceptable result</th>
<th>By 2023:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car parking, toilets and other visitor support facilities have been provided, and cater for the type and level of use the majority of the time.</td>
<td></td>
</tr>
<tr>
<td>Adequate information and signage has been provided, to ensure visitors can navigate the trail network, understand the values and use restrictions within the reserve.</td>
<td></td>
</tr>
<tr>
<td>The majority of trails within the reserve have been designed and constructed – or upgraded, to the appropriate standard. The trail network is regularly maintained with the support of volunteers under a PWS Partnership Agreement.</td>
<td></td>
</tr>
<tr>
<td>The licence agreement with the Clarence City Council is in place, and there are licence agreements with the majority of private landowners, to formally provide for the use and management of the trail network.</td>
<td></td>
</tr>
<tr>
<td>Reports of user conflict and incidents within the reserve are infrequent.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unacceptable result</th>
<th>By 2023:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car parking, toilets and other support facilities are inadequate for the type and level of use.</td>
<td></td>
</tr>
<tr>
<td>Information and signage is inadequate, and new visitors have difficulty navigating around the trail network, and don’t understand reserve values or use restrictions.</td>
<td></td>
</tr>
<tr>
<td>Few trails have been designed, constructed or upgraded to the appropriate standard. Maintenance of the trail network is infrequent, with no formal volunteer Partnership Agreement.</td>
<td></td>
</tr>
<tr>
<td>Licence agreements with the Clarence City Council and private landowners have not been finalised.</td>
<td></td>
</tr>
<tr>
<td>Reports of user conflict and incidents are frequent.</td>
<td></td>
</tr>
</tbody>
</table>
### Outcome 11

**Volunteers**

The PWS and the Clarence City Council continue to engage with and support volunteer groups to undertake approved activities in the reserve.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Volunteers are supported to work in the reserve; they are insured, coordinated and trained where necessary, and undertake works that further the aims of this management statement.</th>
</tr>
</thead>
</table>
| Monitoring actions | - Check that the PWS has maintained up to date formal partnership agreements with appropriate volunteer groups for the reserve, and developed and implemented agreed priority works programs. The PWS has provided support and training and insurance through Wildcare Inc. to volunteer groups. Partnerships agreements are reviewed and revised on a regular basis.  
- Check that the Clarence City Council has continued to work with volunteers within and around the Clarence Mountain Bike Park for track maintenance and management. |
| Great result | By 2023:  
- The PWS has maintained formal partnership agreement/s and effective, ongoing collaboration with volunteer groups. Agreed priority works programs have been developed and implemented. The PWS has provided support and training and insurance through Wildcare Inc. to volunteer groups.  
- The Clarence City Council has continued to work with volunteers within and around the Clarence Mountain Bike Park for track maintenance and management. |
| Acceptable result | By 2023:  
- The PWS has maintained partnership agreement/s with volunteer groups for the reserve, and agreed priority works programs have been developed and have started to be implemented. The PWS has provided support and training and insurance to volunteer groups.  
- The Clarence City Council has continued to work with volunteers within and around the Clarence Mountain Bike Park for track maintenance and management. |
| Unacceptable result | By 2023:  
- The PWS no longer has formal partnership agreements with volunteer groups for the reserve, and agreed priority works programs have not been developed or implemented. The PWS have not provided support and the volunteer groups are not insured.  
- The Clarence City Council no longer works with volunteers for track maintenance and management. |
CONTACT DETAILS

Tasmania Parks and Wildlife Service
GPO Box 1751
Hobart, Tasmania, 7001

1300 TASPARKS (1300 827 727)

www.parks.tas.gov.au