Glenfern Valley Bushlands
Management Plan
2016

Prepared by

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Biosis

For

Yarra Ranges Council
Friends of Glenfern Valley Bushlands

October 2016

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For

Yarra Ranges Council
Friends of Glenfern Valley Bushlands

Acronyms

CFA: Country Fire Authority
Council: Yarra Ranges Council
DELWP: Department of Environment, Land, Water and Planning
DSE: (former) Department of Sustainability and Environment
Friends: Friends of Glenfern Valley Bushlands
GVB; the reserve: Glenfern Valley Bushlands

Acknowledgments

We acknowledge the valuable comments and advice provided by members of the project steering committee, the Friends of Glenfern Valley Bushlands, staff of Yarra Ranges Council, the CFA, Melbourne Water, and the Department of Environment, Land, Water and Planning.

Photographs: Linda Fullagar, Robin Crocker et al.

Cover: Manna Gums along Ferny Creek

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Summary

Glenfern Valley Bushlands is an important 40 hectare nature reserve located in the Dandenong Ranges, east of Melbourne, on Glenfern Road between Upper Ferntree Gully and Upwey,

Following reservation of in 2003, extensive works have been undertaken in the reserve by the Friends of Glenfern Valley Bushlands with assistance from Yarra Ranges Council and other agencies. Large weed infestations have been largely controlled, indigenous vegetation regenerated, rubbish removed, vehicle movement regulated and facilities provided: a remarkable achievement by a community based group with limited resources.

The reserve now protects significant indigenous flora and fauna and provides the community with an attractive bushland setting popular for walking and other informal recreation and educational uses. The reserve is at least regionally significant for biodiversity conservation within the Highlands – Southern Fall Bioregion

Proposed improvements to the reserve were set out in a detailed management plan prepared in 2004. Much of this plan has been implemented and the Friends group initiated a project to prepare this 2016 plan to review progress and identify goals, policies and actions to help ensure a successful future for the reserve.

The broad **mission** for the reserve is:

> *To conserve and enhance the diversity of native flora and fauna of the Glenfern Valley Bushlands while preserving community access and encouraging education and compatible uses for the enjoyment of current and future generations.*

The key **general goals** for the reserve are to:

- Manage the reserve to protect and enhance natural values
- Provide safe and compatible recreation opportunities
- Involve the community in the reserve
- Ensure sound and sustainable management

Key **future directions** to help achieve this vision include:

- The reserve is managed to a high standard by Council and the Friends group, reflecting its value as part of an important biolink and one of the few remaining expansive bushland reserves in the Upper Ferntree Gully/Upwey area.
- Management continues to focus on enhancing natural values and presenting the reserve as a model of sensitive management for conservation and recreation – a green oasis between the suburbs and the hills.
- The reserve is widely appreciated by the local community for its flora and fauna and attractive landscapes, and opportunities for relaxation, nature appreciation and educational activities.
- Pedestrian access to the reserve from nearby residential areas and local open space provides for safe and convenient access and extended walks. Support for and involvement in the Friends group is maintained at a high level and the outstanding contribution of the Friends group and Council is widely recognised.

A series of activities identified in the plan provide the basis for future management, setting out actions, responsibilities, priorities and broadly indicative costs. Implementation of the plan will build on the exceptional achievements of the Friends and Council since 2003.

1 Introduction and context

1.1 Introduction

Glenfern Valley Bushlands was formally reserved in 2003 following strong community support for protection of the site's natural values. Since that time, a very active Friends group has worked closely with Yarra Ranges Council to achieve remarkable improvements in the reserve. The group has successfully undertaken extensive weed control and revegetation works, removed rubbish, regulated vehicle access, and provided facilities for informal recreation. The area is now used regularly by walkers, dog walkers and other visitors who enjoy informal recreation and educational experiences in a bushland setting.

A management plan for the reserve, prepared in 2004, provided valuable guidance for improvement works and has been largely implemented. It is timely to prepare a new plan, building on the earlier plan and identifying new goals and actions to guide future management.

This new plan was developed by consultants working closely with a steering committee made up of representatives of the Friends of Glenfern Valley Bushlands and Yarra Ranges Council. All aspects of the 2004 plan were reviewed, site assessments undertaken, and a range of stakeholders consulted. An earlier Friends' document: *2009 Reserve Management Implementation Plan*, was also reviewed.

A chronology of the reserve is included in appendix 1.

1.2 Location

Glenfern Valley Bushlands is located approximately 35 km east of Melbourne, partly in Upper Ferntree Gully and partly in Upwey. The area is Crown land and covers about 40 hectares between Glenfern Road and Ferny Creek.

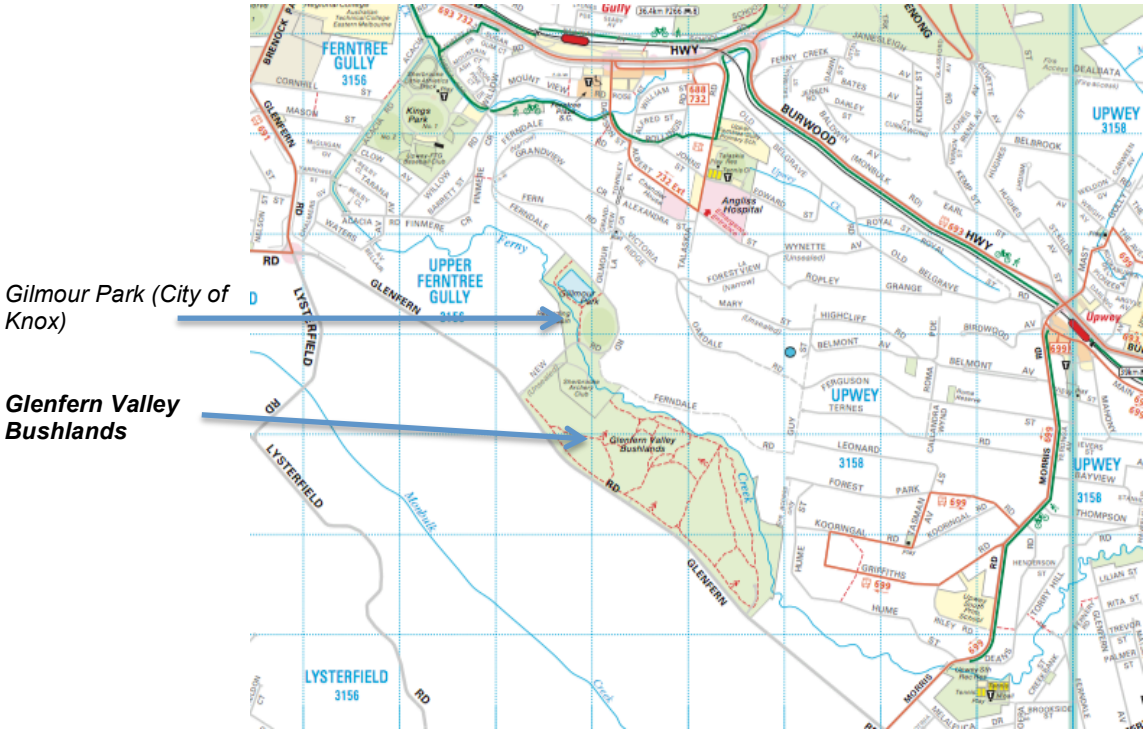


Figure 1: Location of Glenfern Valley Bushlands (Source: City of Knox website)

The reserve is adjacent to a Melbourne Water retarding basin on Ferny Creek, currently leased by the Sherbrooke Archers Club, and the 4.3 hectare Gilmour Park Reserve in the City of Knox. The latter reserve has natural values of regional significance, complementing Glenfern Valley Bushlands: (http://www.knox.vic.gov.au/Files/SitesofBio/Site2_GilmourParkUFTG.pdf).

The reserve also includes a fenced works area and sewer access point in the southeast corner. There is a small Council bushland reserve immediately east of the reserve (see map, appendix 2).

Figure 3 shows details of the reserve's features and facilities.

1.3 Context

A range of policy and strategy documents was reviewed to assist in developing the management plan. These included relevant state government strategies, the Yarra Ranges Planning Scheme, and relevant Council strategies.

State government strategies

An overview of open space provision in the metropolitan area is provided in the Victorian Environment Assessment Council (VEAC) *Metropolitan Melbourne Investigation Final Report, 2011*: available at http://veac.vic.gov.au/.

