Macedon Ranges Shire Council

Final Report:

Environmental Management Plan – Mount Gisborne Reserve, Gisborne

Prepared by Atlas Ecology

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Victorian Local Sustainability Accord

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Environmental Management Plan
Mount Gisborne Reserve, Gisborne

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Front cover photos, left to right: grazing Kangaroos at sunset; view towards the Macedon Ranges; Running Postman *Kennedia prostrata*. Back cover photo: Large basalt boulders on summit of Mount Gisborne.

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We would like to acknowledge the Wurundjeri who are the traditional custodians of this land.

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1 VISION

Mount Gisborne Reserve is valued by the community of Gisborne and Gisborne South as an ecologically and geologically significant location that supports flora species of national importance.

Biodiversity at Mount Gisborne Reserve is actively managed by Council and the community to conserve and enhance its values and to provide resilience to this endangered vegetation community.

Local residents and visitors alike are provided an opportunity to learn and engage with Scoria Cone Woodland environments through an informal access track that rises to the summit of Mount Gisborne.

Mount Gisborne Reserve provides passive recreational and tourism opportunities for photography, bird watching, naturalists and students.

Mount Gisborne Reserve is valued as an important contributor to the tourism values of the Macedon Ranges and its reputation as a clean, green destination.

2 INTRODUCTION

2.1 Reserve Location and Description

Mount Gisborne Reserve ('the reserve') is a12.7 hectare Scoria Cone Woodland owned by the Macedon Ranges Shire Council. The reserve is located on the summit of Mount Gisborne, a 100 metre high lava hill that overlooks the township of Gisborne. The reserve is located approximately 55 kilometres north-west of Melbourne and approximately four kilometres south of the Gisborne central business district (Figure 1).

The reserve features a woodland and open grassland environment that supports a diversity of regionally and locally significant flora and fauna species, including one flora species of national significance – the Matted Flax-lily *Dianella amoena*. Vegetation is dominated by a canopy of Manna Gum *Eucalyptus viminalis* subsp. *viminalis* over a dense ground layer of Common Tussock-grass *Poa labillardierei*. The mid-storey comprises a variety of wattle *Acacia* and shrub species to varying levels of cover. This endangered vegetation community is rare and localised and is the only site of its type in the Port Phillip and Westernport catchment.

An informal vehicle access and walking track ascends the reserve to the summit of the mount, which features large basalt boulders and rock crevices that harbour the highest diversity of indigenous species within the reserve. The summit provides the visitor with spectacular views of the Macedon Ranges, Pyrete Range and Melbourne's CBD.

2.2 Regional Context

The reserve is bordered by small to medium sized grazing farms and residential homes with large manicured gardens. The plains grassy woodland that once dominated to the north and east of the reserve has been largely cleared for grazing, agriculture and housing, with the suburban fringe of Gisborne steadily encroaching upon the base of Mount Gisborne. Vegetation surrounding the reserve varies from highly modified and fragmented patches to larger stands on private farms.

Less than two kilometres to the west of the reserve is the Pyrete Range, a 5,930 hectare reserve which forms part of the 14,250 hectare Lerderderg State Park. The Pyrete Range covers an extensive area of relatively undisturbed old growth forest in steep terrain and forms an extensive part of the Lake Merrimu Water Supply Catchment. The Macedon Ranges lie less than seven kilometres to the north of the reserve.

2.3 Zones and Overlays

The Mount Gisborne Reserve is currently zoned Public Park and Recreation (PPRZ). A Significant Landscape Overlay (SLO2) covers the entire reserve. The objective of the SLO2 is to; ensure that the siting and design of buildings and works in rural areas, including the choice of building materials, is responsive to the landscape character of the Macedon Ranges Shire Council; maintain vegetation on escarpments and ridgelines for its landscape value; control the location and visual impact of buildings by requiring adequate setbacks from cliff tops, ridgelines and other prominent areas.

2.4 Bioregion

Victoria is divided into 28 bioregions each representing different ecological characteristics and underlying geological features. The Bioregional Conservation Status of an Ecological Vegetation Class (EVC) (see Section 3.1.1) is assessed at this bioregional level.

The reserve occurs within the *Victorian Volcanic Plains Bioregion* (VVP), which extends from the northern suburbs of Melbourne to west of Portland in the west. The bioregion is bordered by the Great Dividing Range to the north and Warrnambool and Colac to the south (DSE 2012).

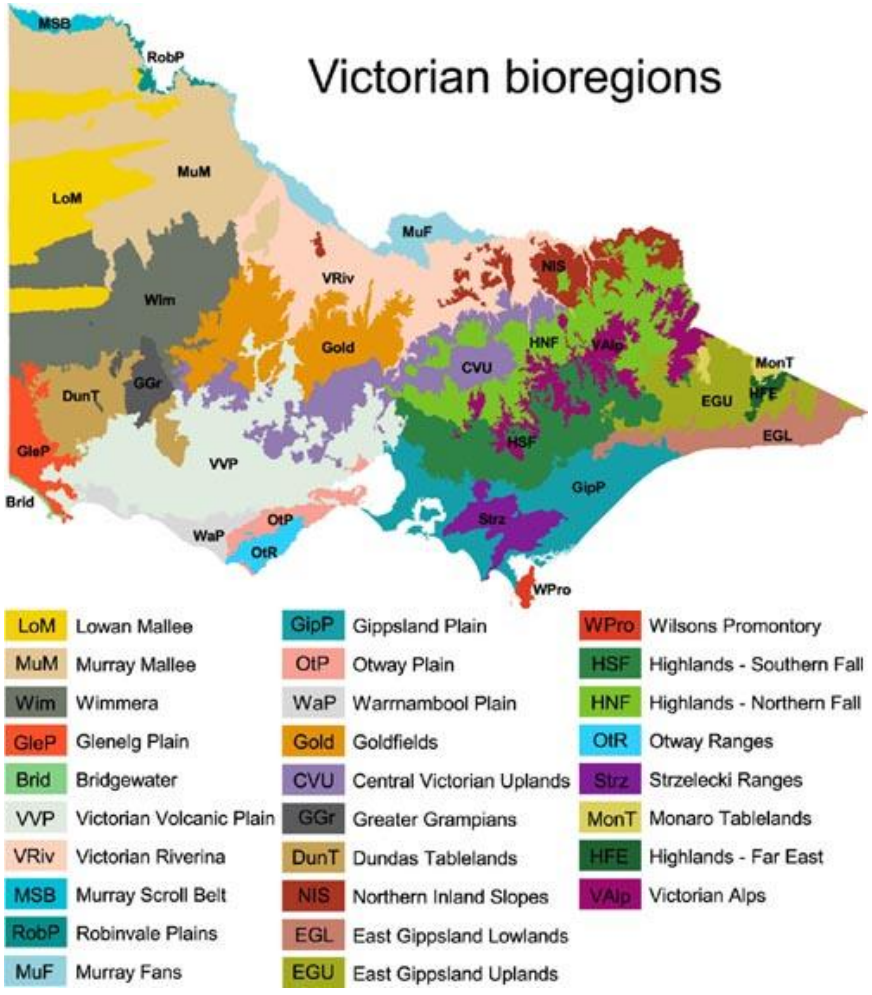
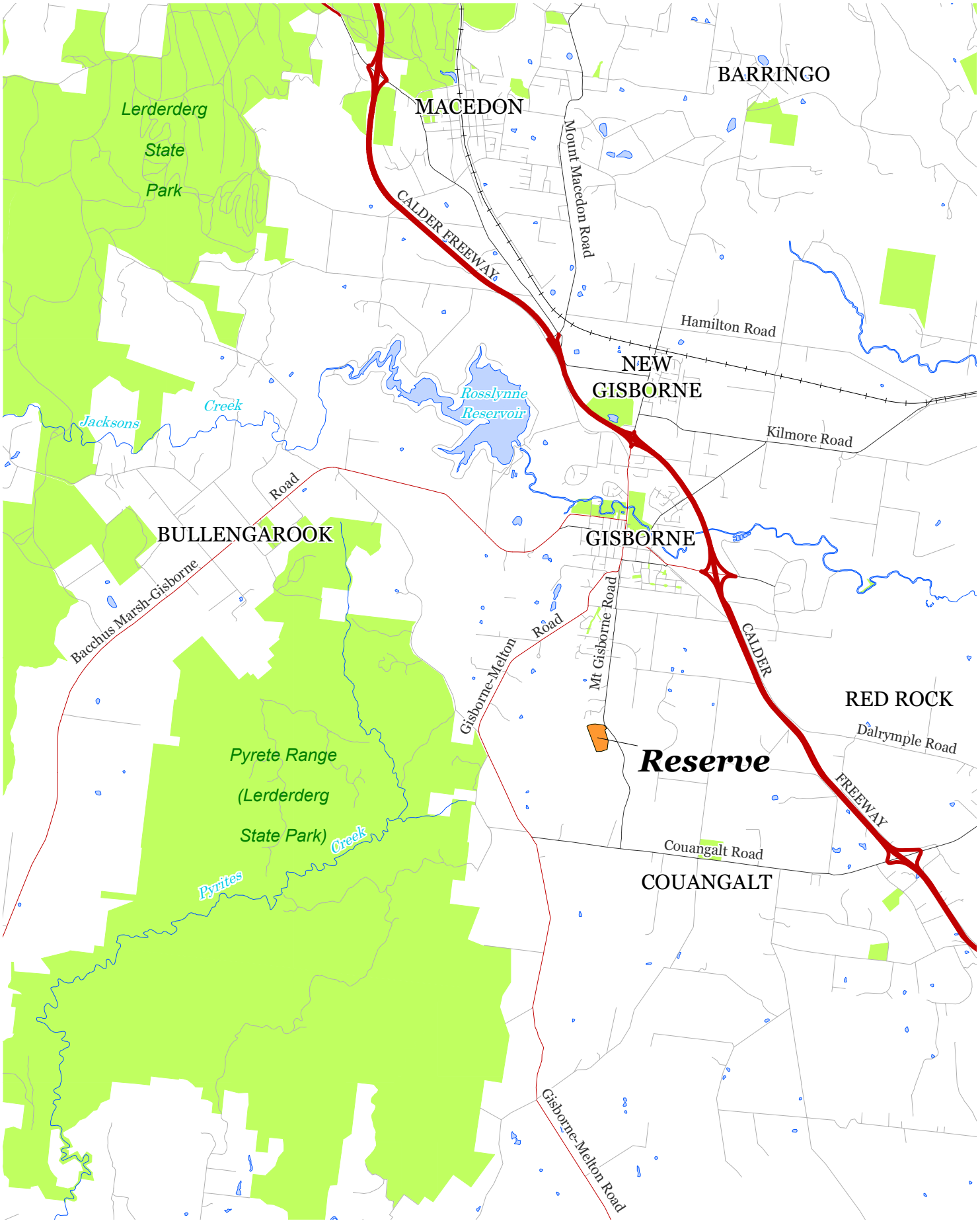


Figure 1 - Location of reserve



Reserve

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Note: Map features are approximate and are to be used as a guide only.

3 EXISTING VALUES AND USES WITHIN RESERVE

3.1 Flora

3.1.1 Ecological Vegetation Class and Vegetation Communities

Ecological Vegetation Classes (EVC's) consist of groups of plants which commonly occur together within a recognisable environmental niche. This is determined by rainfall, soil type, soil moisture levels, slope and altitude (e.g. mountains, plains, and foothills), aspect (e.g. north or south) and type of canopy (e.g. open or closed canopy). An EVC is likely to be made up of a similar group of species where a certain combination of these factors recurs. An EVC typically consists of between one to three different vegetation layers (such as overstorey, mid-storey and ground layer). There are approximately 300 recognised EVCs within Victoria.

One EVC is present within the reserve – Scoria Cone Woodland (EVC 894). This vegetation community inhabits freely-draining volcanic (scoria) cones on recent Quaternary basalt soils. Volcanic cones on the Victorian Volcanic Plains of western Victoria (see Section 2.4) produced the most recent volcanic lava flows within the state; with Mount Gisborne being one of the most intact remnants within the local area.

Scoria Cone Woodland occurs at altitudes of between 500-640 metres and soils are fertile yet stony and skeletal (Oates and Taranto 2001). Typical scoria cone vegetation includes an overstorey of Manna Gum and Drooping Sheoak *Allocasuarina verticillata*, with a mid-layer of Blackwood *Acacia melanoxylon* and Sweet Bursaria *Bursaria spinosa* subsp. *spinosa* (Oates and Taranto 2001). The ground layer typically supports a variety of tussock-grasses, ground ferns, herbs, lilies and rushes (DSE 2004).

Mount Gisborne reserve supports all three structural layers of Scoria Cone Woodland vegetation; however the overstorey and mid-storey components are absent to varying degrees within parts of the reserve. Vegetation along the northern boundary alters slightly with the addition of increased moisture. This is reflected in slightly different vegetation composition that has affinities with a more fertile grassy forest community.

Scoria Cone Woodland is listed as an endangered EVC within the Victorian Volcanic Plains Bioregion (DSE 2012). The vegetation community is rare and localised; restricted to the Mount Gisborne area within the Port Phillip and Westernport catchment (Oates and Taranto 2001).

3.1.2 Flora Species

No formal flora surveys have previously been undertaken within the reserve. Four site visits conducted from August to October 2012 identified a total of 109 flora species within the

reserve. This includes 65 indigenous and 44 introduced flora species. All of these species, together with their significance rating or status, are listed in Appendix 1.1.

3.1.3 Current Vegetation Description

Mount Gisborne reserve can generally be divided into three broad zones based on position in the landscape and vegetation composition (see Figure 2). Generally areas that support large basalt boulders and their resultant rock crevices harbour the highest cover and diversity of indigenous species within the reserve. Rocky outcrops are concentrated at the summit of Mount Gisborne and to the south-west of the summit (Zone 1, Figure 2). Another significant rocky outcrop occurs lower down the slope within the Zone 2 area (Figure 2). Rocky outcrop occurrence reduces significantly towards the base of the volcanic cone (the northern section of reserve) resulting in a reduction in species diversity.

Mount Gisborne summit – Zone 1

Mount Gisborne summit and adjacent rocky outcrop (Figure 2) supports open grassland and exposed basalt boulders with minimal overstorey or mid-storey vegetation (Plate 1). Moister shaded areas to the south-west of the summit support one mature Messmate Stringybark *Eucalyptus obliqua* and several large dead trees and stags (Plate 2). Narrow-leaf Peppermint *Eucalyptus radiata* subsp. *radiata* persists in highly exposed areas along the western boundary (see Figure 2, Plate 3). Both of these eucalypt species are atypical of this vegetation community and may indeed represent a neighbouring vegetation community, Grassy Forest, which occurs to the west within the foothills. Blackwoods are the dominant tree species in the south-western corner with their grand size and age a distinguishing feature (Plate 4).

Plate 1. View from the summit of Mount Gisborne

Plate 2. Stag with hollows to the south-west of the summit

Plate 3. Large Narrow-leaf Peppermint near summit on western boundary

Plate 4. Significant old Blackwood population south-west of summit. Common Tussock-grass in foreground

The understorey along the shady south-facing slope of the outcrop (Figure 2) is dominated by large Common Tussock-grass *Poa labillardierei* (see Plate 3). This species is a key feature of the Scoria Cone Woodland community within this reserve. Other native co-dominants include Austral Bracken *Pteridium esculentum*, the tall herb Variable Willow-herb *Epilobium billiardierianum*, Soft Crane's-bill *Geranium potentilloides* and the sprawling herb Bidgee-widgee *Acaena novae-zelandiae*. These species are dominant across the entire reserve. Introduced pastoral species such as Flatweed *Hypochaeris radicata*, Brown Top-bent *Agrostis capillaris* and Sweet Vernal-grass *Anthoxanthum odoratum* are moderately high in cover and indicative of past grazing within the reserve.

The understorey along the exposed summit of the cone supports markedly different species composition and cover. Common Tussock-grass is less dominant with introduced pastoral species such as Brown Top-bent and Flatweed more apparent (Plate 5). Native herb and fern cover is far greater with a wide variety of species along the rocky summit and in rock crevices. Species recorded in this area include Necklace Fern *Asplenium flabellifolium* (Plate 6), Common Maidenhair Fern *Adiantum aethiopicum*, Common Woodruff *Asperula conferta*, Slender Speedwell *Veronica gracilis*, Prickly Starwort *Stellaria pungens*, Sheep's Burr *Acaena echinata* and Ivy-leaf Violet *Viola hederacea*. Several old remnant Sweet Bursaria are present near the summit which are the only individuals recorded within the reserve.

Plate 5. Exposed rocky summit

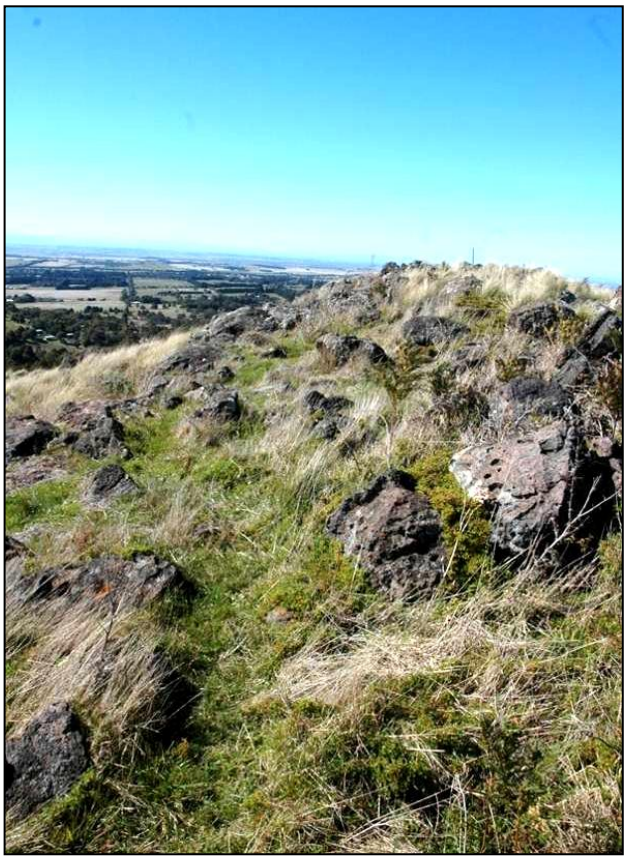


Plate 6. Necklace Fern along a rock crevice

A remnant Drooping Sheoak population exists on neighbouring land near the summit, however no mature trees are present within the reserve itself. It is likely that Drooping Sheoak once occurred along the volcanic cone summit but may have been removed through clearance and persistent grazing in the past. The neighbouring population is, however, regenerating within the reserve with several small recruits observed.

Open, exposed and treeless areas surrounding the summit are uniform in cover; supporting dense Common Tussock-grass, Bidgee-widgee and Variable Willow-herb with a high cover of introduced Flatweed, Brown Top-bent, Ribwort *Plantago lanceolata* and Cape Weed *Arctotheca calendula*. Of particular note is a small mature population of remnant Clustered Everlasting *Chrysocephalum semipapposum* just below the cone summit. The noxious weeds Blackberry *Rubus fruticosus*, Horehound *Marrubium vulgare* and Sweet Briar *Rosa rubiginosa* occupy small discrete parts around the summit of the cone (Figure 3).

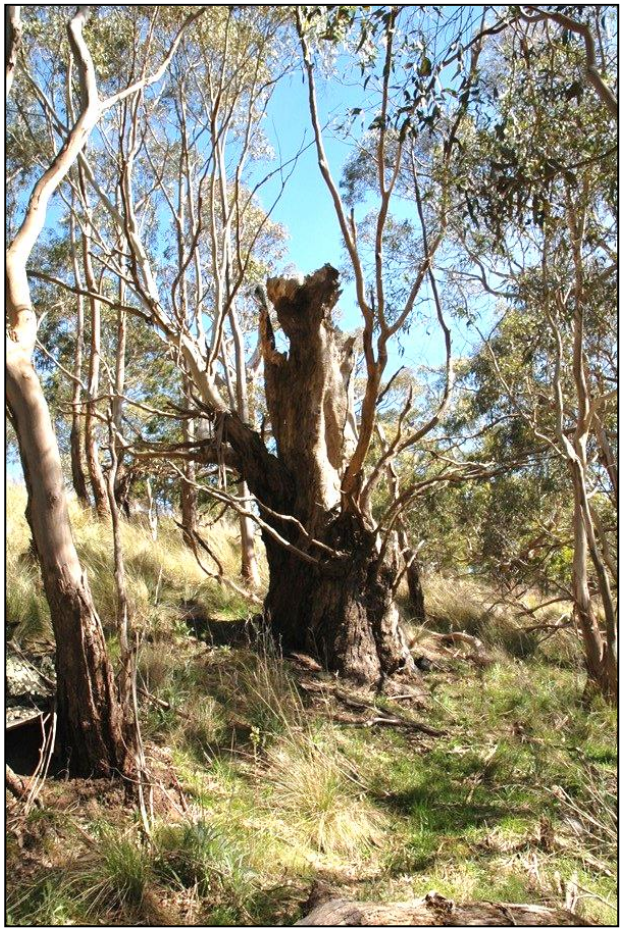
A small area in the south-eastern corner is dominated by introduced pastoral species and does not support remnants of Scoria Cone Woodland (Figure 2). This area has been subject to soil compaction and persistent grazing by goats that enter the reserve via a nearby entrance point.

Mid-slope – Zone 2

This zone is dominated by large old and regenerating Manna Gum of varying age classes (Plates 7 & 8). No Manna Gums were observed near the volcanic cone summit.

Plate 7. Manna Gum woodland mid-slope with Mount Macedon in the background

Plate 8. Large old Manna Gum stag surrounded by young recruits



Blackwood on the summit are replaced with Black Wattle *Acacia mearnsii* mid-slope (Plate 9) and the diversity of species amongst rocky outcrops remains high (Plate 10).

Plate 9. Black Wattles are common mid-slope

Plate 10. Diversity is highest amongst rocky outcrops

The most significant rocky outcrop occurs along the southern portion of Zone 2 (Figure 2); forming an almost terraced-like landscape from the Mount Gisborne summit. Key species here include Cotton Fireweed *Senecio quadridentatus* and Austral Stork's-bill *Pelargonium australe* protected amongst the rock crevices (Plate 11). As the rocky outcrop diminishes further downslope, species composition becomes uniform and less diverse. Common Tussock-grass, Bidgee-widgee and introduced species remain yet there is far less native species diversity. Large trees, stags and woody debris from fallen limbs are relatively high in cover (Plate 12).

Small discrete patches of Blackberry are scattered throughout this zone (see Figure 3).

Plate 11. Austral Stork's-bill and Cotton Fireweed are common amongst rock crevices

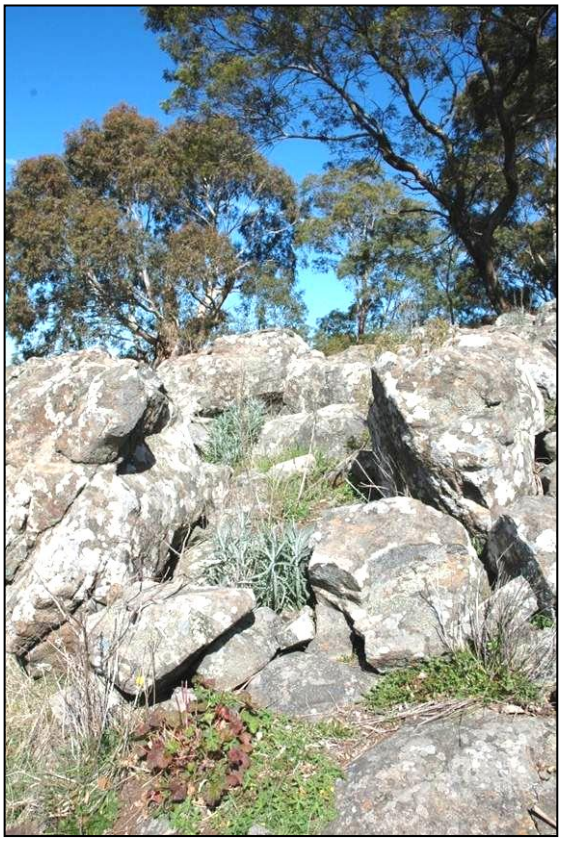


Plate 12. Stumps and woody debris are common mid-slope

Lower-slope – Zone 3

Species composition is generally similar here to the rest of the reserve; however species more typical of fertile foothill environments begin to emerge. Narrow-leaf Peppermint, Broad-leaved Peppermint *Eucalyptus dives* and Cherry Ballart *Exocarpos cupressiformis* occur along the far lower slopes near Woodland Drive, intermingled with Manna Gum. There is a relatively high proportion of large old trees here and excellent recruitment in the ground layer (Plate 13). Blackwoods return to the mid-storey together with Silver Wattle *Acacia dealbata* subsp. *dealbata* within moist areas near the roadside. Wattle Mat-rush *Lomandra filiformis* subsp. *coriacea,* Small-leaved Clematis *Clematis microphylla* and Common Rice-flower *Pimelea humilis* (Plate 14) emerge within the ground layer which is still dominated by Common Tussock-grass, Bidgee-widgee, Cotton Fireweed and introduced pastoral species. There are fewer rocky outcrops and isolated boulders however those that occur harbour herbs and rock ferns (Plate 14).

Plate 13. The lower slopes support larger trees and higher vegetation cover

Plate 14. Left- Common Rice-flower beginning to flower, Right- Common Maidenhair Fern persists in rock crevices

The nationally significant Matted Flax-lily *Dianella amoena* was observed in one location in this zone (Figure 2); forming a mat approximately 1 x 2 metres in area. No other specimens were observed within the reserve however a more targeted search of the species could reveal additional plants.

A small dam, likely formed when Woodland Drive was constructed, is located along the northern boundary (see Plate 15, Figure 2). Water run-off from the roadside, volcanic cone and neighbouring property feeds into this dam which supports native rushes and herbs along its fringes. Blackberry surrounds the dam and nearby areas (Figure 3). Other key weeds include Montpellier Broom *Genista monspessulana* near the roadside and a small discrete patch of St. John's Wort *Hypericum perforatum* subsp. *veronense* (Figure 3).

A telecommunications tower with associated infrastructure occupies a fenced area near Woodland Drive (Figure 2). Approximately 10 metres around the fenced area has been disturbed through vegetation clearance and scalping of the ground layer. Weed control works targeting Montpellier Broom have been undertaken here as part of fuel reduction works (P. Gray, *pers.comm*.).

See Appendix 4 for definitions of vegetation condition.

3.1.4 Significant Flora Species

National Significance

One flora species of national significance has recently been recorded at the reserve – Matted Flax-lily *Dianella amoena* – which is listed as endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act (1999)* (EPBC Act), threatened under the State *Flora and Fauna Guarantee Act 1988* (FFG Act) and endangered under DSE's *Advisory List of Rare or Threatened Plants in Victoria – 2005* (DSE 2005a).

Matted Flax-lily *Dianella amoena*

One spreading Matted Flax-lily encompassing an area of approximately 1 x 2 metres has been located on the lower slopes of the reserve (see Figure 2). This species has not previously been recorded within the local area. The closest record of the species is approximately 8-10 kilometres north along Hamilton Road in New Gisborne and to the north-east along the railway line at Riddells Creek (FIS 2012).

Matted Flax-lily is a tufted perennial lily that can grow up to 90 centimetres tall and form mats up to five metres wide (DSE 2005b). The plant's natural habitat includes grasslands, woodlands and grassy wetlands (DSE 2005b) but it is known to occur amongst dense introduced grasses in highly modified environments (pers.observ.).

Any future flora surveys of the reserve should incorporate targeted surveys for this species.

Matted Flax-lily

Two other nationally significant flora species have previously been recorded within 10 kilometres of the reserve: Swamp Fireweed *Senecio psilocarpus* (Vulnerable) and Swamp Everlasting *Xerochrysum palustre* (see Appendix 1.2). These species will not be present in the reserve due to lack of suitable habitat. An additional 23 flora species of state significance have previously been recorded within 10 kilometres of the reserve (see Appendix 1.2). There is potential habitat for several of these species, however their presence is considered low to unlikely due to lack of suitable habitat and absence during the current survey undertaken at the optimal time of year for species detection.

Regional Significance

A total of 41 of the 65 indigenous flora species recorded at the reserve are considered to be significant at a regional scale (within the Victorian Volcanic Plain bioregion). Appendix 1.1 contains a list of regionally significant and locally significant flora species.

Definitions of ecological significance for species, communities and sites are provided in Appendix 3.

3.1.5 Significant Vegetation Communities

Scoria Cone Woodland is not listed as a threatened vegetation community under Commonwealth or State environmental legislation; however the community is considered significant at a regional scale with Mount Gisborne supporting the only intact example of Scoria Cone Woodland within the Port Phillip and Westernport catchment area. The community has likely always been highly rare and localised due to its restriction in range to volcanic cones; however vegetation clearance since European settlement has restricted its range even further with almost all of the community cleared within the catchment.

Other Scoria Cone Woodlands on remnant volcanic cones are scattered across the plains and uplands of western Victoria, with the closest example occurring on Mount Bullengarook approximately eight kilometres to the west (FIS 2012).

Definitions of ecological significance for species, communities and sites are provided in Appendix 3.

3.2 Fauna

3.2.1 Fauna Assessment

Mount Gisborne has not been subject to any previous formal fauna surveys. A combination of desktop searches and site visits conducted for this management plan aims to remedy this lack of data and inventory by providing a snapshot of existing fauna species. This data has informed the recommendations provided regarding future management of the reserve.

3.2.2 Fauna Species at the Reserve

Three site visits conducted from late September to early October 2012 recorded a total of 39 fauna species. This comprises 7 mammals (4 native and 3 introduced), 27 birds (26 native and one introduced), 2 native reptiles and 3 native frogs. These species, together with their significance rating or status, are listed in Appendix 2.1.

The preliminary results of this assessment are provided below:

Native Birds

Three BirdLife Australia area search surveys were conducted– one in the afternoon, one in the morning and one evening spotlighting session. The BirdLife Australia area search involves surveying for bird species around a central point; these areas can cover a small area within 500 metres of the central point, or a large area out to 5 kilometres. The search area can be any shape and the search time can be anywhere between 20 minutes and one month. The surveys undertaken at Mount Gisborne were all 1 – 2 hours in duration and focussed within approximately 500 metres of a central point. The surveys revealed a moderately diverse mix of bush and woodland birds, with parrots, small insectivores such as thornbills and migrants such as cuckoos well represented. Species richness and bird numbers would be higher if the reserve was located along a creekline or gully (cf. Palmer and Bennett 2006).

Declining bird species that require large, well connected extant vegetation such as Brown Treecreepers and Hooded Robins were not recorded, although these species may be present in the Pyrete ranges and Lerderderg State Park to the west of Mount Gisborne.

Native Mammals

During the incidental bird surveys mentioned above, the ground was scanned for scats, feeding traces, scratches and other signs that may indicate the presence of mammalian fauna.

The most obvious mammal species using the Mount Gisborne reserve is the Eastern Grey Kangaroo (see front cover photo). Approximately 10-20 individuals were observed near the summit facing west, and in adjacent private land approximately 50-60 individuals were observed near dusk. Scat and resting areas occur at various places on the summit of Mount Gisborne. Healthy adult males, females and pouch young were observed.

Stag watching and spotlighting surveys recorded good numbers of both the Common Brushtail Possum with back young, and Common Ringtail Possum.

One sighting of a Koala in the reserve by local bushwalkers was noted during preparation of this plan.

Frogs

Three species of frogs were heard during diurnal surveys and spotlighting surveys: these species include Common Eastern Froglet, Southern Brown Tree Frog and Spotted Grass Frog.