A new Metropolitan Open Space Strategy is being prepared by the Metropolitan Planning Authority (2015). This notes that:

> *'Open spaces … contribute to many environmental benefits, including protecting biodiversity, reducing urban heat and regulating air and water quality, as well as helping to build social connections by providing opportunities for gathering and provide a context for cultural heritage, artistic expression and diversity.'*
> *http://www.mpa.vic.gov.au/openspace.*

Current information on State Government policies and strategies on biodiversity, wildlife, climate change etc. is available at: http://delwp.vic.gov.au/. These provide for protection and enhancement of natural values in open space areas.

Yarra Ranges plans and strategies

- ***Yarra Ranges Planning Scheme zones and overlays***

The reserve is zoned PPRZ (Public Park and Recreation Zone), just outside the Urban Growth Boundary (UGB). Management of the reserve must comply with the requirements of the PPRZ zone. The adjacent land leased by the archery club is zoned PUZ1 (Public Use Zone Service And Utility).

Glenfern Valley Bushlands

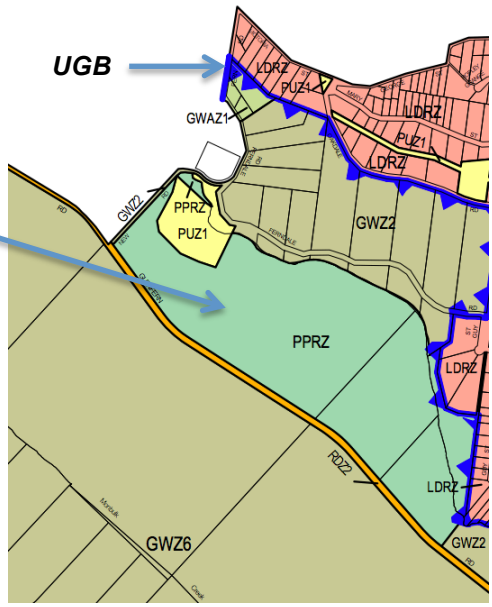


Figure 2: Zoning map from Yarra Ranges Planning Scheme (November 2015)

Several overlays apply to all or part of the reserve. These help protect reserve values.

- A *Significant Landscape Overlay* applies to the whole reserve (and to the adjacent Lysterfield valley south of Glenfern Road).
- A *Wildfire Management Overlay* applies to the whole reserve (and adjacent land north of Ferny Creek).
- A *Land Subject to Inundation Overlay* applies to low-lying land along Ferny Creek.
- An *Erosion Management Overlay* applies to several sloping areas in the reserve.

There is no *Environmental Significance Overlay* applied to the reserve.

- ***Yarra Ranges Municipal Strategic Statement (MSS)***

Council's MSS aims to protect key values including:

- Natural beauty and scenic values
- Open space and recreational values
- Healthy ecosystems, water resources and biodiversity value

- ***Yarra Ranges Environment Strategy 2015–2025***

The Strategy includes goals, principles and future directions relevant to the reserve.

Goals include:

- Our iconic places and their natural character are actively protected.
- Our water resource is improved and preserved.
- Our native plants and animals are protected and their habitat is enhanced.

Principles include:

- Take a whole of landscape approach – across boundaries
- Engage with our community.
- Work effectively with other land managers, key agencies and alliances.
- Think long-term rather than short-term.

Actions include:

- Protect existing vegetation and ecosystems.
- Rehabilitate and restore degraded flora and fauna habitat.

Consultation for the Environment Strategy, found that local residents valued:

- trees, bushland, forest
- wildlife, birds, animals
- scenery and landscape quality
- experiencing natural places
- recreation opportunities
- clean air and waterways.

These goals, principles and community values are a useful basis for developing environmental actions in this plan.

- ***Yarra Ranges Flora and Fauna Plan 2012***

This broad plan includes a set of goals for retaining and protecting flora and fauna in the environment, including a goal to re-create and restore flora and fauna habitat.

- ***Yarra Ranges Recreation and Open Space Strategy 2013-23 (various reports/plans)***

The strategy recognises Glenfern Valley Bushlands as a major area of open space in Upwey and Tecoma ('Precinct G'), providing for relaxation, bushwalking and nature appreciation. It is noted that the population of the area is ageing and not growing significantly.

Improved connections to open space are identified as an opportunity in the precinct, however mapping shows that there is a section of private land along Ferny Creek to the east of the reserve that makes linkage difficult (appendix 2).

The Strategic Framework includes a local guideline to provide perimeter trails around large parks – with local links to sub-regional and regional trails.

- ***Yarra Ranges Hike and Bike Plan (in preparation, 2016)***

This plan proposes projects that connect communities to open spaces.

Trends in use of parks and reserves

The 2004 management plan for the reserve discussed trends in open space use and management. Many trends are still relevant including the increased use of open space for informal recreation, community support for the conservation of environmental values, and challenges in resourcing effective on-ground management.

Recent trends include increasing recognition of the health benefits of contact with nature, but also changing leisure patterns such as growth in 'screen time', travel and café culture. The importance of climate change has also been increasingly recognised including possible impacts of increased droughts and wildfires.

Figure 3: Map of reserve features and facilities

2 Analysis of current situation

2.1 Existing uses

Existing recreational uses of the reserve include casual walking, bushwalking club events, dog walking, socialising, picnicking, informal cycling, bird watching, nature appreciation and sightseeing. There are also conservation activities led by the Friends group and educational and recreational use by school groups.

Facilities provided include parking, walking tracks, signs, seats and picnic tables.

The Sherbrooke Archers Club uses a large grassed area in the Melbourne Water retarding basin and bushland along Ferny Creek, adjacent to the reserve.

2.2 Existing values

Flora and fauna values

The area has a high diversity of native species that occur in a range of habitats.

Two EVCs (ecological vegetation classes) naturally occur in the reserve (see appendix 3 for details):

- **Valley Grassy Forest** *on slopes*
- **Riparian Forest** *on lower slopes and creek flat*

A total of 137 indigenous and 104 introduced plant species was recorded in the previous management plan. With revisions and additional species found during preparing this management plan, this gives a current total of 144 indigenous and 108 introduced plant species (appendix 4).

The reserve supports several fauna habitat types including ferny creek, riparian forest, grassy woodland, planted native and exotic vegetation, weed thickets and predominantly introduced vegetation. The diversity of habitats, which vary in vegetation structure and composition, plays an important role in providing habitat for numerous native fauna species.

There are at least 106 indigenous and 12 introduced recorded species in or immediately adjacent to the reserve. These include at least 11 native mammals 81 native birds, six native reptiles and two frog species.

The Victorian Biodiversity Atlas (VBA) flora and fauna list for GVB is incomplete, missing many of the species recorded in this management plan. The VBA should be updated.

Based on existing ecological information, Glenfern Valley Bushlands is at least regionally significant for biodiversity conservation within the Highlands – Southern Fall Bioregion.

Generally, pest plants and animals adversely affect the area's natural values.

Landscape and heritage values

The reserve has moderate overall landscape values, providing an interesting contrast with rural landscapes in the adjacent Lysterfield Valley (section 4.1.3). Areas along Ferny Creek are of high scenic value (see cover photo).

There are limited remains of early settlement, e.g. fruit trees near the southwest corner, and drainage ditches. There are no listed sites of heritage significance in the reserve.

2.3 Existing conditions

Site inspections and discussions were undertaken to identify existing conditions and the main issues facing the reserve.

The condition and appearance of the reserve has improved markedly since 2003 (figures 4, 5, 6).

- Substantial progress has been made with weed control, particularly of Sweet Pittosporum, Blackberry and Boneseed, leading to natural regeneration of a range of species. Management of introduced grasses has also enhanced the growth of indigenous grasses (section 5.1.1).

- Fencing has prevented unauthorised vehicle access, markedly reducing rubbish dumping and damage to soils and vegetation.
- Improvements to the track network have improved access for fire protection and management, and walking.
- Active management of the reserve, e.g. rubbish removal and track slashing, and the provision of basic visitor facilities, has improved visitor access and experience.

Figure 4: Boneseed removal 2003 (left) and enhanced understorey 2015 (right)

Figure 5: Improved fire access/management track (left) and walking track near Ferny Creek (right), 2015

Figure 6: Visitor facilities near main entrance, 2015

2.4 Existing management and resources

Management responsibility

The reserve was reserved under the *Crown Land (Reserves) Act 1978* in 2003. This provides for management of the reserve in accordance with state and local government policies and guidelines.

The Department of Environment, Land, Water and Planning (DELWP) has overall responsibility for the reserve, and has delegated management to the Yarra Ranges Council, which was appointed Committee of Management on 12 December 2003. Council by-laws apply to the reserve with enforcement by authorised Council officers.