Reptiles

No reptiles were recorded in diurnal or spotlighting surveys, however a Blue-tongue lizard and an unidentified Skink were incidentally noted.

Pest animals

The only introduced avian species recorded was a Common Myna, recorded calling in a nearby garden at the base of the reserve. Management recommendations for this species are provided in Section 4.2.4 - Pest Animal Management.

Four large Domestic Goats were observed grazing within the reserve on two occasions. These domestic animals live in the paddock on the eastern boundary of the reserve and are able to pass through the fence between private land and the reserve. Goat scats and well-worn trails were observed leading to favoured grazing areas on the summit and western side of the reserve. Management recommendations in relation to the goats are provided in Section 4.2.1 – Domestic animal grazing

European Rabbits were observed during diurnal surveys on the north-eastern slopes of the reserve (Zones 2 and 3, see Figure 2). One Brown Hare was observed near the summit (Zone 1, see Figure 2). A Red Fox was observed emerging from a patch of bracken and grasses within the southern section of the reserve.

It should be noted that a Pest Animal Strategy is being developed by the Macedon Ranges Shire Council and is due for completion in 2014. Actions targeting pest animal management at the reserve will need to be conducted in accordance with this Strategy's aims and objectives.

3.2.3 Fauna Habitat

Grassy Ground Cover

The reserve supports areas of grassy ground cover that provide useful ecosystem functions and dispersal opportunities for a wide range of fauna species. The tussocks provide grazing opportunities for macropods; cover and nesting resources for small mammals, birds, frogs and reptiles; clear searching-ranges for birds of prey; and food resources for seed-eating and insectivorous birds.

Rocky areas

The reserve supports a large area of rocky habitat (see Figure 2), both on the summit in the grassy ground cover areas, and also interspersed within the well-vegetated woodland areas. Expanses of exposed rock provide breeding, foraging and refuge habitat for a suite of native fauna, including reptiles, frogs and some ground-dwelling mammals. Insectivorous bird species use the rocky areas as perching sites for hawking.

Small dam

A small dam is located on the lower slope of the reserve (Figure 2). This dam has a range of aquatic vegetation such as rushes and sedges, which provide structural habitat for frogs and invertebrates such as Dragonflies (Plate 15). The dam appears to be ephemeral and was drying out at the time of survey. The dam provides a source of still water for a range of avifauna and larger mammals such as macropods and pest animals such as Rabbits and Hares. A distinct entry point for macropods into the reserve was observed at the fence line behind the dam bordering Woodland Drive (Plate 16).

Plate 15. Dam near northern boundary

Plate 16. Kangaroo pathway

Tree and Shrub Cover

Tree cover within the reserve provides high habitat values for fauna as the site has retained a number of very large old trees (Plate 17). Saplings and medium sized trees are present, with good cover particularly on the lower slopes within the north-eastern portion of the reserve.

Large old trees, both living and dead, represent significant resources for a wide range of fauna. Large old trees produce more nectar when they flower than younger trees, and have higher populations of insects within their peeling bark and dead branches. The larger boughs provide resting sites for larger arboreal mammals such as Brushtail Possums and Koalas. Most importantly, the numerous hollows within large old trees provide nesting and shelter sites for a large number of bird, mammal, frog and reptile species.

Eucalypt tree cover is complemented in the reserve by a healthy and diverse mid-layer of *Acacia* species, such as Black Wattle and Blackwood (Plate 17). These trees provide food for seed-eating parrots, as well as insectivorous birds, possums and gliders in the form of insect diversity and sap resources. Structurally, the wattles form important pathways and connectivity for arboreal mammals as they move around the reserve. The presence of a small flock of Yellow Thornbill, an *Acacia* specialist, is a good indicator of the extent of the *Acacia* resource in this small reserve.

Sweet Bursaria and Austral Bracken provide dense cover for nesting and foraging resources for small birds such as honeyeaters, thornbills and Grey Fantails.

Plate 17. Large old tree and Blackwood wattles near the summit

Coarse Woody Debris

Mount Gisborne reserve supports a near natural amount of coarse woody debris in the form of fallen trees and shrubs, dead standing stags and litter (Plate 18).

Coarse woody debris provides perching and hawking sites for insectivorous birds such as Grey Shrike-thrush, Pallid Cuckoos and Superb Fairy-wren, and structural habitat in the form of runways for small mammals such as antechinus and bush rats. The stags and fallen logs provide hollows for nesting and refuge for a wide range of fauna. Coarse woody debris is an essential component in nutrient cycling as invertebrates and fungi break down the woody debris, and these in turn provide a rich food source for the reserve's fauna.

Plate 18. Large old tree and woody debris

3.2.4 Significant Fauna Species

No rare or threatened fauna species were recorded during the three site visits conducted in late September and early October 2012. A total of 18 rare and threatened species have previously been recorded within a 10 kilometre radius of the reserve (VBA 2012). In addition, three rare and threatened butterfly species have previously been recorded within a 30-minute square grid incorporating the study site. All of these species are listed in Appendix 2.2.

Several woodland birds, frogs, reptiles and mammals previously recorded have the potential to occur at the reserve. One of these is the Diamond Firetail, which inhabits grassy groundcover in woodlands and was recorded in 2001 in the Pyrete Range. The high amount of woody debris at the reserve is ideal for Brown Treecreeper, Hooded Robin and Speckled Warbler, however these species may be locally extinct due to lack of connectivity with the

Pyrete range and other intact areas of forest and woodland. This applies to the insectivorous dasyurid species, Brush-tailed Phascogale and Common Dunnart.

There is potential habitat for threatened reptiles such as Bearded Dragon and frogs such as Southern Toadlet. Targeted surveys for these species are recommended.

3.3 Geology

Mount Gisborne is a complex volcano whose lava flows contributed to the build-up of the Western District volcanic plains (Silver and Birch 1994). Rising 100 metres from its base, Mount Gisborne is the highest of the distinctive group of volcanic hills in the Gisborne-Sunbury region. It forms a broad, bulky lava dome with two vents and a parasitic lava cone to the north-east (DPI 2012). In terms of its significance, Mount Gisborne has a longer and more complex lava eruption sequence than any other Newer Volcanics eruption points. Three lava types are recognised at the eruption point and none of these occur together at any other eruption point in Victoria. The reserve is an important site for petrological studies of eruption sequences (DPI 2012).

3.4 Recreation

Recreational opportunities within the reserve include short bushwalks, bird watching and nature photography. No recreational amenities are located at the reserve. A single informal vehicle track takes visitors from the Woodland Drive entrance up to the summit of Mount Gisborne (Plate 19, see Figure 2). Sections of this track are relatively steep which may deter some visitors, however the rewards for those who make the climb are significant with spectacular views to Melbourne, the Pyrete Range and Lerderderg State Park and the Macedon Ranges.

Plate 19. Informal access track

No evidence of mountain biking, trail or horse riding activities was seen within the reserve. A small number of recreational walkers were seen during site visits, and from discussions these visitors were local residents from neighbouring areas.

3.5 Other Uses

Macedon Ranges Shire Council has leased two parts of the reserve to telecommunications service providers in recent years, including Silver Comm Pty. Ltd., Optus, Telstra and Vodafone Network Pty. Ltd. (Macedon Ranges Shire Council 2004). The individual licences allow telecommunications towers and associated sheds in three locations (see Figure 2) which are shared by the service providers.

The northern telecommunications tower is located on the northern boundary at the base of the cone and is accessed by a purpose built gravel driveway and locked gate from Woodland Drive (Plate 19). The driveway and tower infrastructure is fenced on all sides. The perimeter of the tower has been scalped of vegetation (Plate 19). Tower infrastructure on the southern boundary is located near the Mount Gisborne summit and consists of two smaller towers (Plate 21a). Two small buildings form part of the tower's infrastructure which are located nearby on adjacent land (Plate 21b). An informal path connects the towers to these buildings.

Plate 20. Northern telecommunications tower with perimeter area scalped of vegetation

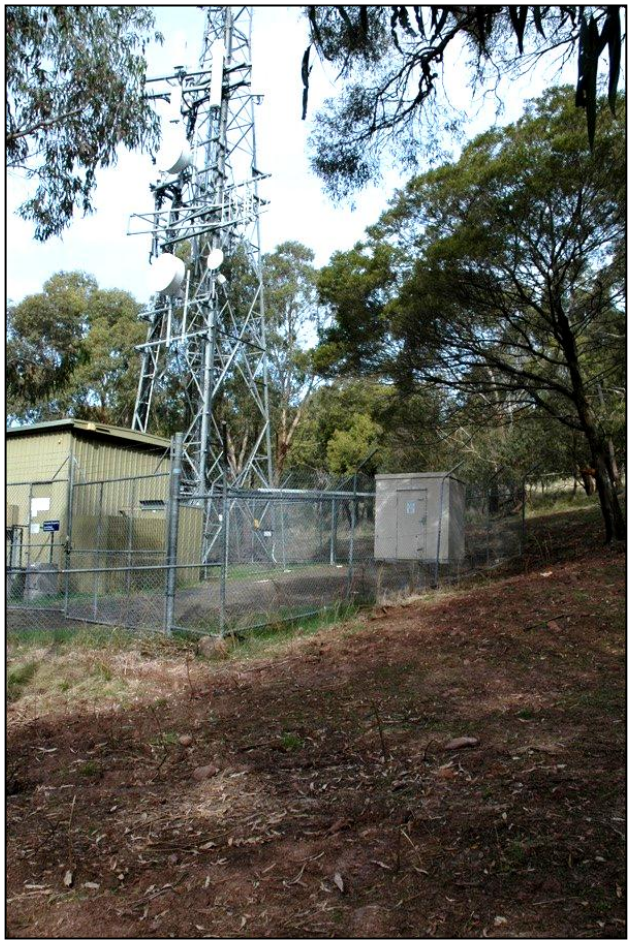
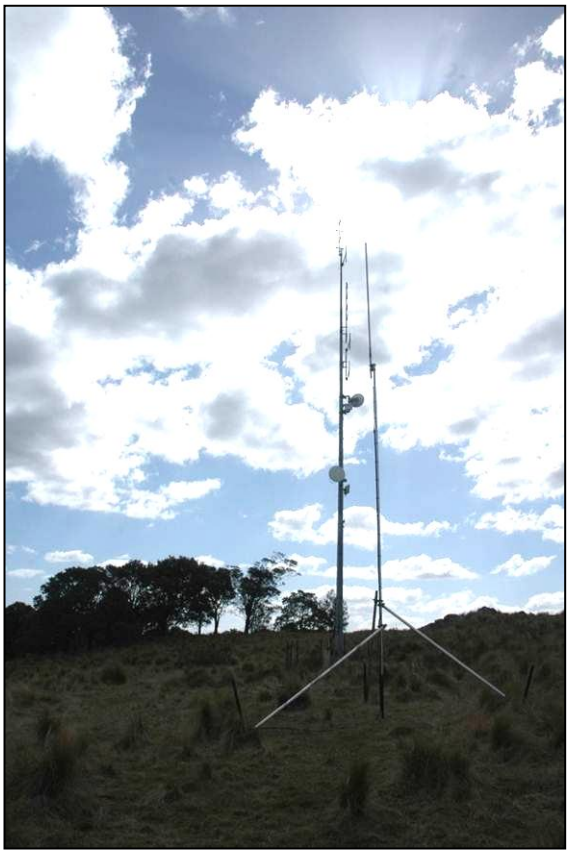


Plate 21. a) telecommunications towers near summit, **b)** infrastructure on adjacent land



4 MANAGEMENT ISSUES, THREATS AND ACTIONS

4.1 Management Objectives

The key management objectives for the reserve are to:

- Maintain and secure the existing conservation values and biodiversity.
- Restore and enhance native vegetation communities and improve their resilience in the face of potential impacts.
- To mitigate and, where possible, eliminate identified threats to conservation values.
- Ensure any adjacent development or use does not compromise the environmental values of the reserve.
- Increase community awareness of the ecological and geological significance of Mount Gisborne Reserve.
- Promote the opportunities for low impact, passive recreation within the reserve.
- Conduct and facilitate appropriate monitoring and continued assessment of the site.
- To monitor, identify and manage new threats that may arise.
- To protect in perpetuity the biodiversity values present.

4.2 Biodiversity Management

4.2.1 Domestic animal grazing

Objective: *To protect and improve native vegetation cover and diversity through the exclusion of domestic animals.*

Licences permitting periodic grazing in the reserve were issued to adjoining landowners in 2003 (Macedon Ranges Shire Council 2004) however grazing has not formally occurred within the reserve for a number of years (P. Gray, *pers.comm.*). Grazing stock from adjoining properties are, however, entering into the reserve at various points and grazing throughout the property. Goats were observed on two occasions (Plate 22), and other evidence includes goat scats, wool on plants and wire fencing (Plate 23a), gaps in boundary fencing and worn pathways leading from the boundary into the reserve. One entry point in particular (see Figure 3) appears to be used regularly (Plate 23b). Site visits to the reserve by the Riddells Creek Landcare in April 2013 recorded goats grazing near the summit, and exiting via the property to the east of the reserve (R. Best, *pers.comm.*). The area adjoining this access point supports the lowest quality vegetation in the reserve and does not support remnants of a Scoria Cone Woodland community (see Figure 2). Other potential stock access points were

observed within fencing elsewhere in the reserve. Stock appear to be wandering in from at least two adjoining properties however it could be up to four properties.

Plate 22. Four goats at the summit of Mount Gisborne

Plate 23. a) Left- Wool on plants, **b)** Right- main goat access point

Stock, particularly goats, selectively graze native plants right down to ground level, disrupting the community's plant composition and ability to reproduce. Weeds are introduced through contaminated wool, hooves and faeces and the increased nutrient input from scats changes soil composition which in turn becomes more favourable to weeds. Hard-hooved animals compact soil and suppress native vegetation in the ground layer.

It was noted during diurnal surveys that while eucalypt regrowth was extensive, many Blackwood and Silver wattle saplings were subject to intense browsing by the goats (Plate 24).

The goats were observed disturbing the Eastern Grey Kangaroos by browsing and grazing directly through their secluded daytime resting areas.

Plate 24. Browsing damage on Black Wattle

Actions:

- Grazing animals need to be excluded from the reserve as a priority:
    - *Liaise with adjoining landowners about stock access issues and fixing boundary fencing*.
    - *Identify best solution to fencing issue based on resources available.* Solutions will include fixing problem fencing areas, modifying the entire boundary fence or portions of it, or erecting new fencing.
    - *Modify and/or erect new fencing to adequately exclude grazing animals from the reserve.* Fencing as a minimum should include a sturdy 5-strand wire fence with the two top strands further apart to reduce injury to jumping kangaroos and wallabies. The top strand should ideally be more visible to wildlife, i.e. use white poly-piping or bright flags and tags for greater visibility. Avoid using

barbed wire or electric fences as these can cause harm to native wildlife. Fence must be high enough and low enough to successfully exclude all grazing animals on adjoining properties.

4.2.2 Invasive Plants

Objective: *To reduce invasive species cover over time through integrated management techniques.*

Invasive plants (introduced plants and weeds) can be categorised into four broad groups within the reserve:

- **Noxious and high-threat weeds** – these plants are listed as declared noxious weeds within the Port Phillip and Westernport catchment or Weeds of National Significance (see Appendix 1.1) and pose a serious threat to the values of the reserve. Noxious and high-threat weeds include the woody shrubs Blackberry, Sweet Briar, Montpellier Broom and Hawthorn *Crataegus monogyna*, the herbs Horehound, St. John's Wort and Artichoke Thistle *Cynara cardunculus* subsp. *flavescens* and the climber English Ivy *Hedera helix* (Plate 25). Another emerging noxious weed, Ragwort *Jacobaea vulgaris*, has recently been recorded scattered within parts of the reserve. These species generally occupy small, discrete or isolated areas in the reserve (see Figure 3) and currently have the potential to be eradicated through targeted and on-going management.

Plate 25. English Ivy

- **Naturalised environmental weeds** – these plants include agricultural weeds that are well-established within the reserve and will be impossible to eradicate, however cover can be reduced through on-going management with a long-term approach. Naturalised agricultural weeds cover the ground layer within most parts of the reserve and include Brown Top-bent, Flatweed and Sweet Vernal-grass. Previous and current on-site grazing has likely exacerbated the spread of these weeds.

- **Garden escapes** – plants that have escaped from surrounding gardens and properties and occupy a small manageable area. Eradication is feasible through appropriate management and liaison with surrounding landholders. Escaped plants include two ornamental garden

species (see Plate 32), Prunus *Prunus* spp. and Radiata Pine *Pinus radiata* (see Figure 3).

- **Weeds brought in via footwear, equipment and vehicles** – areas regularly accessed by telecommunications staff support a concentration of weeds which were not observed elsewhere in the reserve. The telecommunications mast at the summit, for example, has a well-worn track surrounding it with a variety of weeds such as Spear Thistle *Cirsium vulgare* and Variegated Thistle *Silybum marianum* (Plate 26). A lower cover of weed species is also evident along the vehicle track leading to the summit. Weed seed and material has likely been brought in via footwear, equipment, machinery and vehicles.

Plate 26. Well-used areas surrounding the telecommunications mast near the summit

Management focused on these three broad weed groups should aim to reduce or eliminate their presence within the reserve. Weed control, together with other measures outlined in this plan, will help to increase native species cover, improve the overall ecological value and resilience of the reserve, strengthen corridors and provide improved habitat for native fauna species. These outcomes can only be achieved through an on-going and long-term commitment by the land manager to reduce weed cover.

An integrated, planned and well-timed weed control response is required to successfully eradicate or control targeted weed species. Varying weed control methods need to be utilised dependent on the ecology and morphology of the target species, the environment surrounding the target species and its current spread within the reserve. An integrated weed management approach includes methods such as:

- Manual weed control;
- Foliar spray with herbicide;

- Cut and paint or scrape and paint;
- Drill and fill;
- Slashing; and
- Fire.

Recommended weed control strategies, priorities and timing for target species are provided in Table 1 below. The locations of key weed species are indicated within Figure 3. It should be noted that actions targeting weeds within the reserve need to be implemented in accordance with the aims and objectives of the Macedon Ranges Shire Council's *Weed Management Strategy* (Macedon Ranges Shire Council 2009).

A Timeline and Checklist for Management Actions table (Appendix 5) provides a chronological seasonal guide to the actions listed below.

Actions:

- *Liaise with telecommunications staff to ensure appropriate vehicle and equipment hygiene is practised at all times.* Telecommunications staff must ensure their equipment and vehicles are cleaned of soil and debris before entering the reserve. Vehicles should be washed down at staff depot wash-down points prior to entering this reserve. Machinery, equipment and footwear must also be cleaned and preferably disinfected with bleach prior to entering the reserve. An equipment hygiene procedure should be discussed with telecommunications staff and funding should be sourced to treat weeds they have introduced.

- *Target small and isolated populations of noxious and high-threat weeds.* Four weed species were observed within 1-5 small discrete locations: Hawthorn, St. John's Wort, Artichoke Thistle and English Ivy (see Figure 3). Ragwort is sparsely scattered in the reserve and should be monitored and controlled immediately if observed. All of these species have the potential to spread rapidly given the right conditions. Parent populations of these species could not be identified although it is likely that seed or material has previously been brought in with vehicles and equipment or blown in from surrounding properties. Their current cover is minimal and eradication is feasible if targeted immediately. These four species are to be targeted as a priority.

- *Target larger populations of noxious and high-threat weeds as well as garden escapes.* Weed control should focus on populations at the top of the volcanic cone and slowly move downslope to the base of the cone. Blackberry and Horehound occupy larger areas at the top of the cone and throughout the reserve, whilst garden escapes and Prunus are located near the top of the cone (see Figure 3). These populations and species should be targeted as a priority followed by Radiata Pine and Montpellier Broom near the base of the cone. Sweet Briar is scattered throughout the reserve (minimal number of individuals). A large patch of Blackberry

on the western boundary (see Figure 3) is emanating from a neighbouring property. Liaison with this landholder is advised.

- *Naturalised environmental weeds to be targeted within trial patch burning*. Mosaic burning can be an effective method for controlling widespread pastoral weeds within grassland and woodland environments, whilst creating space for absent herbs and orchids to regenerate. The reserve does not have a history of ecological burning since European settlement therefore trial patch burns are advised at this stage to assess the impacts of burning. Burning during the cooler autumn period followed by spot spraying within 4-6 weeks post-burn can be an effective tool for reducing the cover of problem weeds such as Brown Top-bent and Flatweed. See Section 4.2.3 for more information in relation to ecological burning within the reserve.

General recommendations:

- Ensure weed control works are undertaken by qualified and experienced contractors with appropriate licenses and permits. They must be aware of the objectives of this management plan and should be sensitive to the reserve's ecological values. They must possess sound flora identification skills to limit the chance of off-target spot spraying or disturbance to native vegetation.

- Any use of herbicide must take into account the proximity of native vegetation and protective measures must be incorporated accordingly. Ensure the right type of herbicide is used for the conditions and vegetation to be targeted, avoiding off-target damage. Herbicide run-off should not be allowed to enter into any drainage lines or the dam.

- Large stands of weeds (such as Blackberry) should be left after being sprayed and allowed to gradually break down and/or be removed the following 1-2 seasons. Shrubs within the reserve, both native and exotic, provide habitat for a range of small bird species. Retention of large stands of sprayed shrubs will reduce further soil disturbance and subsequent weed invasion.

- Ensure weed control works are undertaken at the appropriate time of year in accordance with the life cycle of plants to be targeted, i.e. weed control works to be undertaken whilst plants are actively growing but before they set seed. Weed control works undertaken at inappropriate times of the year result in poor outcomes and an unnecessary excess of chemical residue entering the environment.

Table 1. Key weeds for control within reserve

Botanical Name	Common Name	Location	Timing	Control Method*	Comments
TREES & SHRUBS					
Pinus radiata	Radiata Pine	Isolated mature plants in northern section. Figure 3	Any time	HP, CP, DF	Small seedlings can be hand-pulled with larger plants cut and painted or drilled and filled with herbicide at base of trunk. Parent populations outside of reserve near eastern boundary
Rosa rubiginosa	Sweet Briar	Scattered isolated plants. Larger patch at summit. Figure 3	Any time	CP, SS	Cut and paint mature plants. Spot spray young seedlings
Prunus spp.	Prunus	One individual observed in southern section. Figure 3	Any time	CP	Seed likely brought in from surrounding properties where Prunus (fruit trees) have been planted
Rubus fruticosus	Blackberry	Scattered in patches throughout reserve. Figure 3	Sep-Dec	CP, FS	Cut and paint or scrape and paint isolated plants to prevent off-target damage. Otherwise spray in spring when actively growing. Leave dead canes
Genista monspessulana	Montpellier Broom	Northern edge of reserve. Figure 3	Any time	HP, CP	Smaller plants easily hand pulled
Crataegus monogyna	Hawthorn	One mature plant in northern section. Figure 3	Any time	CP, HP	Any emerging seedlings can easily be hand pulled
-	Spreading ornamental garden escape	Garden escape along southern boundary. Figure 3	Any time	CP	Mature shrubs from neighbouring property are regenerating into the reserve. Weed control and liaison with landholder required
-	Ornamental garden escape	One isolated individual observed. Figure 3	Any time	CP	Plant seed likely brought in from surrounding properties
HERBS & CLIMBERS					
Marrubium vulgare	Horehound	Scattered in patches throughout reserve. Figure 3	Spring and autumn	SS, CH, BN	Integrated weed control techniques required as plants occur within areas of native vegetation. May be difficult to control
Hypericum perforatum subsp. *veronense*	St. John's Wort	One small patch observed. Figure 3	Spring-summer	CH, HP, SS	Hand pull or chip out small seedlings ensuring all root fragments removed. Spray mature plants
Cynara cardunculus	Artichoke Thistle	One small patch observed. Figure 3	Early spring	CH, SS	Spray rosettes before flowering stems lengthen
Hedera helix	English Ivy	One patch observed. Figure 3	Spring	HP, CH, CP	Sever vines in trees and leave to dry out or scrape stems and paint. Hand pull and dig out plants
Jacobaea vulgaris	Ragwort	Sparsely scattered	Spring-summer	HP, SS	Spray rosettes, pull out larger plants
Hypochaeris radicata	Flatweed/Cat's Ear	Common throughout	Winter-spring	BN, SS	Spot sprayed at rosette stage. Easier to target after a burn
Plantago lanceolata	Ribwort	Common throughout	Winter-spring	BN, SS	Spot spray in winter-spring. Easier to target after a burn

Botanical Name	Common Name	Location	Timing	Control Method*	Comments
Arctotheca calendula	Cape Weed	Discrete patches across the site	Winter-spring	BN, SS	Spot spray in winter-spring. Easier to target after a burn
GRASSES					
Anthoxanthum odoratum	Sweet Vernal-grass	Common throughout	Winter-spring	SL, SS, BN, HP	Slash where required before seed set. Otherwise spot spray or hand pull amongst native vegetation. Follow-up treatment required 4-6 weeks after a burn
Agrostis capillaris	Brown Top-bent	Common throughout	Winter-spring	SL, SS, BN	Slash where required before seed set. Otherwise spot spray amongst native vegetation. Follow-up treatment required 4-6 weeks after a burn
Dactylis glomerata	Cocksfoot	Scattered	Winter-spring	SL, SS, BN	Slash where required before seed set. Otherwise spot spray amongst native vegetation. Follow-up treatment required 4-6 weeks after a burn

* CH = Chip out with a mattock; HP = Hand Pull; CP = Cut and Paint with herbicide; FS = Foliar spray; SS = Spot spray with herbicide; SL = Slash or Brushcut; DF = Drill and fill; BN = Burn

4.2.3 Fire Management

***Objective**: Improve the diversity of native plants and reduce pest plant invasion within the reserve through a mosaic burning approach.*

***Objective**: Reduce the potential and perceived fire risk to nearby residences.*

Native woodlands and grasslands in south-east Australia have adapted to certain fire regimes and require periodic burning to shape their composition and structure. Fire within these adapted vegetation communities help to maintain the health and growth of specific species and vegetation communities as a whole. Vegetation communities that require fire may suffer through inappropriate fire regimes or no fire regime at all. An absence of fire can result in a susceptibility of certain ecological processes that can lead to species loss, structural changes, reduced or simplified cover, loss of fauna habitat and weed invasions (Lunt 1991).

There are no recent records of fire activity within the reserve. It is uncertain if the reserve was subject to a regular fire regime prior to European settlement, as the steep topography may have limited fire use. Fire, nevertheless, can be a useful tool for controlling introduced species and for improving species diversity. Grassland areas within the reserve are dominated by *Poa* tussocks that are interspersed with pastoral species such as Sweet Vernal-grass and Brown Top-bent. Weeds such as Sweet Vernal-grass alter the chemical composition of the soil, inhibiting the growth of native species. A mosaic burn within these grassland areas can be used to remove the biomass of both native grasses and introduced pastoral species.

Ground layer diversity across the reserve is limited. An appropriately timed ecological burn might assist in measures to improve species diversity by stimulating the germination of

stored seed and creating inter-tussock spaces that encourage recruitment. Follow up weed control measures within the burnt patches will be necessary to ensure invasive species do not proliferate within these areas.

Actions:

- *Undertake a trial burn within a small open grassland patch.* A trial patch burn can be undertaken within the open grassland area near the top of the cone (see Figure 3). An area approximately 10 x 10 metres in area can be burnt as a starting point to assess impacts to vegetation, the rate and diversity of weed regeneration, reduction in biomass and regeneration of native species. The trial area to be burnt must be assessed prior to the burn with the following recorded: native species and their % cover, introduced species and their % cover, bare earth % cover and other general observations. The impacts of the burn must be assessed and monitored over the autumn to spring period prior to any formal burning regime being implemented.

General recommendations:

- Schedule burns, where possible, during the autumn period to reduce fire intensity and impact on flowering species and active wildlife. Ensure soils at the reserve are dry enough prior to the burn to avoid compaction through vehicle movement.

- Burns are to be undertaken in partnership with the Gisborne CFA, the Macedon Ranges Shire Council and the Department of Environment and Primary Industries (DEPI).

- The precise timing of burns will be determined by the local CFA. Climatic factors such as temperature, humidity and wind direction and speed will be taken into account, especially given the reserve's location above the township of Gisborne. Nearby residences should be notified of the burn to take place and traffic along Woodland Drive may need to be alerted to possible heavy smoke in the area.

- Minimise vehicle disturbance within the reserve. Vehicles should not be driven on wet ground and tankers should not be taken onto the site except in an emergency. Discussions with landholders should take place to assess the option of placing tankers on neighbouring properties, which would assist in reducing the threat of bushfire to adjoining properties.

- Fire breaks should be at least three metres in width and are not to be ploughed or graded but rather cut by a brushcutter or slasher. Fire breaks should be moved slightly each year to avoid repeated slashing in the one location.

- Fire breaks should be wetted down prior to lighting. No chemicals or fire retardants are to be used at any stage within the fire break.

- Scan burnt areas immediately after a burn for any injured wildlife. If burnt or injured wildlife are observed, they should be carefully and safely transported to the nearest veterinary clinic for treatment. If this is not possible, Wildlife Victoria should be contacted immediately. The Department of Environment and Primary Industries (DEPI) should be contacted in the event of wildlife injury or death occurring due to a prescribed burn.

- Ensure follow up weed control is undertaken in burnt areas within 4-6 weeks post-burn. Fire breaks will require follow-up treatments. Fire is likely to trigger germination of both native and non-native species. Non-native species (i.e. weeds) should be identified by an experienced and qualified weed control contractor with excellent flora identification skills, and spot sprayed whilst at the seedling stage.

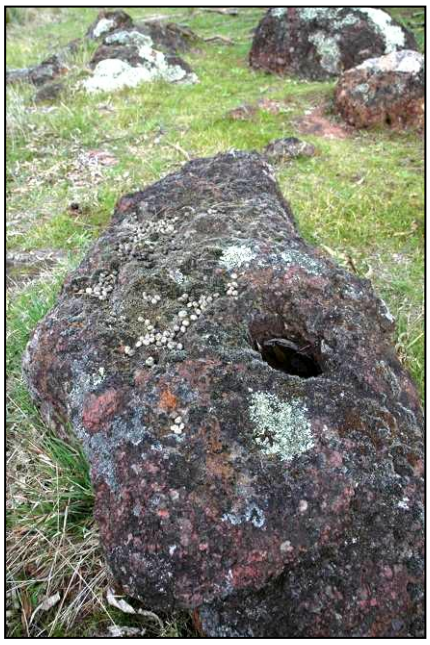
- Records must be kept indicating the zone burnt, the date and any issues encountered during the burn.

4.2.4 Pest Animal Management

Objective: *Reduce the number of invasive pest animals within the reserve and adjoining properties through an integrated habitat removal program.*

Two individual European Rabbits were sighted at the reserve on separate occasions bordering private property. Rabbit scats were scattered across the reserve (Plate 27).

Plate 27. Rabbit scats on a rock



A Red Fox was observed emerging from a patch of bracken and grasses within the southern section of the reserve.

Blackberry throughout the reserve and within adjoining properties (see Figure 3) provides suitable habitat for rabbits and foxes. Pest animal management on-site should focus on removing rabbit and fox harbour both within and surrounding the reserve. The gradual replacement of this vegetation with indigenous species will create a less favourable environment for rabbits and foxes, whilst providing improved habitat and linkages for native species.

Rabbits have the potential to cause serious environmental damage through the suppression of indigenous plant regeneration, competition with native wildlife for food resources, and by providing a ready food source for foxes. Foxes prey upon many smaller native animals and have been identified as a known or perceived threat to 34 indigenous fauna species in threat abatement plans provided under the EPBC Act. The European Rabbit, and Red Fox, are a declared Established Pest Animals under

the *Catchment and Land Protection Act 1994* (CaLP Act). Under this Act, landowners must take all reasonable steps to control established pest animals on their property. Competition and land degradation by rabbits and predation by foxes are also listed as Key Threatening Processes under both the FFG Act and EPBC Act.