DELWP provides advice and assistance to Committees of Management – see: *Information for Committees of Management*, and the *Committees of Management Responsibilities and Good Practice Guidelines* (2015): http://www.depi.vic.gov.au/forestry-and-land-use/managing-land/managing-crown-land

On-ground management is shared between the Council and the Friends of Glenfern Valley Bushlands, although there is no formal agreement recognising this arrangement. The Friends group undertakes or oversees a range of tasks including weed control and revegetation work, some slashing, provision and maintenance of basic facilities, and rubbish collection. (See the Friends' website: http://www.glenfernvalleybushlands.org.au/)

Adjacent management areas

- Melbourne Water owns the retarding basin land to the northwest of the reserve, currently leased to the Sherbrook Archery Club. Ongoing cooperative management of this area and the Bushlands reserve is highly desirable.
- Northwest of the Archery Club, Gilmour Park also forms part of Ferny Creek retarding basin.
- The newly created Ferny Creek Reserve is located downstream of the retarding basis. This reserve and Gilmour Park are managed by Knox City Council.
- Along Ferny Creek to the north of Glenfern Valley Bushlands are a number of privately owned properties that have titles extending to the creek. These are vacant blocks with significant weed infestations.
- South East Water and Council are responsible for the small deport and sewer access point at the southeast corner of the reserve.

Budget and assets

Operating budget

Council's 2014-15 budget provided for annual management costs of $18,000, comprising weed control: $8000, slashing and fuel reduction: $7000, and infrastructure (mostly trails): $3000. Funds were also provided from other Council programs plus staff time, particularly the Bushland team.

The Friends group provided substantial additional operational activities.

Capital works

Grants and other funds received for capital works included:

Source	$
Melbourne Water	95,000
Caring for Our Country	18,000
Glenfern Fund-raising, vouchers etc.	10,500
Council Community Grants	6,500
Council Ward Funds	4,200
FAHCSIA	1,800
Total	136,000

Council has previously funded boundary fencing, track improvements and other works. Additional funding of $30,000 has been allocated to upgrading the former quarry area.

Assets held by the Friends

The Friends' asset register indicates that the group has basic equipment and tools etc. purchased (or donated) at a cost of $5,690, and currently valued at $4,500 (January 2016)

3 Issues identified

3.1 'SWOT' analysis

A review of the 2004 SWOT analysis, and current management, identified the following strengths, weaknesses, opportunities and threats for the study area.

Strengths	Weaknesses	Opportunities	Threats/constraints
▪ Range of natural settings: creek, forest, woodland, grassland ▪ Good remnant vegetation ▪ Attractive creek and views to north ▪ Relatively large size ▪ Good for walking and sightseeing ▪ Good vehicle access ▪ High public profile ▪ Friends very active ▪ Good relationships between Council, Friends and CFA	▪ High dependence on Friends to undertake management activities	▪ Improve walking links along creek to Gilmour Reserve, and across creek to north / north-east ▪ Further improvements to facilities, tracks and quarry area ▪ Ecological burning ▪ Further grants ▪ Increased involvement of local community in Friends group, use of reserve, and compatible community activities ▪ Improved management of land north of reserve ▪ Maintain strong links between Friends and Council re management.	▪ Weeds including invasion from neighbouring land and along Ferny Creek ▪ Wildfire, drought ▪ Erosion ▪ Dogs – threats to wildlife, and impacts on other visitors ▪ Some risk management issues, e.g. tree limbs ▪ Limited management resources ▪ An increase in visitor use could affect natural values

3.2 Consultation

Community stakeholders were invited to provide input into the planning process through the Friend's website, a 'Have your say' leaflet and covering letter distributed locally, and notices in the reserve. Responses received suggested improvements in walking access to the reserve.

Discussions were also had with relevant agencies including the CFA, Melbourne Water and DELWP.

3.3 Major issues

Important issues identified in the SWOT analysis, consultation, and field assessments include:

- Ongoing weed control and vegetation management
- Dog walking conflicts including dogs off lead annoying other reserve users and adversely affecting wildlife
- Opportunities for links to adjacent areas
- Recreation opportunities, tracks and visitor facilities
- The future of the quarry area
- Maintenance programs
- Risk management and safety issues particularly fire
- The long-term viability of the Friends group
- Opportunities to increase community involvement in the reserve and the Friends group

These and other issues are discussed in detail in section 4.

4 Vision, principles and goals

4.1 Vision and future directions

The Friends Group has developed and adopted a vision for the reserve:

> *To conserve and enhance the diversity of native flora and fauna of the Glenfern Valley Bushlands while preserving community access and encouraging education and compatible uses for the enjoyment of current and future generations.*

Key future directions to help achieve this vision include:

- The reserve is managed to a high standard by Council and the Friends group, reflecting its value as part of an important biolink and one of the few remaining expansive bushland reserves in the Upper Ferntree Gully/Upwey area.
- Management continues to focus on enhancing natural values and presenting the reserve as a model of sensitive management for conservation and recreation – a green oasis between the suburbs and the hills.
- The reserve is widely appreciated by the local community for its flora and fauna and attractive landscapes, and opportunities for relaxation, nature appreciation and educational activities.
- Pedestrian access to the reserve from nearby residential areas and local open space provides for safe and convenient access and extended walks. Support for and involvement in the Friends group is maintained at a high level and the outstanding contribution of the Friends group and Council is widely recognised.

4.2 Planning and management principles

The following principles provide guidance for the future planning, design, development and management of the reserve. They have been developed from government strategies and other park and conservation studies and emphasise conservation and enhancement of flora and fauna, provision for compatible recreation, and effective management and maintenance.

Conservation

- Protect biodiversity, ensuring that indigenous species flourish.
- Allow natural ecological processes to operate as far as practicable.
- Protect natural areas (Ferny Creek, soils and vegetation) from damage by recreational and management activities.

Access and equity

- Provide good access, where practicable, for the whole community.
- Continue to provide parking around the perimeter of the reserve.
- Provide a range of opportunities for walking and nature appreciation.
- Promote sustainable use of the area and the benefits of recreation.

Diversity, quality and design

- Build on the local character and values of the area.
- Provide a range of attractive settings for informal recreation.
- Provide high quality layout, design, and facilities for safe and enjoyable use, appropriate for a bushland reserve

Management and maintenance

- Use this approved management plan to guide future management. When new initiatives are identified, assess these against the principles, goals and priorities set out in this plan.
- Assess risks and take action to provide for the safety of all people using the reserve.
- Ensure clear accountability and responsibility for management, development and maintenance of the reserve.

- Seek external funding and sponsorship to support management of the reserve.
- Provide quality maintenance to meet community and conservation objectives, within budget constraints.
- Actively involve the community in development and care of the area.
- Periodically review the plan to ensure that it remains relevant to the community's requirements and interests. The proposed timeline for this is every 5 years.

These principles and strategies have been followed in developing goals and actions in this plan.

4.3 Key goals

As in the 2004 plan, the **key general goals** for the reserve are to:

1. ***Manage the reserve to protect and enhance natural values***
2. ***Provide safe and compatible recreation opportunities***
3. ***Involve the community in the reserve***
4. ***Ensure sound and sustainable management***

The achievement of these goals is discussed in detail in section 5.

5 Actions to achieve goals

This section discusses the main issues and sets out the actions required to achieve the key goals. An overall action program is shown in section 6.

5.1 Goal 1: Protect and enhance natural values

Glenfern Valley Bushlands has significant natural values requiring protection and enhancement.

Significance

Based on existing ecological information, Glenfern Valley Bushlands has at least regional significance for biodiversity conservation within the Highlands – Southern Fall Bioregion. Significant ecological features of the reserve include:

- Valley Grassy Forest, which is vulnerable in the bioregion and Victoria.
- At least one fauna species of state significance (Powerful Owl).
- Numerous regionally and locally significant flora species and suitable habitat for a number of regionally significant fauna species, particularly birds.
- Relatively intact example of Riparian Forest, which connects to other areas of vegetation within the local area (fauna corridor).
- A diversity of habitats including Riparian Forest, which contains large, hollow-bearing Manna Gums (Ferny Creek). Tree hollows provide habitat for a range of species that are dependent or partly dependent on hollows during their life cycle.
- Areas supporting relatively intact understorey which provide suitable habitat for various ground dwelling fauna species such as small mammals, reptiles, frogs and invertebrates.

5.1.1 Vegetation

The state government classifies native vegetation in Victoria into 'ecological vegetation classes' (EVCs). The reserve supports two EVCs:

- Valley Grassy Forest
- Riparian Forest

A few square metres of Tall Marsh occur on the western boundary, but this is not natural as it is part of an artificial impoundment in the adjacent archery club.