Actions:

- *An integrated pest animal management approach incorporating a number of measures, including warren and harbour destruction, warren fumigation, poisoning (e.g. 1080), soft jaw traps, cage traps and shooting should be investigated and implemented.* Optimum control is best achieved by integrating more than one control method. The location of the reserve at the edge of the township and the potential for adverse impacts upon other values and uses of the reserve preclude some of these measures. Soil disturbance by warren destruction, for example, may lead to increased weed cover; poisoning may affect non-target species (e.g. pet dogs); whilst shooting is not advised near residential areas. Trapping using soft jaw traps does not have a detrimental impact on non-target species if monitored appropriately. Management actions should therefore concentrate on the destruction of pest animal harbour as a priority, although warren fumigation should be considered as it does not impact off-target species. Subsequent monitoring of pest animal presence after the removal of harbour may warrant the addition of other management measures.

- *Implement weed control program as outlined in Section 4.2.2 of this management plan.* Works to target present and potential pest animal harbour to be implemented as per this management plan. This will reduce the cover of pest animal harbour and therefore the presence of pest animals within the wider area. Neighbouring landholders should be notified of these works and encouraged to undertake similar works on their own properties (see Section 4.6 – Adjoining Uses).

4.2.5 Management of the introduced Common Myna

Objective: *To protect the hollow-using fauna such as possums, parrots and kookaburras from possible competition for tree hollows by the introduced Common Myna.*

The Common Myna has been listed by the World Conservation Union (IUCN) as one of the world's 100 most invasive species. The Common Myna is related to starlings, and in their native habitat of India and South-east Asia, monogamous pairs compete fiercely for nest sites using strategies such as nest destruction, having several nest sites and laying in only one, and eviction of laying birds. Unfortunately, in Australia, this natural aggressive behaviour is applied to native fauna such as possums, parrots and kookaburras, with the native fauna being displaced or evicted. Australian hollow-using fauna are already under pressure from loss of nest sites due to habitat destruction and occupation by feral bees.

The Common Myna used to be one of four most common birds in Canberra, and thanks to a successful eradication campaign by the Canberra Indian Myna Action Group, some 40,000 birds have been destroyed and the Myna is now rarely seen around Canberra (G. Cerini, *pers.comm*., 2012). Myna eradication programs are currently being investigated by the Macedon Ranges Shire Council (P. Gray, *pers.comm*.).

Actions:

- *Monitor the increase in the Myna population* by uploading records to MynaScan, noting when and if the Mynas leave the surrounding gardens and start using the reserve itself for nesting and foraging: http://www.feralscan.org.au/mynascan
- *Council to continue their investigation of Myna eradication programs and to liaise with the local Birdlife Branch and nearby landholders to determine opportunities and resources available to commence eradication programs of the local Common Myna population.* A specific trap for Mynas has been designed by the Canberra Ornithologists Group and is now being used in areas around Melbourne. Further opportunities may exist in engaging the local Men's Shed group in constructing the Myna traps.

4.2.6 Native Fauna Management

Objective: *To retain habitat for the local macropod population whilst not compromising the values of the reserve.*

Macropod density at the reserve is moderate to high, depending on the use of the reserve by the surrounding macropod population. Eastern Grey Kangaroos use hillsides such as Mount Gisborne as resting areas that afford excellent views of approaching predators. Hillsides are used on hot days to catch cooling breezes. It is expected that the Mount Gisborne reserve is used by the surrounding Eastern Grey Kangaroo population at least some of the time, with movements in and out of the area to graze in the surrounding farmlands, especially to the west.

The most severe grazing threat is posed by domestic stock (i.e. goats), European Hares and European Rabbits which are grazers and browsers and have compromised the ecological values of the grassy areas to date. Grass specialists such as Eastern Grey Kangaroos do not pose a significant grazing threat to the ecological values of the reserve.

The slopes of Mount Gisborne and tree cover on the lower areas provide ideal native habitat and safe harbour for the macropod population within an otherwise open farming environment. This sanctuary is likely to be ever more important as the resident population of Gisborne grows.

Actions:

- *Future land planning should ensure that Mount Gisborne does not become an island surrounded by housing developments*. Low connectivity with the intact forests and woodlands to the west may have already contributed to local extinctions of woodland bird species such as Brown Treecreeper. Further housing developments would continue and indeed hasten this process and begin to include more common species such as Koala, and small birds such as Buff-rumped Thornbill. Eastern Grey Kangaroos are likely to continue to use the reserve even if surrounded by housing, and will be subject to increased traffic, and risks of fence entanglement and dog attack.

General recommendations:

- Given the connectivity of the reserve with surrounding open land, particularly to the west and north, it is unlikely that macropod density will reach deleterious levels on site. Active control measures are therefore not advised at this stage.

4.2.7 Retention of Coarse Woody Debris

Objective: *To retain habitat for the local fauna population through the retention of coarse woody debris*

Mount Gisborne reserve is a peaceful, near-natural example of an endangered plant community, with breathtaking 360 degree views and opportunities for locals to enjoy native flora, woodland birds and mammals. The reserve may be adopted by a Friends group or other landholder group, which would no doubt assist in achieving some of the objectives of this plan. There is a small risk that "cleaning up" for aesthetic or fire prevention reasons may be proposed or carried out.

Actions:

- *Retain all coarse woody debris in the reserve as a high management priority*.
- *Land managers to liaise with surrounding landholders to promote the values of coarse woody debris and its low fire risk.*

4.2.8 Habitat Connectivity

Objective: *Investigate opportunities to improve habitat connectivity between the reserve and the Pyrete Range.*

Mount Gisborne Reserve is located on the edge of the Plains Grassy Woodland that once covered Gisborne and surrounds and the Heathy Dry Forest and Grassy Forest of the Pyrete

Range and Lerderderg State Park. This mosaic landscape supported many different fauna species that bred, foraged and dispersed throughout their territories and beyond. Whilst the Pyrete Ranges and Lerderderg State Park are in relatively good condition and have been afforded some degree of protection, the Plains Grassy Woodland has been largely cleared for grazing, cropping and urbanisation. This clearing has resulted in isolated patches of native vegetation that remain in an otherwise cleared landscape around the Gisborne township and Sunbury.

Native fauna species are less able to move across this ever changing landscape and are more vulnerable to local extinction. Local incidents of fire or disease can devastate populations that exist in remnant patches of vegetation, with species less able to recolonise the area as they once had. With increasing urbanisation and smaller lot developments encroaching upon Mount Gisborne from the Gisborne township, there is perhaps an increased need for connectivity approaches with the Pyrete and Lerderderg State Park to the west.

Improving habitat connectivity with the Pyrete and Lerderderg will link areas of remnant vegetation within an otherwise modified landscape. It will allow for the movement of wildlife between remnant patches of native vegetation and provide useful fauna habitat, effectively reversing habitat fragmentation in the local area. Mammals, birds, reptiles, amphibians and invertebrates that would otherwise be isolated in one patch can utilise such connections to travel between patches with relative ease and safety. Habitat connectivity allows animals to respond to environmental variability, e.g. by enabling movement from areas of scarce resources to resource-rich areas. It allows animals to respond to population pressure, e.g. by movement from over-populated to under-populated areas, or to re-colonise areas after a population crash, preventing inbreeding and loss of genetic diversity and allowing the creation of a successful metapopulation.

An aim of Council should be to engage with local landholders to the west of the reserve to encourage the creation of habitat corridors. This would increase the resistance and resilience of local flora and fauna communities, providing a stronger habitat link between the reserve and other core areas of remnant vegetation.

Actions:

- *Determine opportunities for habitat connectivity to the west of Mount Gisborne Reserve*, towards the Pyrete Range and Lerderderg State Park (Plate 28).
- *Promote and engage local landholders to consider involvement in conservation programs such as Trust for Nature and Land for Wildlife.*
- *Identify the potential for specific habitat connectivity works that are aimed at woodland bird species in decline* such as Brown Treecreeper, Speckled Warbler and Diamond Firetail.

- *Engage landholders located to the west of the reserve and raise awareness of the importance of habitat linkages.* Any program that engages landholders with woodland birds as the target species is likely to also benefit another declining woodland/dry forest species, e.g. the Brush-tailed Phascogale. Connecting Country Castlemaine is an example of a successful non-profit organisation which aims to actively engage with landholders who have natural assets on their property. Connecting Country works across the Mount Alexander Shire and surrounds and is funded by a range of government and non-government sources such as Caring for Country and the Norman Wettenhall Foundation. They work with a wide range of land users to support and bring skills and funds to local communities for landscape improvement, dedicated to achieving specific goals in the areas of:
    - Grants for on-ground projects relating to woodland restoration. (Groups or individuals can apply. Excludes roadsides);
    - Education and engagement to improve landscape management;
    - Monitoring change from funded projects (vegetation, birds and the threatened Brush-tailed Phascogale).

Plate 28. Adjoining property looking towards the Pyrete Range

4.2.9 Further Surveys

No formal flora or fauna surveys have previously been undertaken at the reserve. Recent site visits have provided a solid introduction to the reserve's features, species composition and utilisation within the reserve. Formal species and/or targeted surveys and additional incidental records by council staff, contractors and telecommunications staff will further add to our knowledge and the aims of this management plan.

Actions:

- *Encourage local council officers, ecologists, on-ground contractors and the community to identify and document new species.* Any new species records should be recorded and provided to local council, the Flora Information System (FIS) or any other relevant database systems available at the time. Local bushwalkers and naturalists use the site for recreation and should be encouraged to submit any new species information. The recording and submission of new species will increase our current knowledge of what is present within the reserve which will in turn further inform management practices.

- *Undertake a more comprehensive flora and fauna survey of the reserve in spring to early summer.* For fauna, methodology should include a general daytime survey, stag watching, spotlighting, the use of an Anabat detector and call playback (Song meter) and may include more intensive techniques (e.g. rock rolling, tiling, pit trapping, harp trapping, hair tubing and use of remote infrared cameras). Future bird surveys using the Birdlife Australia 20 minute 2 hectare search methodology would have the added bonus of including information on habitat.

- *Undertake a targeted survey for the nationally significant Matted Flax-lily in conjunction with the comprehensive flora survey.* A targeted survey for this species should concentrate within the Zone 3 area on the lower slopes (see Figure 2). Each individual plant, or patch, should be recorded with a GPS and notes taken (i.e. evidence of flowering or fruiting material, size of patch, number of individuals, number of tillers and threats). Biennial monitoring of these populations is advised after this baseline data has been recorded. See 'Monitoring' Section 4.7.

4.2.10 Protection covenant

Objective: *To protect in perpetuity the reserve's biodiversity values.*

Actions and initiatives that aim to improve the reserve's biodiversity values will be greatly assisted by covenant measures that protect the reserve in perpetuity. A Trust for Nature conservation covenant is an agreement between the landowner and Trust for Nature which aims to permanently protect the natural values of the land. The covenants are registered on

the Certificate of Title to the land and are legally binding. Costs may be incurred to Council in establishing the covenant.

Registration of a Trust for Nature covenant over Mount Gisborne Reserve was identified as a priority action (Action 4.3) in the Macedon Ranges Council's Natural Environment Strategy 2009. Councils that neighbour the Macedon Ranges have successfully utilised protection covenants to improve biodiversity outcomes on reserves, including Hume City Council's Evans Street Grassland and Melton Shire's Pinkerton Forest.

Actions:

- *Council to seek funding to enable a Trust for Nature covenant over the reserve.*

4.3 Climate Variability

Objective: *Implement an adaptive management framework that is cognisant of the potential impacts of climate change.*

A changing climate presents a major challenge for conservation planning and for the management of natural assets. Climate change is expected to have a wide range of impacts on species and ecosystems, including changes in species distribution and abundance, ecosystem processes, interactions between species and various threats to biodiversity (DCC 2008). Whilst presenting some unique challenges, the impacts of climate change can be considered yet another stressor that adds to and interacts with existing stressors that have already impacted upon our biodiversity assets (DCC 2008). Furthermore:

'*Without early and vigorous mitigation actions, climate change has the potential by the second half of the century to become an overwhelmingly profound and pervasive driver of change in Australia's biotic fabric, resulting in many extinctions and the formation of many novel ecosystems that might not provide the essential ecosystem services on which humans depend*' (DCC 2008, p. 3).

Predictions for the north central region of Victoria, which includes the Gisborne region, are for drier and hotter conditions under climate change scenarios. By 2030 a temperature increase of 0.9^{o}C is predicted, while a temperature increase of between 1.4^{o} C and 2.8^{o} C can be expected by 2070. Less rainfall events are likely with a total net reduction of 4% annually expected, and bushfire intensity and frequency will rise (State Government of Victoria 2011). In Victoria, climate change has already impacted on flora and fauna species, with preliminary research showing that habitat ranges are presently being affected (State Government of Victoria 2011).

Despite the increasing certainty of climate change predictions, it is not possible to precisely identify the impact on the reserve from a changing climate. There are, however, a number of likely threats and impacts that may arise given the reserve's small size and lack of

connectivity with other bushland areas, which limits the ability for species migration and distribution, reduces ecosystem resistance and resilience and may intensify potential impacts such as:

- Species distribution and abundance: a reduction in the number of some indigenous flora and fauna species, while other indigenous species will disappear, be unaffected or prosper as temperatures rise and rainfall decreases;
- The appearance of new invasive flora and fauna species, while other pest species might prosper, disappear or not affected;
- An increasing vulnerability for aquatic species as rain events become less frequent but more severe; periodic inundation of the reserve to become less frequent but more severe;
- An increasing frequency and severity of fire events.

Consideration and reference to the objectives and outcomes of the Macedon Ranges Shire Council's *Climate Change Risk Assessment and Early Adaptation* project (currently in draft form) should be made in developing an adaptive management framework for the reserve.

Actions:

- *Implement an adaptive management framework that increases the resistance and resilience of the reserve to the impacts of climate change*. A robust management framework, action and monitoring plan that addresses potential impacts such as the appearance of invasive pest plants and animals, the decline of some indigenous plant and animal species and new fire regimes is required under a changing climate scenario. This management framework should recognise that natural assets are not static systems but undergo change, which is likely to accelerate under a warming climate.
- *Adopt a landscape scale approach to management of the reserve*. The small size of the reserve and its unique vegetation community for this region presents considerable challenges to increasing its resilience to potential disturbance events. A landscape scale approach that considers connectivity to adjoining bushland areas such as the Pyrete Range and Lerderderg State Park and surrounds will provide better options for species distribution and abundance.
- *Integrate conservation aims and programs between the various authorities and community groups*. Measures by the Macedon Ranges Shire Council to improve the resilience of the reserve on a landscape scale approach requires effective cooperation, communication and integration with the various authorities and community groups including the catchment management authority and Landcare.

4.4 Cultural Management

Objective: *Explore further partnership opportunities with traditional owners.*

The reserve is located within the traditional land of the Wurundjeri. Under the Victorian *Aboriginal Heritage Act2006*, Aboriginal people are recognised as the primary guardians, keepers and knowledge holders of Aboriginal Cultural Heritage. At a local level, the Wurundjeri Tribe Land and Compensation Cultural Heritage Council (WTLaCCHC) is the Registered Aboriginal Party responsible for the management of Aboriginal Cultural Heritage. The WTLaCCHC provide advice on applications for Cultural Heritage Management Plans, decisions involving Cultural Heritage Agreements and advice or application for interim or on-going Protection Declarations.

Actions:

- *Through discussion with the Wurundjeri (WTLaCCHC), explore potential partnership approaches.* Partnership opportunities between the WTLaCCHC and Macedon Ranges Shire Council range from informal 'in principal' documents such as a Memorandum of Understanding or Statement of Intent through to formal, legally binding agreements such as a Cultural Heritage Agreement.

4.5 Recreation Management

Objective*: Minimise visitor impacts to the reserve.*

Objective: *Encourage low impact, passive recreation opportunities.*

Visitor impacts to the reserve are minor. This is likely due to the small number of visitors the reserve receives. A small amount of litter was found across the reserve and there was no evidence of rubbish dumping (see Plate 29). Aside from the informal vehicle track, no other tracks have been formed by visitors.

Opportunities for low impact engagement with the reserve's ecological values should, ideally, be encouraged. Measures aimed at promoting passive recreational access need to be undertaken in a pre-cautionary and sensitive manner. The small size of the reserve, lack of connectivity with adjoining bushland environments and close proximity to residential areas and the Gisborne Township make it particularly susceptible to visitor impacts. Woodland communities are fragile and vulnerable to invasive plants which visitors can, unknowingly, accelerate through the introduction of weeds and other impacts. These concerns, issues, and the relative abundance of recreational opportunities within the Gisborne Township and the nearby Pyrete Range and Lerderderg State Park, limit the need for any further informal tracks to be created within the reserve.

Plate 29. Litter within the reserve

4.5.1 Reserve entrance and parking

Objective: *Ensure visitors are provided a walk-in access point while allowing for emergency and maintenance vehicle access.*

A single entry point into the reserve is located off a steep and winding section of Woodland Drive (Figure 2). This entrance point is non-descript and informal, with an unlocked gate welcoming visitors to the reserve (see Plates 30 & 31). Visitors are required to park on Woodland Drive or nearby locations as no car parking space is provided within the reserve.

Plate 30. Entrance gate from Woodland Drive

Plate 31. Informal signage on entrance gate from Woodland Drive

Actions:

- *Provide a walk-in entrance point on Woodland Drive.* Visitors at present must open and close a large gate at the entrance to the reserve. A walk in entrance point is recommended which will improve the ease of access for visitors.
- *Install a locked vehicle access gate.* A lockable gate will prevent unauthorised vehicle entrance into the reserve. Access into the reserve is to be restricted to Council maintenance, telecommunications staff and emergency vehicles.
- *Ensure the entrance point is weed free and maintained.* The entrance point is marked by weeds including Montpellier Broom. This entrance point should be managed as part of the reserve's weed control and maintenance duties.

4.5.2 Signage

Objective: *Raise community awareness of the reserve.*

Objective: *Consider interpretive signage to inform visitors of the reserve's ecological and geological significance.*

No signage is currently located at the reserve. As a minimum, a street front sign at the entrance to the reserve on Woodland Drive should be placed to raise awareness of the reserve. Further, Council should consider informing visitors of the reserve's ecological and geological significance through interpretive signage.

Actions:

- *Install a street front sign at the entrance on Woodland Drive.*
- *Consider placing interpretive signage at the Woodland Drive entrance*. Detailed information could be provided on scoria cone geology and resident flora and fauna. If signage is installed, use non-fade material and ensure signage areas are weed free and maintained.
- *Inappropriate activities may be highlighted on signage*. Inappropriate activities within the reserve such as vehicle access, horse riding, trail/mountain bikes, rubbish dumping, camping and seed and flower collecting should be noted at key entrance points.

4.5.3 Low Impact, Passive Tourism

Objective: *Encourage low impact, passive tourism within the reserve.*

The highly rare and localised vegetation community within the reserve greatly heightens its appeal as a destination for low impact, nature-based tourists including bushwalkers, bird watchers, photographers, naturalists and students of science, geology and education. Such interactions are aimed at informing and educating visitors on the values of this endangered vegetation community. It is hoped that this engagement will increase visitor appreciation and awareness and action that results in the protection and conservation of the reserve's fragile and diminishing environmental assets.

Promotion of the reserve and its conservation and geological values aligns with the vision of the Macedon Ranges as a destination that delivers excellence in nature-based tourism (Macedon Ranges Shire Council 2011). Nature based visitors may deliver significant economic benefits to Gisborne and the wider region.

i. Bushwalkers, Birdwatchers, Photographers, Naturalists

Objective: *Increase the awareness of the reserve as a destination for bushwalkers, bird watchers, photographers and naturalists.*

Promotion of the reserve and its geology will attract low impact visitors interested in bushwalking, photography, bird watching, geology and ecology.

Actions:

- *Promote the values of the reserve to bushwalkers and naturalists* via Council's website, Landcare email broadcast and other promotional methods to members of the Field Naturalists Club of Victoria, Indigenous Flora and Fauna Association, Birds Australia, Landcare, Nature Share etc.

- *Consider an interpretive 'walk and gawk' tour in cooperation with a local Friends of /Landcare group.*

ii. Education and Science

Objective: *Increase the awareness of the reserve as a destination for science and education.*

Promotion of the reserve's ecological and geological values will likely attract local secondary and regional tertiary institutions across a diverse field of studies that includes ecology, biology, botany, zoology and geology.

Actions:

- *Promote the values of the reserve to local and regional schools and tertiary institutions* via Council's website, Landcare email broadcast and other promotional methods.

4.6 Adjoining Uses

Objective*: Engage adjoining landholders in measures to enhance and conserve the reserve.*

Small to medium sized farms and residential homes with landscaped gardens immediately surround the reserve on Woodland Drive and Mount Gisborne Road. A number of these properties, especially on the western boundary, were observed to have retained some remnant vegetation in similar condition to the reserve.

Threats to the reserve from adjoining uses include the introduction of weeds. On the southern boundary below the peak of Mount Gisborne, an ornamental tree from a neighbouring landscaped garden is spreading into the reserve (Plate 32, see Figure 3). On the western boundary fence line, Blackberry is spreading into the reserve from a neighbouring property that is heavily infested (Plate 33, see Figure 3). The threat of seed from introduced pasture grasses in neighbouring properties is ever-present, including Sweet Vernal-grass and Brown-top Bent.

Plate 32. Ornamental tree spreading into the reserve on the southern boundary

Plate 33. Blackberry spreading into the reserve from the western boundary

As outlined in Section 4.2 Biodiversity Management, stock entering the reserve from adjoining landholders is having a detrimental effect on vegetation quality. Measures that prevent stock access are recommended. Similarly, it is recommended that landholders are informed of the impact that domestic pets, such as cats and dogs, can have on native fauna.

Actions:

- *Provide information to adjoining residents on the values of the reserve and potential impacts from adjoining uses including invasive plants and animals.* This information could be provided via the production of a 'Good Neighbour' brochure (e.g. Frankston City Council 'Good Bushland Neighbour' Guide).
- *Encourage adjoining landholders to undertake weed control measures to prevent weeds such as Blackberry and ornamental trees spreading into the reserve.*
- *Encourage adjoining landholders to retain and improve remnant vegetation patches on their properties.*
- *Encourage adjoining landholders to plant indigenous species and to control invasive plants.*
- *Ensure adjoining residents know their responsibilities regarding pet animals to prevent them from entering the reserve at all times.*
- *Encourage adjoining residents to sign up with a local Friends of/Landcare group or form one for the reserve.*
- *Encourage adjoining residents to act as champions for the reserve by reporting any illegal activities occurring within the reserve.*

4.7 Monitoring

Management actions implemented at the site and outlined within this management plan require monitoring to determine whether they are achieving their stated objectives. Monitoring should generally assess current site values, changes, issues, improvements and the appropriateness of management actions being undertaken. Monitoring should be undertaken by an experienced council officer, bushland management contractor or ecologist at biennial intervals, and should be undertaken within the same period (i.e. spring) of each monitoring year in order to provide comparative results. The following actions should be undertaken as part of the monitoring process, with results provided within a brief letter report to the Macedon Ranges Shire Council:

- *An assessment of management actions undertaken and outlined within this plan.* Objectives and actions outlined in this plan need to be formally assessed and documented. This should include whether they have/have not been undertaken on-site or are in progress, and how objectives are/are not being met. Appendix 5 summarises the plan's management actions and can be used as a check list.
- *Establishment of permanent 10m x 10m quadrats within the reserve.* Quadrats should be strategically placed within areas subject to either weed control or fire

management. The number of quadrats required will need to be tailored to the area targeted for management, however, as a guide, a minimum of three quadrats should be established in the reserve. Areas selected should ideally represent differing reserve characteristics. The corners of these quadrats should be marked discreetly in the ground (i.e. soil pins or nails with flagging tape) so that the quadrat can be identified on-site by the assessor without being visible to the wider community. Each corner is to be marked with a GPS with the coordinates provided to Council. Species cover and diversity is to be assessed within each quadrat using the Braun-Blanquet scale (or similar). The same quadrats should be assessed biennially to determine any changes, issues or improvements to the quadrat areas. The quadrats should be assessed prior to any works being undertaken in order to provide comparative results. The following needs to be assessed and recorded for each quadrat:

  - All introduced species to be recorded with their % cover;
  - All native species to be recorded with their % cover;
  - Bare earth % cover;
  - Height of tallest plant in quadrat;
  - List of native species successfully recruiting or regenerating;
  - Organic litter % cover;
  - Works undertaken (i.e. weed control or fire management).

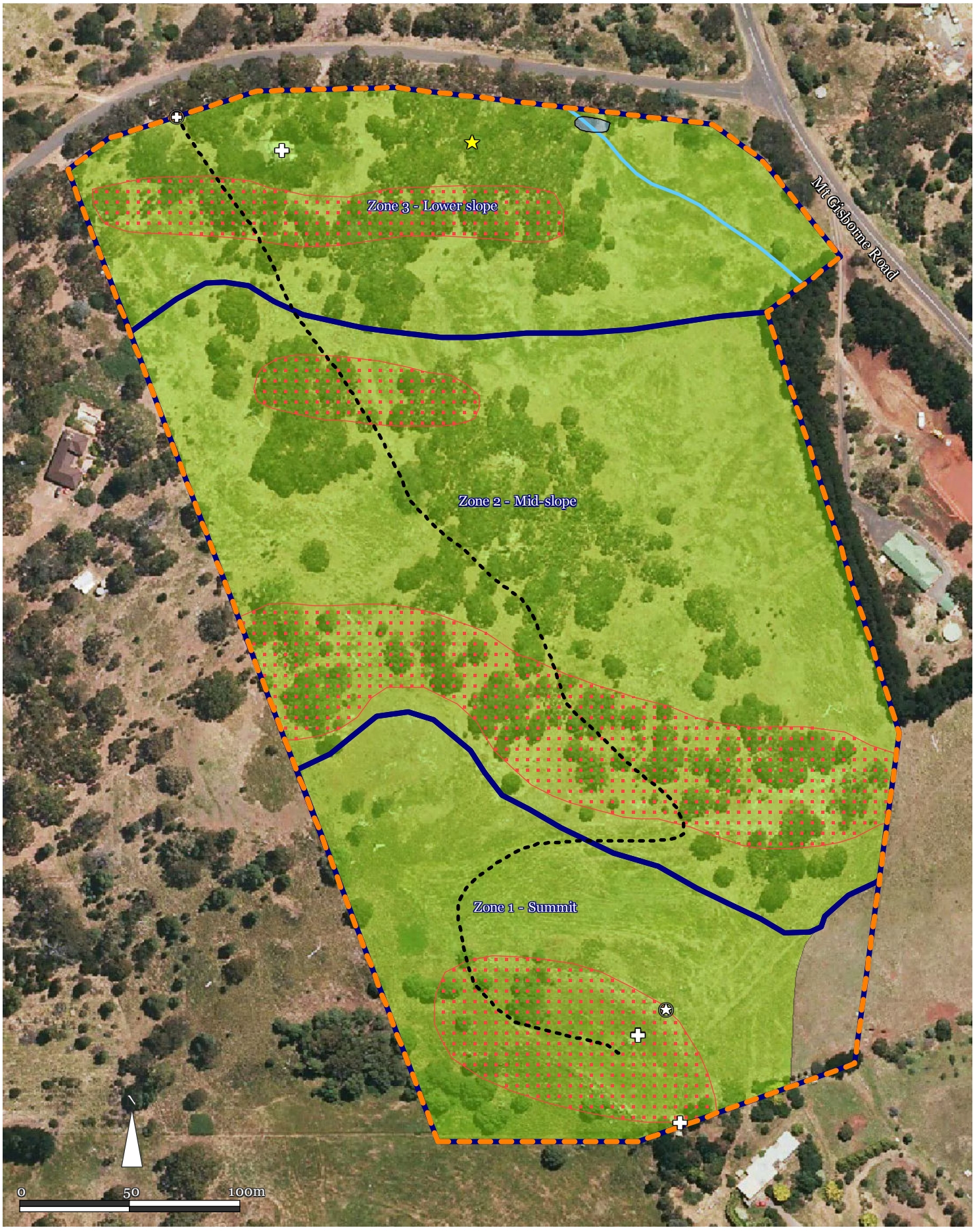
- *Establishment of one photopoint within each quadrat*. One corner of each quadrat is to form a photopoint to visually record changes that occur in the reserve. The photopoint should aim to capture the landscape and ideally incorporate trees, shrubs and weeds. The photopoint GPS coordinate and direction of photo should be documented and provided to Council.

- *Further recommendations or changes to be provided* if the desired results or objectives are not on the way to being achieved.

- *Documentation of any changes or new threats to the reserve not outlined within this management plan.* Any new threats or changes need to be incorporated into this management plan as required.

- *This management plan is an adaptable document which needs to be reviewed and modified where necessary in accordance with these monitoring results.* New priorities, issues and management requirements that become apparent may need to be factored into this plan. Monitoring methodology should be reviewed and adjusted as required.

Figure 2 - Features of Mount Gisborne Reserve



Matted Flax-lily (EPBC Act)
Summit
Telecommunications tower
Main access gate
Track
Scoria Cone Woodland
Rocky outcrop
Zone
Drainage line
Dam
Study site

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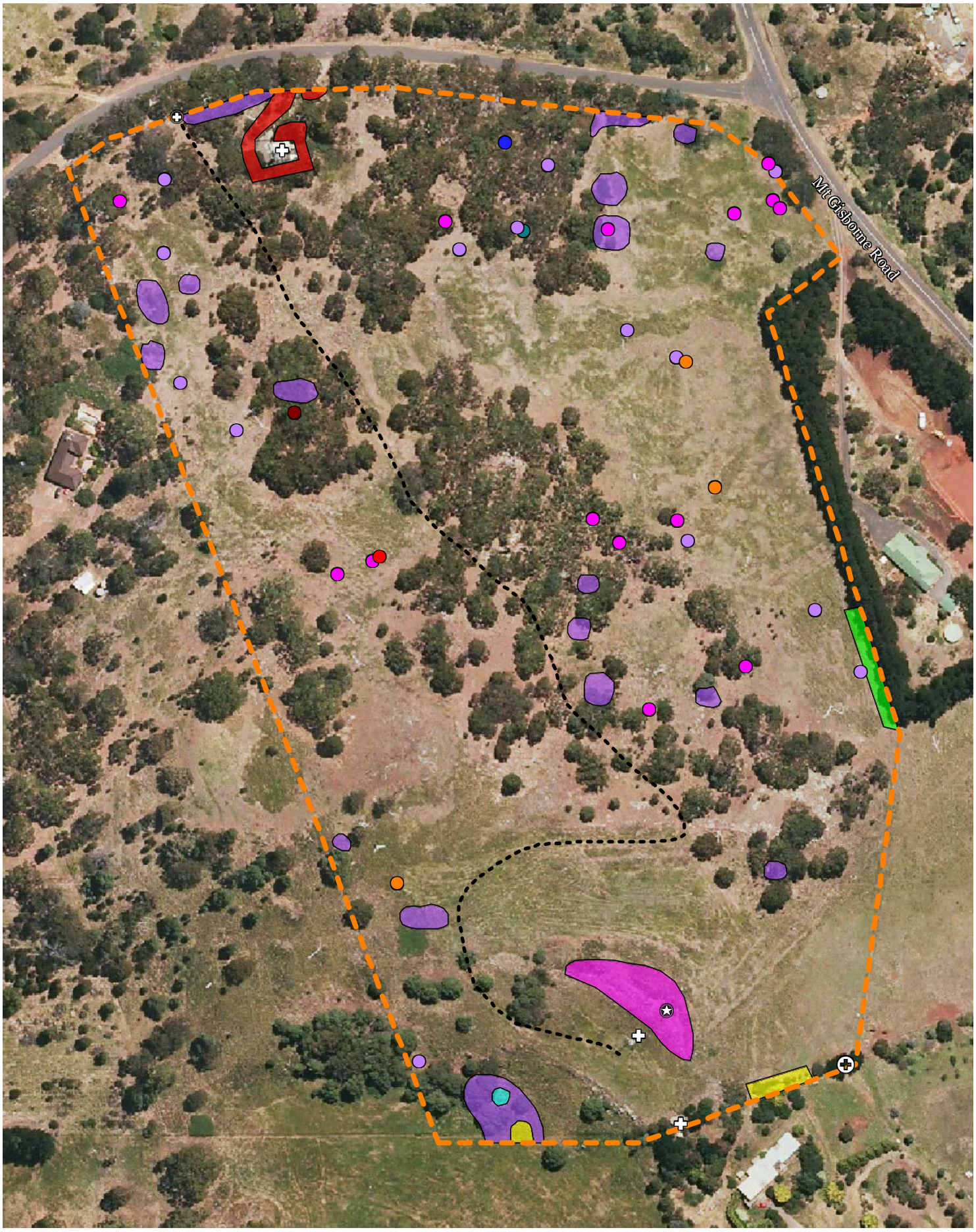
Note: Map features are approximate and are to be used as a guide only.