In addition there are areas of predominantly introduced vegetation concentrated at the top of the site near Glenfern Road, on the alluvial flats near the archery club, and on the former quarry site in the centre of the reserve.

The location and descriptions of the EVCs are given in appendix 3.

The original (pre-1750) vegetation of the reserve is classified as Valley Grassy Forest, Herb-rich Foothill Forest and Riparian Forest in the mapping of Oates and Taranto (2001) which is now included in the Biodiversity Interactive Map. However, Herb-rich Foothill Forest does not occur on the site. The wetland on the alluvial flat described in the previous management plan has disappeared due to dry conditions and there is no indication of it there now.

The vegetation of the reserve has been surveyed by Biosis and local naturalists from the Friends group, with the total number of recorded flora species currently standing at 144 indigenous and 108 introduced species. These numbers will increase as more species are found in future.

The quality of the vegetation is variable, ranging from relatively intact (low weed cover, all structural layers intact, close to natural species diversity) to highly modified (high weed cover, structurally modified, low species diversity). The Riparian Forest is generally in good to very good condition, while the Valley Grassy Forest on the slopes ranges from poor to very good condition (where weed control works have been undertaken).

Vegetation quality was mapped during the preparation of the plan – see figure 7. This will provide a useful benchmark for future vegetation monitoring.

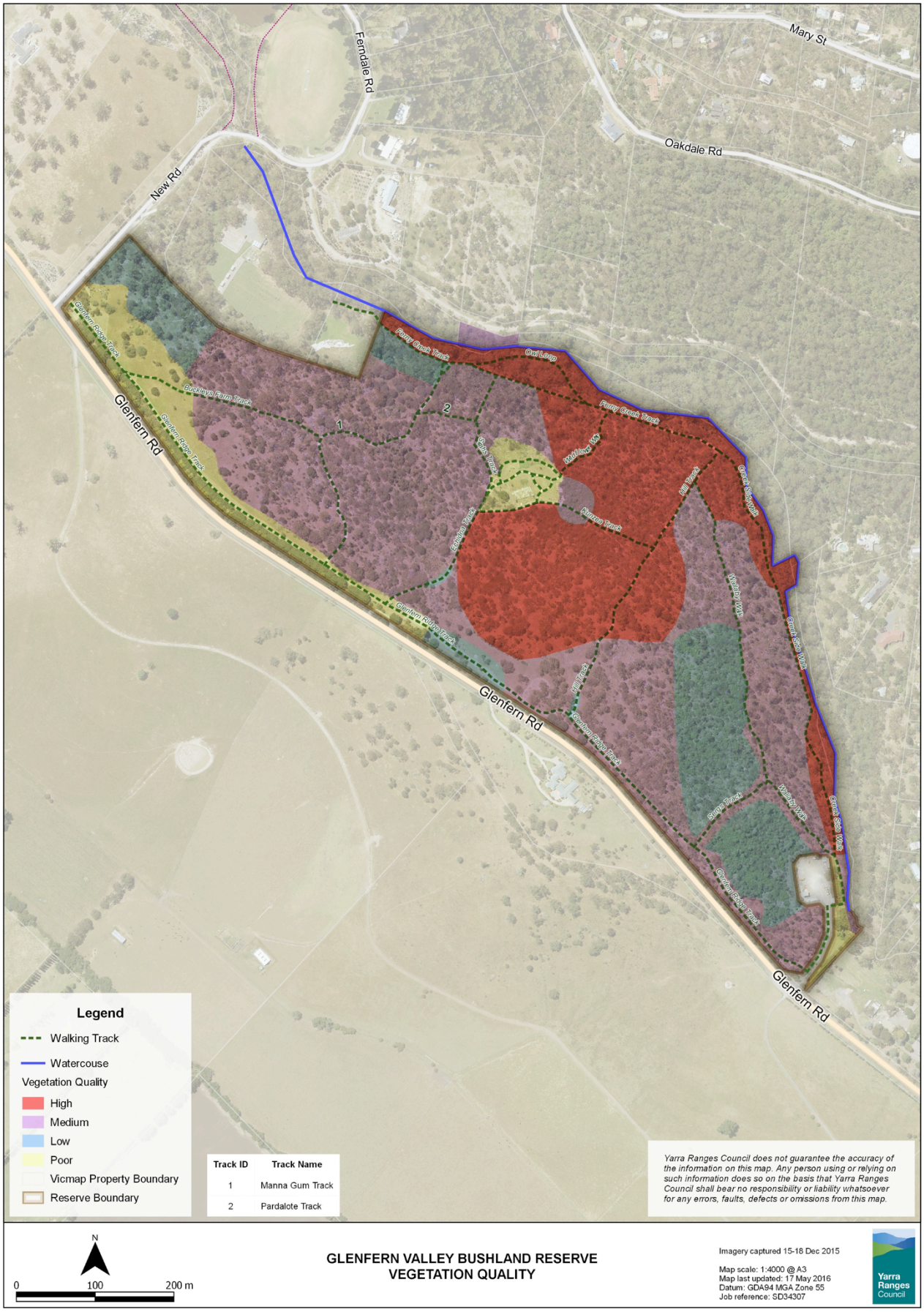


Figure 7: Vegetation quality

The quality of the vegetation can be further improved in most areas, as has already been demonstrated through the successful Boneseed and Sweet Pittosporum elimination programs undertaken by the Friends group in selected areas.

Several overlays apply to the reserve, but not an Environmental Significance Overlay (ESO) (section 1.3). The significance of the reserve's flora and fauna should be recognised with an ESO.

Weeds

Outstanding progress has been made in the reduction of weed infestations since the 2004 management plan was introduced. The extent of major weed infestations in 2004 is illustrated in appendix 7.

Nevertheless, the reserve still has some areas dominated by introduced species. Current management aims to control the growth and spread of weed species, which will help protect native flora and fauna species throughout the reserve, and facilitate the natural regeneration of locally indigenous species.

Progress made by the Friends group and Council has been impressive. Weed management using specialised equipment has been particularly successful including removal of Sweet Pittosporum, and mowing/removal of introduced grass canopy.

Figure 8: Chipping Sweet Pittosporum

Figure 9: Removing introduced grass growth

A large number of introduced species are present. The major woody weeds include species such as Sweet Pittosporum *Pittosporum undulatum*, Sallow Wattle *Acacia longifolia* ssp. *longifolia* and Blackberry Rubus fruticosus, while the dominant herbaceous weeds include Three-corner Garlic

Allium triquetrum, Cocksfoot *Dactylis glomerata*, Cape Ivy *Delairea odorata*, Panic Veldt Grass *Ehrharta erecta*, English Ivy *Hedera helix*, Soursob *Oxalis pes-caprae* and Tradescantia *Tradescantia fluminensis*.

Weed control is essential for protection of biodiversity. It should focus on:

- Relatively intact areas of strategic importance for conservation.
- Strategic highly invasive weeds, e.g. Sweet Pittosporum, wherever they occur. This includes staged removal of Sweet Pittosporum thickets and follow-up revegetation and weed managements when funding can be secured.

Broad area control should be undertaken by contractors using methods proven at the site over the past ten years. Several techniques have been tried in selected sites to determine the presence of indigenous seed-banks, and that weed regeneration was controllable. This included management of chipped material, assessment of decomposition of fallen and upright dead material (including fire-load), and efficiency of techniques at sites with difficult access. The need for re-planting was assessed for each site, especially with regard to success rates, absence of key species and time frames. Remarkable results have been achieved.

Additional techniques include manual removal, selective herbicide application away from sensitive areas, and smothering, burning or scorching weeds. Follow-up herbaceous weed control following woody weed removal is important in the first two years to ensure that exotic grasses and herbs do not increase.

Figure 10: Before and after contract removal of Pittosporum and follow-up weed control

Weed invasion from adjacent roads and private land to the north are an ongoing threat to the reserve.

Melbourne Water land

Melbourne Water commenced a program of weed removal and revegetation in 2015 on land along Ferny Creek leased to the Sherbrooke Archery Club. Weed species to be removed include Boneseed, Sweet Pittosporum, Blackberry and Montpellier Broom. (See Melbourne Water website under 'Ferny Creek weed control and revegetation, Ferntree Gully)'. This will improve natural values adjacent to the reserve.

Local context

Native vegetation within Glenfern Valley Bushlands forms part of an isolated remnant of native vegetation bounded by residential subdivision and pasture, approximately 1 kilometre south of the Dandenong Ranges National Park. Based on DELWP vegetation mapping, the reserve includes about one-third of this remnant vegetation, with most of the remainder occurring on private land to the north of Ferny Creek, where it receives little or no conservation management.