Figure 3 - Major Weeds and stock access point within Reserve



- Artichoke Thistle
- English Ivy
- Hawthorn
- St. John's Wort
- Sweet Briar
- Stock access point
- Blackberry
- Horehound & SweetBriar
- Montpellier Broom
- Prunus
- Garden ornamental
- Radiata Pine

N

0 50 100m

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Note: Map features are approximate and are to be used as a guide only.

Glossary

Arboreal: living in or among trees

Avifauna: birds of a specific region or period

Bioregion: an area representing a natural ecological community with characteristic flora, fauna, and environmental conditions

Canopy: the cover of above ground foliage of a plant

Ecological Vegetation Class (EVC): groups of plants which commonly occur together within a recognisable environmental niche

Habitat: the environment in which a plant or animal lives

Herbs: a plant that produces a fleshy rather than woody stem

Indigenous: native to a particular area, not introduced

Invertebrates: lacking a backbone or spinal column, for example insects

Macropods: a marsupial family that includes kangaroos and wallabies

Newer Volcanics: the area of volcanic activity in Western Victoria less than 7 million years ago

Passive recreation: non-competitive and unorganised recreational activities

Petrological: a science that deals with the origin, history, occurrence, structure, chemical composition, and classification of rocks

Prostrate: a plant that grows close to the ground

Remnant: areas or patches of indigenous vegetation that remains after land has been cleared or altered

Resilience: the ability of systems or landscapes to recover from disturbance events such as drought, floods and fire

Stag: dead standing trees

Vegetation community: different species of plants growing together in a particular habitat

Volcanic plain: a surface formed by extensive lava or ash flows

Appendix 1.1 – Flora Species Recorded Within Reserve

Table A1.1. Flora species recorded within reserve – August to October 2012

INDIGENOUS SPECIES		
Botanical Name	**Common Name**	**Significance**
Acacia dealbata subsp. *dealbata*	Silver Wattle	**Regional**
Acacia mearnsii	Black Wattle	**Local**
Acacia melanoxylon	Blackwood	**Local**
Acaena echinata	Sheep's Burr	**Local**
Acaena novae-zelandiae	Bidgee-widgee	**Local**
Adiantum aethiopicum	Common Maidenhair	**Regional**
Allocasuarina verticillata	Drooping Sheoak	**Regional**
Asperula conferta	Common Woodruff	**Local**
Asplenium flabellifolium	Necklace Fern	**Regional**
Bothriochloa macra	Red-leg Grass	**Regional**
Bursaria spinosa subsp. *spinosa*	Sweet Bursaria	**Local**
Carpobrotus modestus	Inland Pigface	**Regional**
Cassinia aculeata	Common Cassinia	**Regional**
Cassinia arcuata	Drooping Cassinia	**Regional**
Centrolepis aristata	Pointed Centrolepis	**Regional**
Chrysocephalum semipapposum	Clustered Everlasting	**Regional**
Clematis aristata	Mountain Clematis	**Regional**
Clematis microphylla	Small-leaved Clematis	**Local**
Cotula australis	Common Cotula	**Regional**
Crassula sieberiana	Sieber Crassula	**Local**
Cynoglossum suaveolens	Sweet Hound's-tongue	**Regional**
Dianella amoena (EPBC Act)	Matted Flax-lily	**National**
Dichondra repens	Kidney-weed	**Local**
Epilobium billardierianum	Variable Willow-herb	**Regional**
Epilobium hirtigerum	Hairy Willow-herb	**Regional**
Eucalyptus dives	Broad-leaf Peppermint	**Regional**
Eucalyptus obliqua	Messmate Stringybark	**Regional**
Eucalyptus radiata subsp. *radiata*	Narrow-leaf Peppermint	**Regional**

INDIGENOUS SPECIES		
Botanical Name	**Common Name**	**Significance**
Eucalyptus viminalis subsp. *viminalis*	Manna Gum	**Regional**
Euchiton japonicus	Creeping Cudweed	**Regional**
Exocarpos cupressiformis	Cherry Ballart	**Local**
Geranium potentilloides	Soft Crane's-bill	**Regional**
Geranium retrorsum	Grassland Crane's-bill	**Local**
Hydrocotyle laxiflora	Stinking Pennywort	**Regional**
Hypericum gramineum	Small St John's Wort	**Local**
Hypoxis glabella var. *glabella*	Tiny Star	**Regional**
Juncus holoschoenus	Joint-leaf Rush	**Regional**
Juncus pallidus	Pale Rush	**Regional**
Juncus subsecundus	Finger Rush	**Local**
Kennedia prostrata	Running Postman	**Regional**
Lomandra filiformis subsp. *coriacea*	Wattle Mat-rush	**Local**
Lomandra longifolia subsp. *longifolia*	Spiny-headed Mat-rush	**Regional**
Microlaena stipoides var. *stipoides*	Weeping Grass	**Local**
Oxalis exilis	Shady Wood-sorrel	**Regional**
Oxalis perennans	Grassland Wood-sorrel	**Local**
Pelargonium australe	Austral Stork's-bill	**Regional**
Pimelea humilis	Common Rice-flower	**Local**
Plantago varia	Variable Plantain	**Regional**
Poa ensiformis	Sword Tussock-grass	**Regional**
Poa labillardierei	Common Tussock-grass	**Regional**
Poa morrisii	Soft Tussock-grass	**Regional**
Pteridium esculentum	Austral Bracken	**Local**
Rubus parvifolius	Small-leaf Bramble	**Regional**
Rumex brownii	Slender Dock	**Local**
Schoenus apogon	Common Bog-sedge	**Local**
Senecio biserratus	Jagged Fireweed	**Regional**
Senecio glomeratus	Annual Fireweed	**Regional**
Senecio quadridentatus	Cotton Fireweed	**Local**
Solanum laciniatum	Large Kangaroo Apple	**Regional**

INDIGENOUS SPECIES		
Botanical Name	**Common Name**	**Significance**
Stellaria pungens	Prickly Starwort	**Regional**
Themeda triandra	Kangaroo Grass	**Local**
Veronica gracilis	Slender Speedwell	**Local**
Viola hederacea	Ivy-leaf Violet	**Regional**
Wahlenbergia luteola	Bronze Bluebell	**Regional**
Wahlenbergia stricta subsp. *stricta*	Tall Bluebell	**Regional**

INTRODUCED SPECIES		
Botanical Name	**Common Name**	**Declared Noxious Weed ***
Acetosella vulgaris	Sheep Sorrel	-
Agrostis capillaris	Brown-top Bent	-
Anthoxanthum odoratum	Sweet Vernal-grass	-
Arctotheca calendula	Cape Weed	-
Callitriche stagnalis	Common Water-starwort	-
Cirsium vulgare	Spear Thistle	Regionally controlled
Conyza bonariensis	Flaxleaf Fleabane	-
Crataegus monogyna	Hawthorn	Regionally controlled
Cynara cardunculus subsp. *flavescens*	Artichoke Thistle	Regionally controlled
Cyperus eragrostis	Drain Flat-sedge	-
Dactylis glomerata	Cocksfoot	-
Erodium cicutarium	Common Heron's-bill	-
Eucalyptus spp. (naturalised)	Eucalypt	-
Galium aparine	Cleavers	-
Genista monspessulana	Montpellier Broom	Regionally controlled, WON
Hedera helix	English Ivy	-
Helminthotheca echioides	Ox-tongue	-
Hypericum perforatum subsp. *veronense*	St John's Wort	Regionally controlled

INTRODUCED SPECIES		
Botanical Name	**Common Name**	**Declared Noxious Weed ***
Hypochaeris radicata	Flatweed	-
Jacobaea vulgaris	Ragwort	Regionally controlled
Leontodon taraxacoides subsp. *taraxacoides*	Hairy Hawkbit	-
Lolium perenne	Perennial Rye-grass	-
Marrubium vulgare	Horehound	Regionally controlled
Melaleuca spp.	Honey-myrtle	-
Myosotis arvensis	Field Forget-me-not	-
Paspalum dilatatum	Paspalum	-
Pinus radiata	Radiata Pine	-
Plantago lanceolata	Ribwort	-
Prunus spp.	Prunus	-
Raphanus raphanistrum	Wild Radish	-
Romulea rosea	Onion Grass	-
Rosa rubiginosa	Sweet Briar	Regionally controlled
Rubus fruticosus spp. agg.	Blackberry	Regionally controlled, WON
Rumex crispus	Curled Dock	-
Silybum marianum	Variegated Thistle	Regionally controlled
Solanum nigrum	Black Nightshade	-
Sonchus asper	Rough Sow-thistle	-
Sonchus oleraceus	Common Sow-thistle	-
Stellaria media	Chickweed	-
Taraxacum officinale spp. agg.	Garden Dandelion	-
Trifolium repens var. *repens*	White Clover	-
Vicia sativa	Common Vetch	-
x 2 garden escapes		-

*= Declared noxious weed within the Port Phillip and Westernport catchment under the *Catchment and Land Protection Act 1994 (*CaLP Act*)*. Declared noxious weeds cause environmental or economic harm or have the potential to cause such harm (DPI 2012).

Noxious weeds are categorised into one of four categories:
State Prohibited Weeds: These invasive plants either do not occur in Victoria but pose a significant threat if they invade, or are present, pose a serious threat and can reasonably be expected to be eradicated. If present, infestations of a State prohibited weed are relatively small.

Regionally Prohibited Weeds: Regionally prohibited weeds are not widely distributed in a region but are capable of spreading further. It is reasonable to expect that they can be eradicated from a region and they must be managed with that goal. Land owners, including public authorities responsible for crown land management, must take all reasonable steps to eradicate regionally prohibited weeds on their land.

Regionally Controlled Weeds: These invasive plants are usually widespread in a region. To prevent their spread, ongoing control measures are required. Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.

Restricted: This category includes plants that pose an unacceptable risk of spreading in this State and are a serious threat to another State or Territory of Australia. Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited.

WON: Weed of National Significance

Appendix 1.2 – Significant Flora Species Previously Recorded Within the Local Area

Key

EPBC Act - *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
CR – Critically endangered
EN – Endangered
VU – Vulnerable
K – Poorly known

FFG Act - *Flora and Fauna Guarantee Act 1988* (Victoria)
L – Listed on the *FFG Act*

DSE - Advisory List of Threatened Flora in Victoria (DSE 2005a)
x – Extinct
e – Endangered
v – Vulnerable
r – Rare
k – Poorly known

= Information derived from Flora Information System (FIS 2012)
* = EPBC Act Protected Matters Report (DSEWPC 2012)

Table A1.2. Significant flora species previously recorded within 10 kilometres of the reserve

Botanical Name	Common Name	Total number of records#	EPBC Act 1999	FFG Act 1988	DSE
NATIONALLY SIGNIFICANT SPECIES					
Dianella amoena	Matted Flax-lily	15	EN	L	e
Senecio psilocarpus	Swamp Fireweed	2	VU	-	v
Xerochrysum palustre	Swamp Everlasting	6	VU	L	v
STATE SIGNIFICANT SPECIES					
Geranium sp. 1	Large-flower Crane's-bill	4	-	-	e
Acacia leprosa var. *graveolens*	Common Cinnamon-wattle	1	-	-	k
Desmodium varians	Slender Tick-trefoil	1	-	-	k
Lachnagrostis perennis spp. agg.	Perennial Blown-grass	3	-	-	k
Pleurosorus subglandulosus	Glandular Blanket-fern	1	-	-	k
Thelymitra exigua	Short Sun-orchid	1	-	-	k
Austrostipa breviglumis	Cane Spear-grass	1	-	-	r
Austrostipa hemipogon	Half-bearded Spear-grass	1	-	-	r
Calochilus imberbis	Naked Beard-orchid	5	-	-	r
Grevillea repens	Creeping Grevillea	1	-	-	r
Leucopogon microphyllus var. *pilibundus*	Hairy Beard-heath	1	-	-	r
Poranthera corymbosa	Clustered Poranthera	1	-	-	r
Prostanthera saxicola var. *bracteolata*	Slender Mint-bush	3	-	-	r

Botanical Name	Common Name	Total number of records#	EPBC Act 1999	FFG Act 1988	DSE
Pultenaea reflexifolia	Wombat Bush-pea	1	-	-	r
Tetratheca stenocarpa	Long Pink-bells	2	-	-	r
Acacia rostriformis	Bacchus Marsh Wattle	2	-	-	v
Acacia verniciflua (1-nerved variant)	Seymour Wattle	1	-	-	v
Coronidium scorpioides aff. *rutidolepis* (Lowland Swamp)	Pale Swamp Everlasting	4	-	-	v
Eucalyptus leucoxylon subsp. *connata*	Melbourne Yellow-gum	4	-	-	v
Geranium solanderi var. *solanderi* s.s.	Austral Crane's-bill	1	-	-	v
Microseris scapigera s.s.	Plains Yam-daisy	1	-	-	v
Pterostylis truncata	Brittle Greenhood	35	-	L	e
Stylidium armeria subsp. *pilosifolium*	Hairy-leaf Triggerplant	2	-	L	e

Appendix 2.1 – Fauna Species Recorded within Reserve

Table A2.1. Fauna species recorded within Mount Gisborne Reserve (September and October 2012)

Common name	Species Name	Survey information	Comments
BIRDS			
Wedge-tailed Eagle	*Aquila audax*	S	Two soaring very high above reserve
Southern Boobook	*Ninox novaeseelandiae*	S	Female observed making breeding 'bray' call during spotlighting
Sulphur-crested Cockatoo	*Cacatua galerita*	S	
Long-billed Corella	*Cacatua tenuirostris*	S	
Galah	*Cacatua roseicapilla*	S	
Crimson Rosella	*Platycercus elegans*	S	
Eastern Rosella	*Platycercus eximius*	S	
Laughing Kookaburra	*Dacelo novaeguineae*	S	
Pallid Cuckoo	*Cacomantis pallidus*	S	
Fan-tailed Cuckoo	*Cacomantis flabelliformus*	S	
Shining Bronze-cuckoo	*Chacites lucidus*	H	
Superb Fairy-wren	*Malurus cyaneus*	S	
Golden Whistler	*Pachycephala pectoralis*	S	
Grey Shrike-thrush	*Colluricincla harmonica*	S	
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	S	
Spotted Pardalote	*Pardalotus punctatus*	S	

Common name	Species Name	Survey information	Comments
Striated Pardalote	*Pardalotus striatus*	S	
Striated Thornbill	*Acanthiza lineata*	S	
Buff-rumped Thornbill	*Acanthiza reguloides*	S	
Yellow Thornbill	*Acanthiza nana*	S	
Red Wattlebird	*Anthochaera carunculata*	S	
Grey Currawong	*Strepera versicolor*	S	
Yellow-faced Honeyeater	*Lichenostomus chrysops*	S	
Grey Fantail	*Rhipidura fuliginosa*	S	
Australian Magpie	*Gymnorhina tibicens*	S	
Little Raven	*Corvus mellori*	S	
Common Myna*	*Sturnus tristis*	S	Observed in garden outside of reserve
MAMMALS			
Easetern Grey Kangaroo	*Macropus giganteus*	S	
Common Brushtail Possum	*Trichosurus vulpecula*	S	Breeding - with one back young observed
Common Ringtail Possum	*Pseudocheirus peregrinus*	S	
Koala	*Phascolarctos cinereus*	LR	
Goat*	*Capra hircus*	S	
European Rabbit*	*Oryctolagus cuniculus*	S	
Brown Hare*	*Lepus capensis*	S	
Red Fox*	*Vulpes vulpes*	S, SC	In southern section of reserve, Scats along track

Common name	Species Name	Survey information	Comments
REPTILES			
Blue-tongue Lizard	*Tiliqua sp*	S	
Unidentified skink	*Lampropholis sp*	S	
FROGS			
Common Eastern Froglet	*Crinia signifera*	H	
Southern Brown Tree Frog	*Litoria ewingii*	H	
Spotted Grass Frog	*Limnodynastes tasmaniensis*	H	

* denotes exotic or introduced species. S – species seen during three area search surveys in Sept – Oct 2012, H – species heard during three area search surveys in Sept – Oct 2012. SC – scat observed only. LR - Local record – information supplied by personal communication with local resident.

Appendix 2.2 – Significant Fauna Species Previously Recorded Within the Local Area

Table A2.2. Significant fauna species previously recorded within a 10 kilometre radius of the reserve

Sources used to determine species status:

EPBC	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
FFG	*Flora and Fauna Guarantee Act 1988* (Victoria)
DSE	*Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2007) and *Advisory List of Threatened Invertebrate Fauna in Victoria* (DSE 2009)

Conservation Status:

EX	Extinct
RX	Regionally Extinct
CR	Critically Endangered
EN	Endangered
VU	Vulnerable
RA	Rare
DD	Data Deficient (Insufficiently or poorly known)
NT	Near Threatened
LR (NT)	Lower Risk (Near Threatened)
L	Listed as threatened under FFG Act

Common Name	Scientific Name	Most Recent Record (VBA)	Location (VBA)	Conservation Status		
				EPBC	FFG	DSE
NATIONAL SIGNIFICANCE						
Southern Brown Bandicoot	*Isoodon obesulus obesulus*	01/01/1760	GISBORNE	EN	NT	L
Regent Honeyeater	*Anthochaera phrygia*	1/12/1975	MACEDON	EN	CR	L
Swift Parrot	*Lathamus discolor*	10/04/1977	GREEN HILL	EN	EN	L
Growling Grass Frog	*Litoria raniformis*	2/12/1990	DJERRIWARRH RESERVOIR	VU	EN	L
STATE SIGNIFICANCE						
Hardhead	*Aythya australis*	1/12/1975	MACEDON	-	-	VU
Intermediate Egret	*Ardea intermedia*	1/12/1975	MACEDON	-	L	CR
Lace Goanna	*Varanus varius*	30/10/1987	ROUGHLY 2 KM NW OF MOUNT SUGARLOAF	-	-	VU
Masked Owl	*Tyto novaehollandiae novaehollandiae*	1/12/1975	MACEDON	-	L	EN
Musk Duck	*Biziura lobata*	1/12/1977	GREEN HILL	-	-	VU
Powerful Owl	*Ninox strenua*	13/05/1997	PYRITES CREEK	-	L	VU
Royal Spoonbill	*Platalea regia*	1/01/1970	ROUGHLY 2 KM W OF GREEN HILL	-	-	VU

Common Name	Scientific Name	Most Recent Record (VBA)	Location (VBA)	Conservation Status		
				EPBC	FFG	DSE
Southern Toadlet	*Pseudophryne semimarmorata*	2/05/1989	ROUGHLY 2 KM W OF BULLENGAROOK EAST	-	-	VU
Speckled Warbler	*Chthonicola sagittata*	12/11/1988	WITHIN 2 KM OF STRINGYBARK HILL	-	-	VU
Hooded Robin	*Melanodryas cucullata cucullata*	30/03/1990	ROUGHLY 2 KM N OF MOUNT SUGARLOAF	-	L	NT
Yellow-ochre Butterfly ^	*Trapezites lutea lutea*	-	Riddells Creek area	-	L	EN
Fiery Jewel ^	*Hypochrysops ignita ignita*	-	Riddells Creek area	-	L	VU
Amethyst Hairstreak #	*Jalmenus icilius*	-	Riddells Creek area	-	L	-
REGIONAL SIGNIFICANCE						
Latham's Snipe	*Gallinago hardwickii*	1/12/1979	GREEN HILL	-	NT	-
Nankeen Night Heron	*Nycticorax caledonicus hillii*	1/08/1976	MACEDON	-	NT	-
Pied Cormorant	*Phalacrocorax varius*	24/10/1976	MELBOURNE GRAMMAR SCHOOL	-	NT	-
Spotted Quail-thrush	*Cinclosoma punctatum*	1/05/1989	WITHIN 2 KM OF GREEN HILL	-	NT	-

Sources: VBA 2012. Victorian Biodiversity Atlas © The State of Victoria, Department of Sustainability and Environment

^ Data obtained from the Victorian Butterfly Database (Museum Victoria)

Data obtained from a local record

Appendix 3
Definitions of Ecological Significance

Based on *Standard Criteria for Sites of Biological Significance in Victoria* (Amos 2004)

Nationally Significant

Species of national significance are flora or fauna listed as Extinct, Extinct in the Wild, Critically Endangered, Endangered, Vulnerable or Rare under the *Environment Protection and Biodiversity Conservation* (EPBC) *Act 1999* or under the relevant National Action Plan. Relevant National Actions Plans include: Maxwell *et al.* (1996), Duncan *et al.* (1999), Lee (1995), Garnett and Crowley (2000), Cogger *et al.* (1993), Tyler (1997), Wagner and Jackson (1993) and Sands and New (2002).

Ecological Communities of national significance are those listed as Critically Endangered, Endangered or Vulnerable under the *EPBC Act*

Sites are considered nationally significant if they support:

- Known habitat for nationally significant species or communities.
- Areas with unusually high native species richness, vegetation, habitat types or communities that are exceptional when compared to sites nationally.
- Corridors or habitat components that are important at a national scale. i.e. forming a link with nationally significant vegetation such as a National Park, and/or Ramsar Wetlands.
- Breeding sites, nesting or nursery or other sites where individuals aggregate for a defined part of their life cycle which comprises ≥1% of the national breeding population of a species.
- Areas regularly used by migratory species which are nationally threatened, or used by ≥1% of the world or national population of a taxon.
- Known or potential feeding sites of a nationally significant nomadic, migratory or mobile species within the known range of a species which is known to be reliant on defined dispersed feeding sites and where the species is nationally Critically Endangered, Endangered or Vulnerable.

State Significant

Species of state significance in Victoria are flora or fauna listed as Extinct, Extinct in the Wild, Critically Endangered, Endangered, Vulnerable or Conservation Dependent in the *Advisory List of Rare or Threatened Plants* (DSE 2005a), the *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2007), or the *Advisory List of Threatened Invertebrate Fauna in Victoria* (DSE 2009); species listed as Near Threatened, Conservation Dependent

or Least Concern under the *EPBC Act* or the relevant National Action Plan; and/or species listed under the Victorian *FFG Act*. Relevant National Actions Plans include: Maxwell *et al.* (1996), Duncan *et al.* (1999), Lee (1995), Garnett and Crowley (2000), Cogger *et al.* (1993), Tyler (1997), Wagner and Jackson (1993) and Sands and New (2002).

Ecological Communities of state significance in Victoria are those listed as threatened under the Victorian *FFG Act*.

Sites are considered to be of state significance if they support:

- Known habitat for state significant species or communities.
- Areas that support, or regularly support individuals of a state significant species or community.
- Vegetation which would have a vegetation significance rating of 'Very High' or 'High' if assessed using the DSE Vegetation Quality Assessment Manual (DSE 2004b).
- Areas with unusually high native species richness, vegetation, habitat types or communities that are exceptional when compared to sites on a statewide basis.
- Corridors or habitat components that are important at a state scale. i.e. forming a link with state significant vegetation such as State Parks and/or Flora and Fauna Reserves.
- Breeding sites, nesting or nursery or other sites where individuals aggregate for a defined part of their life cycle which comprises ≥1% of the state breeding population of a species.
- Areas regularly used by migratory species which are threatened in Victoria, or used by ≥1% of the state population of a taxon.
- Known or potential feeding sites of a nomadic, migratory or mobile species within the known range of a species which is known to be reliant on defined dispersed feeding sites and where the species is state Endangered, Vulnerable or Data Deficient.

Regionally Significant

Species of regional significance in the Victorian Volcanic Plain Bioregion are flora species considered rare by the authors or in any relevant regional Native Vegetation Plan, and fauna species considered rare by the authors or listed as Near Threatened or Data Deficient in the *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2007) or the *Advisory List of Threatened Invertebrate Fauna in Victoria* (DSE 2009).

Ecological Communities of regional significance in the Victorian Volcanic Plain Bioregion are those listed as an Endangered, Vulnerable or Depleted ecological vegetation class within a particular bioregion in the relevant catchment Native Vegetation Plan.

Sites are considered to be of regional significance if they support:

- Known habitat for regionally significant species or communities.
- Areas that support, or regularly support individuals of a regionally significant species or community.
- Vegetation, which would have a vegetation significance rating of 'Medium' if assessed under the DSE Vegetation Quality Assessment Manual (DSE 2004b).
- Areas with unusually high native species richness, vegetation, habitat types or communities that are exceptional when compared to sites regionally.
- Corridors or habitat components that are important at a regional scale.
- Breeding sites, nesting or nursery or other sites where individuals aggregate for a defined part of their life cycle which comprises ≥5% of the bioregional breeding population of a species.
- Areas regularly used by migratory species which are declining in the bioregion, or used by ≥5% of the bioregional population of taxon.
- Known or potential feeding sites of a nomadic, migratory or mobile species within the known range of a species which is known to be reliant on defined dispersed feeding sites and where the species is regionally significant.

Locally Significant

All indigenous species and communities are considered locally significant within the Victorian Volcanic Plain Bioregion.

Sites are considered to be of local significance if they support:

- Vegetation which would have a vegetation significance rating of 'Low' if assessed under the DSE Vegetation Quality Assessment Manual (DSE 2004b).
- Corridors or habitat components important at a local scale.
- Breeding sites, nesting or nursery or other sites where individuals aggregate for a defined part of their life cycle which comprises ≥25% of the local breeding population of a species.
- Areas regularly used by migratory species which are locally declining, or use by ≥25% of local population of taxon.
- Known or potential feeding site of a nomadic, migratory or mobile species within the known range of a species which is known to be reliant on defined dispersed feeding sites and where the species utilises a feeding resource that is particularly limited in the local area.

Appendix 4
Definitions of Vegetation Condition

Good Condition

Vegetation in good condition supports a diverse range of native floristic and structural components and a low cover of introduced species. Ecosystem processes are likely to be intact.

Moderate Condition

Vegetation of moderate condition supports some range of floristic and structural components with greater than 25% cover of introduced species. Some ecosystem processes may be present or disrupted in some way.

Poor Condition

Vegetation of poor condition is likely to be dominated by introduced species with a low presence of native floristic and structural components. Relevant ecosystem processes are likely to be absent.

APPENDIX 5 – MANAGEMENT ACTIONS

Action #	Management Action	Refer to section within report	Who is involved in undertaking this action?	Description of works undertaken	Issues encountered	Works still to undertake
Immediate and/or ongoing planning and liaison actions						
1	Trust for Nature covenant registered on-title of reserve	Section 4.2.10	Council, TFN			
2	Implement an adaptive management framework that increases the resistance and resilience of the reserve to the impacts of climate change	Section 4.3	Council			
3	Adopt a landscape scale approach to management of the reserve with effective cooperation, communication and integration with various authorities and community groups	Section 4.3	Council, CMA, Landcare, other authorities and groups			
4	Explore potential partnerships with the Wurundjeri	Section 4.4	Council, Wurundjeri (WTLaCCHC)			
5	Ensure future land planning protects Mount Gisborne from surrounding urban development	Section 4.2.6	Council			
6	Determine opportunities to maintain/improve habitat connectivity with the Pyrete Range and Lerderderg State Park to the west	Section 4.2.8	Council			
7	Liaise with adjoining landowners about stock access issues and fixing boundary fencing	Section 4.2.1. Figure 3	Council and contractors, adjoining landholders			

8	Liaise with telecommunications staff regarding vehicle and equipment hygiene	Section 4.2.2	Council and contractors, telecomm-unications staff			
9	Liaise with adjoining neighbours regarding invasive plants and animals, pet animals and protection and enhancement of native vegetation on their properties	Section 4.6	Council, neighbours			
10	Encourage the formation of a local 'Friends of' group for the reserve. Illegal activities to be reported to council via a local reserve 'champion'	Section 4.6	Council, neighbours			
11	Identify potential for specific habitat connectivity works aimed at declining woodland bird species	Section 4.2.8	Council			
12	Engage landholders and promote involvement with conservation programs such as Trust for Nature and Land for Wildlife	Section 4.2.8	Council			
13	Promote the values of the reserve to local and regional schools and tertiary institutions	Section 4.5.3.(ii)	Council			
Immediate and/or ongoing ecological management actions						
1	Council officers, local groups and individuals encouraged to submit new species sightings to council, state govt and biological databases	Section 4.2.9	Council, contractors, residents			
2	Retain all stags, logs and coarse woody debris	Section 4.2.7	Council			
Immediate and/or ongoing recreation management actions						
1	Provide a walk-in entrance point on Woodland Drive	Section 4.5.1	Council			
2	Install a locked vehicle access gate	Section 4.5.1	Council			
3	Ensure entrance point is weed free and maintained	Section 4.5.1	Council			

4	Install a street front sign at the entrance on Woodland Drive	Section 4.5.2	Council			
5	Consider placing interpretive signage at the Woodland Drive entrance	Section 4.5.2	Council			
6	Inappropriate activities may be highlighted on signage	Section 4.5.2	Council			
7	Promote the values of the reserve to bushwalkers and naturalists	Section 4.5.3.(i)	Council			
8	Consider an interpretive 'walk and gawk' tour in cooperation with a local Friends of /Landcare group	Section 4.5.3.(i)	Council			
Spring - Summer						
1	Control of small and isolated populations of noxious and high-threat weeds (Hawthorn, St. John's Wort, Artichoke Thistle and English Ivy)	Section 4.2.2. Table 1. Figure 3	Council and contractors			
2	Control of larger populations of noxious and high-threat weeds and garden escapes (Blackberry, Horehound, Prunus, Radiata Pine, Montpellier Broom, Sweet Briar and garden escapes)	Section 4.2.2. Table 1. Figure 3	Council and contractors			
3	Follow-up weed control of areas burnt in autumn	Section 4.2.3	Council, contractors, CFA			
4	Investigate and implement pest animal control actions	Sections 4.2.4 and 4.2.5	Council and contractors			
5	Undertake comprehensive flora and fauna survey in spring-summer- include targeted survey for Matted Flax-lily	Section 4.2.9	Council and contractors			
6	Monitoring (undertaken biennially)	Section 4.7.	Council and contractors			

Autumn						
1	Trial patch burn within open grassland areas.	Sections 4.2.2 & 4.2.3.	Council, contractors, CFA			
2	Follow-up weed control within 4-6 weeks post-burn	Sections 4.2.2 & 4.2.3. Table 1.	Council and contractors			
3	Continue with control of noxious and high-threat weeds	Section 4.2.2. Table 1. Figure 3	Council and contractors			

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