Although the Glenfern Valley isolate is surrounded by residential areas and cleared farmland, it should be viewed in the context of a local patchwork of fragmented native vegetation, with only the Dandenong Ranges National Park to the north and Lysterfield Park to the south being relatively extensive. Glenfern Valley Bushlands contributes to local and regional biodiversity by providing habitat for the flora and fauna it currently supports, and by providing potential or

temporary habitat for species capable of dispersing across the largely cleared surrounding landscape. It is likely to act as a 'stepping stone' between remnants, especially between the Dandenong Ranges NP to the north and Lysterfield Park to the south. Its role as a 'stepping stone' would be particularly important for highly mobile species such as birds and bats. In addition, Ferny Creek not only provides important fauna habitat, but it facilitates the movement (dispersal corridor) of a diversity of terrestrial and aquatic fauna species.

Tree decline

The poor condition of many of the eucalypts within the lower and mid slopes was noted in the previous management plan, as many of the trees were dead or in decline. However apart from a few dead trees below the old quarry, the trees are now in generally good condition.

Possum browsing is currently sustainable. Possums have the potential to become overabundant and damage trees where they lack predator control, but at GVB it is likely that Common Ringtail Possum is being controlled by Powerful Owl and Common Brushtail Possum by Red Fox.

A series of policies has been developed to guide future management and provide a broad basis for management actions.

Management policies: natural values

- *Apply an Environmental Significance Overlay (ESO) to the reserve under Council's planning scheme.*
- *Minimise disturbance to native vegetation, soils and natural drainage. (Disturbance generally promotes weed invasion.)*
- *Retain debris such as large logs, rocks and bark on the ground to provide suitable protection and foraging opportunities for many fauna species.*
- *Ensure that the vegetation and fauna habitat is actively managed for biodiversity conservation and landscape protection.*
- *Continue Council's maintenance fund allocation.*
- *Protect and encourage natural regeneration of quality areas, and keep as weed-free as possible. Natural regeneration is generally preferred over revegetation as this results in authentic recruitment of locally indigenous species.*
- *Ensure that vegetation management programs consider the need to provide ongoing habitat for wildlife.*
- *Ensure that vegetation management is undertaken by qualified and experienced professional personnel or volunteers suitably trained or supervised.*
- *Ensure that high quality areas are not degraded by recreational activities.*
- *Continue to locate tracks away from sensitive areas and fauna habitat.*
- *Continue to discourage dumping of weeds and rubbish along reserve boundaries.*

Management actions: natural values

a. Entire site

1. *Continue to formalise Annual Works Plans in conjunction with Council to prioritise and co-ordinate activities.*
2. *Systematically inspect to monitor weed incursions. Continue to undertake targeted control of woody weeds (e.g. Boneseed and Pittosporum). Follow-up weed control is essential, as Boneseed will regenerate from soil-stored seed for a number of years following eradication of parent plants. Carry out follow-up control prior to seedlings setting seed.*

3. *Maximise the benefit of Council's maintenance budget through judicious annual weed control program by contractors, and dovetailing of their works with that of the Friends Group.*

b. Grassy upper slopes

4. *Slash grassland in the second half of October to reduce weed cover and seed production. Remove slashed material where practicable. Also undertake a second slash in the first half of January following seed-shedding in Kangaroo Grass (Themeda triandra) and Spear Grass (Austrostipa spp.), to promote seed production and germination.*
5. *Consider a trial of low-dose glyphosate/broad leaf herbicide mixture to reduce exotic grasses and herbs.*

c. Modified upper slopes

6. *Slash exotic grassland more frequently than the 'Grassy upper slopes', particularly in winter/spring, to reduce seed production by introduced grasses and reduce the chance for these species to spread into areas of higher vegetation quality. Remove slashed material where practicable.*
7. *Remove cypresses along Glenfern Road as they die and replace with indigenous woodland species planted in groupings simulating natural occurrences. Retain views across the site from viewing points.*

d. Ferny Creek riparian strip

8. *Continue targeted control of woody weeds and highly invasive herbaceous species (e.g. Bridal Creeper, Angled Onion, Tradescantia and English Ivy). Ensure that the removal of woody weeds does not adversely affect the Powerful Owl, or shade-dependent native ferns. Ensure follow-up weed control to deal with introduced species, which re-invade or regenerate from flood events or soil-stored seed.*
9. *Continue to allow natural regeneration in disturbed areas (e.g. following Pittosporum removal). Ensure that weed management is undertaken during this process.*
10. *Allow natural regeneration to continue in higher quality areas.*

e. Specific management units

The Friends group has defined 14 specific management units in the reserve to help plan and implement onsite works (appendix 6). A detailed spreadsheet showing progress for each unit ('works area') is provided on the Friends website.

Actions for these units are as follows.

Management Units 1, 4A and 8 (Entrances and Facilities)

- *Maintain grass with a mowing/brushcutting regime.*
- *Keep plantings as weed free as possible; replant and top up with mulch as required.*
- *Ensure entrances are welcoming, neat and free of rubbish.*

Management Unit 2

- *Refer to Management Actions b. and c. above for grassy and modified upper slopes.*

Management Unit 3

- *Refer to Management Actions b. c. & d. above for grassy and modified upper slopes, and for riparian area.*
- *Monitor/control outbreaks of Spanish Heath, Boneseed, Pittosporum, Kikuyu and Blackberry, and spread of Kunzea.*

Management Units 4 and 5

- *Refer to Management Actions b. and c. above for grassy and modified upper slopes.*
- *Watch for spread of Kunzea into grassy forest and areas improving through "slash and collect" regime.*

- *Protect high quality Valley Grassy Forest from weeds emanating from the quarry site. Work outwards from areas of higher quality and allow indigenous species to naturally regenerate and/or recolonise.*
- *Monitor/control outbreaks of Pittosporum, Boneseed and Sallow Wattle in particular.*

Management Units 6 and 7

- *Continue expansion of Valley Grassy Forest by targeting Pittosporum thicket.*
- *Seek funding for contractors to systematically remove Pittosporum. Allow regeneration where possible, and selectively plant to encourage rehabilitation of areas impacted by removal works.*
- *Expand grassy patches and encourage natural recovery of Yellow Box saplings.*

Management Unit 9

- *Refer to Management Actions d. above for Ferny Creek riparian strip.*
- *Monitor regeneration of areas impacted by Pittosporum removal, and target stumps that are re-sprouting and woody weed seedlings.*

Management Units 10 and 11

- *Refer to Management Actions d. above for Ferny Creek riparian strip.*
- *Protect high quality Valley Grassy Forest from weeds emanating from the quarry site. Work outwards from areas of higher quality and allow indigenous species to naturally regenerate and/or recolonise.*
- *Monitor spread of Kunzea into prime areas and thin if required.*
- *Monitor tree health, e.g. by photographing and recording the condition of selected canopy trees, particularly below the quarry site.*

Management Unit 12

- *Refer to Management Actions b. above for grassy slopes, c. for modified upper slopes, and d. for Ferny Creek riparian strip.*
- *Monitor buffer planting along the Archery Club boundary and assess for replenishment.*
- *Control spread of pasture grasses into higher quality areas.*
- *Monitor/control weed spread from the Archery Club, particularly Buttercup and Ivy.*
- *Consider application of low-dose glyphosate herbicide mixture to reduce exotic grasses (e.g. Yorkshire Fog and Panic Veldt).*
- *Watch for outbreaks of Patterson's Curse and Purple Top Verbena.*

Management Unit 13

- *Continue enhancement works and planting of indigenous species for shade and amenity.*
- *Prevent introduced species from migrating into adjacent bushland (e.g. Hemlock, Blue Periwinkle and Ivy)*
- *Continue mowing and brush-cutting regime for aesthetics and safety. Keep paths weed-free.*
- *Maintain frog pond and surrounds to enhance habitat.*

Management Unit 14

- *Refer to Management Actions d. above for Ferny Creek riparian strip.*
- *Bag any rubbish for collection by Council.*

5.1.2 Fauna

A number of fauna surveys have been undertaken in the reserve. These surveys indicate the high diversity of native species that occur in a range of habitats. There are at least 106 indigenous and

12 introduced recorded species in or immediately adjacent to the reserve. These include at least 13 mammals (11 native), 87 bird species (79 native), six native reptiles and two frog species. Species added recently to the bird list are Lewins Honeyeater and Eastern Whipbird.

A number of additional faunal species recorded (Victorian Biodiversity Atlas) within the local area (five kilometres surrounding the reserve) would also be expected to occupy habitats either as residents or visitors on a regular, irregular and vagrant basis.

The reserve provides suitable habitat for the state significant Powerful Owl (photo, right, *David Moncrieff*) which is a major predator of Common Ringtail Possum and is thus important for canopy tree and ecosystem health. One Platypus has been recorded upstream of Gilmour Park (Doeg in Melbourne Water 1999) in the vicinity of Glenfern Valley, but has not been sighted since.

Members of the Friends group began monitoring butterfly populations in 2014 and recorded 14 species to January 2016:

- Cabbage White
- Caper White
- Australian Painted Lady
- Common Grass Blue
- Green Grass Dart
- Forest Brown
- Blotched Dusky Blue
- Common Brown
- Lilac Grass Skipper
- Marbled Xenica Ringed Xenica
- Long-tailed Pea Blue
- Shouldered Brown
- Barred Skipper

Habitats

The reserve supports several fauna habitat types including Ferny Creek, Riparian Forest, Grassy Woodland, planted native and exotic vegetation, weed thickets and predominantly introduced vegetation.

The diversity of habitats, which vary in vegetation structure and composition, plays an important role in providing habitat for numerous native fauna species. For example, the relatively closed canopy along Ferny Creek provides suitable foraging and nesting habitat for a variety of bird species such as honeyeaters, whistlers, thornbills and fantails.

The presence of large remnant Manna Gums, many of which possess hollows of varying size, is also an important habitat feature for native fauna species including arboreal mammals (Common Ringtail and Brushtail Possum) and insectivorous bats. Hollows also provide nesting and roosting sites for native birds such as owls, parrots, cockatoos and ducks. Grassy Woodland located up slope from the creek typically comprises a dense sward dominated by native grass and sedge species, while fallen timber is also found scattered throughout, which provides habitat for a variety of native reptiles (lizards, snakes) and frogs (Common Froglet, Brown Tree Frog).

Areas within the reserve contain high levels of weeds and therefore, in many instances, possess relatively low habitat value for fauna. Nevertheless, numerous fauna species, particularly smaller passerine species (wrens, thornbills and firetails), utilise weed thickets for foraging and nesting purposes. However, over time, weedy areas should continue to be gradually removed and replaced with locally indigenous species (preferably through natural regeneration), as this will provide additional habitat for a greater diversity of native fauna species. Furthermore, the complexity of habitat features within the reserve should be maintained and where possible enhanced, as this will benefit a wide range of fauna species.

Actions related to indigenous fauna are included under vegetation, above.

Pest animals

Currently, introduced species such as rabbits, foxes and cats (domestic and feral) are likely to compete with native wildlife for habitat resources within the reserve, or directly predate on native fauna. Unrestrained dogs are likely to adversely affect wildlife in the reserve, and birds such as the Common Myna displace native species. Currently, introduced species within the reserve are not subject to control programs. Any predator control requires careful consideration.

In the absence of the native ground predators Dingo, Lace Monitor and Spot-tailed Quoll, the Red Fox appears to function as a surrogate ecosystem ground predator and is now important if not essential in regulating the herbivores European Rabbit, Common Brushtail Possum and Black Wallaby (Yugovic 2015). Foxes and wallabies appear to be in balance with stable populations at GVB, as with numerous other remnants on the fringe of Melbourne.

The RBG Cranbourne experience has shown that an overabundance of Black Wallaby without foxes is inevitable and adverse to biodiversity. On the other hand the wallaby is important in preventing excess shrub cover which would be detrimental to the ground layer fauna and fauna. At GVB, wallaby numbers need to be stable and sustainable and should be monitored.

Any ecological relationship between Red Fox and Powerful Owl should be looked for, especially any sign of predation on owl fledglings, including feathered remains, but bearing in mind that over 90% of owl fledglings will die in a stable owl population and predation is likely to be a significant factor. Evidence of Powerful Owl as prey for foxes may be obtained from feather remains on site.

Management actions: fauna

11. Monitor threats from pest animal species, particularly on any identified site-threatened indigenous flora or fauna population, and undertake control programs where appropriate in conjunction with DELWP and adjacent landowners.

5.1.3 Landscape values

The reserve has moderate landscape values with attractive views over remnant bushland, and more intimate views near the creek and in relatively intact woodland areas. Views over the site provide an interesting contrast with views from Glenfern Road to the south over semi-developed rural landscapes. The Glenfern Valley Bushlands and adjacent Lysterfield Valley landscapes are classified by the National Trust of Australia (Victoria).

The appearance of the reserve has been enhanced by the work of the Friends group and Council including rubbish and weed removal, regulation of vehicle access, track improvements and new furniture, signs and graphics (photo, right).

All future works should complement the semi-natural setting.

There are opportunities to further improve the appearance of adjacent areas, particularly the Archery Club and the small depot, which detract from the areas' natural values.

Management policies and actions: landscapes

12. Ensure that all management activities enhance landscape values and design future facilities and structures to complement the site's bushland setting.

13. In conjunction with Melbourne Water, encourage the Archery Club to minimise adverse visual impacts on the reserve.

5.1.4 Soils

The friable, free-draining red soil on the slopes of the reserve is derived from the Devonian volcanic rock that forms the Dandenong Ranges (Ferny Creek Rhyodacite), while the Ferny Creek floodplain supports deep, fertile soil developed on Quaternary alluvium in the western part of the reserve (Ringwood Sheet, Geological Survey of Victoria 1970). The floodplain narrows and

effectively disappears in the eastern area, due to the location of the reserve near the headwaters of the creek. Minor soil erosion is occurring in some areas, e.g. along steep creek banks.

5.1.5 Water quality

Despite the attractive appearance of Ferny Creek in the reserve, water upstream of the reserve has been identified as of poor quality. Key risks for waterway health include urban stormwater, barriers to migration of aquatic life, and weeds. http://yarraandbay.vic.gov.au/report-card/dandenong/dafer0021, and http://waterwatchmelbourne.org.au/content/your_local_waterway/eastern_catchments/dandenong_catchment.asp

The Waterwatch program is involved in waterway monitoring and improved management and may assist the Friends in their activities associated with the Ferny Creek environs. The Friends group actively removes litter from the creek.

Management actions: water quality

14. Continue ongoing litter removal along Ferny Creek.

15. Review opportunities to participate in Waterwatch activities.

5.1.6 Fire

Fire management in the reserve is a complex issue, owing to a number of factors, including: (a) the need to protect life and property from catastrophic fire, through fuel reduction burning and fire suppression activities; (b) the desire to maintain species diversity; and (c) the need to manipulate habitat for particular animal species. Within the reserve, each of these factors needs to be considered prior to establishing a fire management plan or conducting a prescribed burn.

Most of the reserve is thought to have been burnt in 1962 and 1980.

The lack of recent fire has led to the development of a fairly dense understorey in some areas. An ecological burn would therefore be beneficial, to promote the indigenous ground layer flora and fauna, eliminate mature woody weeds, reduce fuel levels (and subsequently the overall fire hazard) and provide an opportunity for the Friends group to study and monitor plant regeneration following fire.

Ideally, landscapes should be burnt in a mosaic fashion, with the season, intensity, frequency and extent of fires being variable across the landscape. Owing to practical limitations and the size of the reserve, this would not be feasible. However, with the cooperation of the local CFA, an ecological burn in the reserve is likely to provide worthwhile benefits.

Some guidelines for an ecological burn within the reserve include:

- Conducting the burn within the Valley Grassy Forest, preferably near the centre of the reserve, across the boundary between the high quality and medium quality vegetation. This would enable the response of both indigenous and introduced species in two different environments to be monitored post-fire by the Friends group.
- Conducting the burn in late summer/early autumn when most species have finished flowering and set seed (a spring burn may kill some plants before seed-set).
- Conducting rigorous post-fire weed control, whereby seedlings of introduced species with large soil seed banks (e.g. Boneseed) are removed prior to the onset of seed-set.

Management and fire access is discussed in section 5.2.1. Issues related to fire and public safety are discussed in section 5.2.4.

Management actions: fire

16. In consultation with the CFA, plan for ecological burning to enhance the site's natural values.

5.1.7 Cultural heritage

There are no known sites of cultural significance in the reserve and no detailed documentation on Aboriginal life in the area. Any Aboriginal sites are protected under Commonwealth and State legislation; the Office of Aboriginal Affairs Victoria can provide advice if any potential sites are

identified. Acknowledgment of Aboriginal people is provided in graphics and signs near the main entrance.

The reserve illustrates changing attitudes to natural areas with exploitative uses being replaced by activities aimed at preserving natural and landscape values.

The recent history of the reserve is outlined in appendix 1.

5.2 Goal 2: Provide safe and compatible recreation

The reserve provides an attractive setting and basic facilities for informal recreation activities. An extensive network of tracks provides access throughout the reserve.

5.2.1 Vehicle access and parking

Public access

Perimeter fencing installed after 2004 has regulated vehicle access, markedly reducing damaging impacts.

Small parking areas at the main entrance on Glenfern Road, at the corner of New Road, and near the southeast corner provide adequately for visitor parking. The carpark inside the main entrance is locked most of the time to minimise vandalism or rubbish dumping, but can be opened for appropriate activities, e.g. working bees.

Management access

Ongoing vehicle access is required to parts of the reserve for management and CFA vehicles. Fire access tracks and access points need to continue to meet CFA standards.

Management actions: access

17. *Provide for and maintain management and fire access tracks as agreed with the CFA.*

5.2.2 Informal recreation

The reserve is best suited to low impact recreational activities to help ensure protection of natural values.

Walking, picnicking, low-key cycling, sightseeing and nature appreciation are compatible uses. Horse riding, trail and mountain bike riding and sporting activities are likely to have unacceptable impacts, and are adequately catered for elsewhere in the region.

Facilities

The current facilities, comprising picnic tables, seats, signs, leaflet boxes and an information shelter, are appropriate for the reserve. Provision of toilets is not appropriate because of maintenance requirements and Council policy not to provide stand-alone toilets in remote locations. Additional tables, seats and interpretive information could be provided if visitor numbers increase.

Dogs

Dogs can adversely affect wildlife and other users, particularly when let off leads. Ongoing effort is needed to encourage dog-owners to act responsibility. Access of dogs to sensitive areas could be limited, e.g. by installing signs and spring-loaded gates.

Quarry area

The former quarry area is being developed for low-key recreation and education, and has the potential to become an attractive focal point in the reserve. Additional tree cover and shade would complement existing planting and landscaping and the development of a small amphitheatre and wetland.

Management actions: recreation

18. *Continue to provide for ongoing low-impact uses including walking, picnicking, low-key cycling on surfaced tracks, sightseeing and nature appreciation.*
19. *Maintain existing facilities and consider providing additional low-key facilities if use increases.*
20. *Require dogs to be on leads at all times and consider excluding dogs from significant conservation areas. Utilise Council authorised officers.*

21. *Continue to enhance the former quarry area to create an attractive focal point in the reserve.*

5.2.3 Walking tracks

The reserve has an extensive track network providing a range of walking opportunities. Tracks range from gravelled management vehicle tracks to slashed grass tracks and narrow earth 'goat tracks'. It is desirable to maintain this range of walking experiences including loop walks within the reserve, and links to adjacent areas.

There are opportunities to promote loop walks in the reserve incorporating tracks along Ferny Creek and linking to Gilmour Park. There is also a proposal to construct a track beside New Road providing a link between Glenfern Road and the Ferny Creek corridor.

The existing informal track from the reserve along Ferny Creek, near the archery club, to Gilmour Park is a potentially important link. Sections of the track could be realigned close to the creek, where impacts are acceptable. Selected planting to screen archery structures would be desirable, and improved safety signage. This work would require the support of Melbourne Water and the archery club (section 5.2.5).

Gravel track surfaces in the reserve are required to meet CFA standards, but earthen tracks are appropriate in other areas where erosion is not a problem. Introduced gravel can alter the micro-ecology of an area, lessen the visitor experience, and reduce the geological integrity of the reserve. Clean tree mulch is the preferable benign biodegradable alternative material to gravel.

Management actions: tracks

22. *Maintain the existing walking track network.*
23. *Sign and promote loop walks and tracks in the reserve providing good access for people with limited mobility.*
24. *Work with Melbourne Water and the archery club to realign and enhance the walking track along Ferny Creek linking the reserve with Gilmour Park. Include carefully sited track realignment closer to the creek, limited screen planting and fencing to regulate access, and safety signs. Review opportunities to construct a track beside New Road.*
25. *Work with Melbourne Water to provide one or two crossings at Ferny Creek to facilitate walk-in access to the reserve, and walking access along Ferndale Road.*
26. *Support opportunities to provide walking access to open space and residential areas east of the reserve.*
27. *Prevent the importation of foreign geological material as far as practicable.*

5.2.4 Safety

The safety of visitors and other people on-site is a high priority. Possible risks identified include fire, the creek, falling limbs, snakes, steep and uneven ground, and archery activities (section 5.2.5).

Action is needed to minimise these risks with emphasis placed on fire safety and regular inspection and maintenance. Adequately maintained fire access tracks are important to meet the objectives of Council's Annual Fire Readiness program (section 5.2.1).

Management actions: safety

28. *Ensure compliance with Council risk management requirements including regular inspection of tracks and facilities and timely action to deal with identified hazards.*
29. *Include evacuation procedures in working bee protocols.*
30. *Maintain up to date fire plans for the area in conjunction with the CFA as part of Council's Annual Fire Readiness program.*
31. *In conjunction with the CFA, undertake fuel load assessments at approximately 5-year intervals.*
32. *Do not permit open fires in the reserve.*
33. *Liaise with the archery club and Melbourne Water to manage the risk of arrows entering the reserve.*

5.2.5 Archery club activities

The archery club – Sherbrooke Archers Inc. – has been actively using land adjacent to New Road and Ferny Creek for over 30 years. The land is in a freehold retarding basin owned by Melbourne Water. The club has a lease with Melbourne Water.

Weed control and revegetation works have helped improve the quality of vegetation in the area and further work should be supported. The archery boundary has been redefined and targets moved from the area near Ferny Creek in the last 10 years, providing opportunities to provide public access along the creek. Arrows have been found in the Reserve from time to time, indicating the need for ongoing safety protocols. Improved safety signs and other actions are proposed (section 5.2.3, 5.2.4).

5.3 Goal 3: Involve the community in the reserve

5.3.1 Community involvement

The Friends group maintains an excellent website, providing information on management, flora and fauna, education, recreation and community involvement in the reserve: http://www.glenfernvalleybushlands.org.au/.

A regular newsletter and on-site events and activities help to maintain and promote interest. The group also maintains links with a range of schools, groups and institutions and promotes reserve activities at community functions.

The Victorian Environment Friends Network sets out common objectives for Friends groups:

- Providing support for the reserve …
- Assisting with special projects selected by the Friends in consultation with the appropriate management authority.
- Bringing into contact people with a common interest in the reserve …
- Fostering public awareness of the reserve …
- Supporting the effective management of native flora and fauna …

The GVB Friends meets all these objectives and has been successful in raising community interest.

Ongoing training and education of members of the Friends group is desirable to develop skills in conservation, monitoring, interpretation etc. Opportunities include short courses and onsite programs.

There are challenges in increasing community involvement in management and use of the reserve. Many people lead busy lives and have to balance work, family, leisure and volunteer commitments – the latter sometimes making way for other activities.

Continuing success of the Friends group is essential for effective long-term management of the reserve. Current members of the Friends group recognise that reinvigoration through new members, new leadership, and new ideas is important to ensure that the great progress made since 2004 is reinforced and extended. The group could attract additional community members, enhance skills, and allocate responsibility for some of the tasks set out in this plan to individual members.

Opportunities to increase involvement include a wider range of on-site activities and further development of social media to broaden publicity about the reserve. The carpark off Glenfern Road provides a useful area for small-scale community activities and the quarry area could become a focal point for compatible activities in an outdoor setting.

A search for 'Glenfern Valley Bushlands' on the Yarra Ranges Council website did not locate any useful information. There are opportunities to promote the reserve on the site and through Council outlets.

5.3.2 Interpretation and education

Interpretation is an informal educational activity designed to increase community understanding, appreciation and enjoyment of natural and cultural features.

Some interpretation is provided in the reserve including introductory sessions with visiting groups, brochures and an information/interpretation shelter.

Relevant themes to be interpreted include changing community attitudes to conservation and the environment, the return of indigenous flora and fauna to the reserve, the distribution of different vegetation

communities, and the need for ongoing management.

Opportunities for additional interpretation include further guided walks, and on-site signs and smart phone information telling stories related to changes in the reserve. Ongoing involvement of the community in the development of interpretive services is desirable.

Additional education activities could be encouraged particularly relating to flora and fauna and issues such as land and vegetation management. Local schools could be increasingly involved in revegetation, environmental monitoring and investigation of impacts on the reserve.

5.3.3 Promotion, activities and events

The health benefits of parks, reserves and open space use are well established. There are opportunities to promote the reserve more actively through newspapers, Council publicity, (including the Council website), social media, stalls at events, etc. and encourage increased use for compatible activities and events. Continuation of the Friends website and newsletter, and the events and activities program, is highly desirable.

The Friends and Council have good relationships with stakeholders of the reserve, and it is desirable to continue to strengthen these.

Management actions: community

34. *Provide ongoing support and training for the Friends group and other community volunteers.*
35. *Continue to actively seek new members for the Friends group, enhance skills and encourage members to take on leadership roles.*
36. *Use websites, social media, local papers, newsletters, Council publicity, events and other means to provide information and encourage appropriate use and appreciation of the reserve.*
37. *Encourage volunteers to continue to assist with the provision of interpretive and educational services.*
38. *Encourage schools and other organisations to continue to undertake restoration, monitoring and related activities in cooperation with the Friends and Council.*
39. *Continue to build strong relationships with Melbourne Water, the CFA and other stakeholder groups.*

5.4 Goal 4: Ensure sound and sustainable management

5.4.1 Management responsibility and reservation

The Yarra Ranges Council is the reserve's Committee of Management responsible for management under the *Crown Land (Reserves) Act 1978* (see section 2.4).

Day to day management is shared between the Council and the Friends of Glenfern Valley Bushlands. The Friends group undertakes or oversees a substantial proportion of tasks including weed control and revegetation work, mowing, provision and maintenance of basic facilities, rubbish collection, and the facilitation of a range of community and educational activities. (See the Friends' website: http://www.glenfernvalleybushlands.org.au/.)

Council undertakes some track maintenance and slashing and is consulted over major issues such as fire protection, new works, and compliance.

This arrangement has been very successful, but there is no formal agreement specifying the roles of the two organisations. An agreement is desirable to clarify responsibilities and ensure clear accountability. This management plan could be a key reference document in this agreement.

5.4.2 Management resources

Management and financial resources available to manage the reserve are summarised in section 2.4.

5.4.3 Sustainable management

Sustainable management principles applied to the reserve include minimising use of energy and non-renewable resources, recycling, having no adverse impact on ecological processes and maintaining compatible recreational and educational opportunities.

Energy use in the reserve is low and there are few opportunities to reduce this further. Continuing to encourage visitors to take their rubbish home and recycle it will minimise resources needed to handle rubbish.

Using local gravel for track surfacing is preferred to limit impacts on natural values in the reserve.

5.4.4 Leases and boundary issues

- The Melbourne Water retarding basin and adjacent bushland northwest of the reserve contribute to the natural values of the area. A management boundary between the basin and the reserve has been agreed between Council and Melbourne Water to help minimise risks to people walking near the archery area (section 5.2.5).
- There are opportunities to integrate management of the GVB reserve and the Forest Park Reserve to the northeast. This is likely to enhance environmental values in the Reserve.
- A management agreement covering land north of Ferny Creek, adjacent to the reserve, could result in improved environmental management. A small parcel of Council land on the north side of the creek has recently been adopted as part of the Reserve, now designated Management Unit 14.
- An adjoining owner has encroached on 780 square metres of land along the southeast boundary.

5.4.5 Performance criteria, monitoring and review

Effective management involves the monitoring of relevant performance criteria and ongoing review of plan implementation, future strategies and actions. Simple indicators should be monitored to assess financial performance and changes in environmental values and visitor use and satisfaction.

Suggested broad indicators are:

Overall

- Staged implementation of actions in the management plan
- Effectiveness of cooperation between Council and the Friends group

Financial

- Adequacy of resources to provide effective management
- Grants and sponsorship received

Environmental

- Improvements in indigenous vegetation
- Reductions in invasive weeds including a reduction in woody weed cover in the reserve to <1% by 2025
- Visitor and management impacts on soils and vegetation

Visitors and facilities

- Increase in compatible community use
- Adequacy of access and visitor facilities
- Visitor satisfaction with facilities and presentation of the reserve

Management actions: management

40. *Review opportunities to improve management arrangements for land adjacent to the reserve.*
41. *Continue annual meetings between the Council and Friends group to review progress in implementing this plan, and to agree annual programs and budgets. Continue quarterly meetings to review management tasks.*
42. *Continue to actively seek grants, sponsorship and other resources to support ongoing management of the reserve.*
43. *Review this plan and update as required by 2025.*

6 Implementing the plan

6.1 Priority actions and responsibilities

Major actions, responsibilities and priorities are set out in table 1. **Note that additional details for some actions are provided in section 5.** *Management policies* are generally not listed in the table.

The priorities listed are to be used to guide the development of annual programs.

Table 1: Priority action program

Goal	*Action (not in priority order)*	Respon'y *	Est. cost **	Priority ***
5.1 Protect and enhance natural values	***a. Entire site***			
	1. Continue to formalise Annual Works Plans in conjunction with Council to prioritise and co-ordinate activities.	Friends	-	Ongoing
	2. Systematically inspect to monitor weed incursions. Continue to undertake targeted control of woody weeds (e.g. Boneseed and Pittosporum). Carry out follow-up control prior to seedlings setting seed.	Friends, YRC	$$$	Ongoing
	3. Maximise the benefit of Council's maintenance budget through judicious annual weed control program by contractors, and dovetailing of their works with that of the Friends Group.	Friends	$$	Ongoing
	b. Grassy upper slopes			
	4. Slash grassland in the second half of October to reduce weed cover and seed production. Remove slashed material where practicable. Also undertake a second slash in the first half of January.	YRC	$$	Ongoing
	5. Consider a trial of low-dose glyphosate/broad leaf herbicide mixture to reduce exotic grasses and herbs.	Friends	$	●●
	c. Modified upper slopes			
	6. Slash exotic grassland more frequently than the 'Grassy upper slopes', particularly in winter/spring, to reduce seed production by introduced grasses. Remove slashed material where practicable.	YRC	$$	Ongoing
	7. Remove cypresses along Glenfern Road as they die and replace with indigenous woodland species planted in groupings simulating natural occurrences. Retain views across the site from viewing points.	YRC	$ + removal costs	●●
	d. Ferny Creek riparian strip			
	8. Continue targeted control of woody weeds and highly invasive herbaceous species (e.g. Bridal Creeper, Angled Onion, Tradescantia and English Ivy). Ensure follow-up weed control to deal with introduced species.	Friends	$	Ongoing
	9. Continue to allow natural regeneration in disturbed areas (e.g. following Pittosporum removal). Ensure that weed management is undertaken during this process.	Friends	$	Ongoing
	10. Allow natural regeneration to continue in higher quality areas.	Friends	-	Ongoing
	e. Specific management units			
	See management actions in 5.1.1 for details of specific actions for each unit. These actions are largely the Friends responsibility.	Friends	$$	Ongoing
	Fauna			

Goal	*Action (not in priority order)*	Respon'y *	Est. cost **	Priority ***
	11. Monitor threats from pest animal species, particularly on any identified site-threatened indigenous flora or fauna population, and undertake control programs where appropriate in conjunction with DELWP and adjacent landowners.	YRC, Friends	$	Ongoing
	Landscape values			
	12. Ensure that all management activities enhance landscape values and design future facilities to complement the site's bushland setting	Friends, YRC	-	Ongoing
	13. In conjunction with Melbourne Water, encourage the Archery Club to minimise adverse visual impacts on the reserve.	YRC	-	●●
	Water quality			
	14. Continue ongoing litter removal along Ferny Creek.	Friends	-	Ongoing
	15. Review opportunities to participate in Waterwatch activities.	Friends	-	●
	Fire			
	16. In consultation with the CFA, plan for ecological burning to enhance the site's natural values.	YRC, Friends	$	●●
5.2 Provide safe and compatible recreation opportunities	*17. Provide for and maintain management and fire access tracks as agreed with the CFA.*	YRC	$$	Ongoing
	18. Continue to provide for ongoing low-impact uses including walking, picnicking, low-key cycling on surfaced tracks, sightseeing and nature appreciation.	Friends	$	Ongoing
	19. Maintain existing facilities and consider providing additional low-key facilities if use increases.	Friends	$	Ongoing
	20. Require dogs to be on leads at all times and consider excluding dogs from significant conservation areas. Utilise Council authorised officers.	YRC	$	Ongoing
	21. Continue to enhance the former quarry area to create an attractive focal point in the reserve.	YRC, Friends	$$$	●●●
	22. Maintain the existing walking track network.	Friends, YRC	$	Ongoing
	23. Sign and promote loop walks and tracks providing good access for people with limited mobility	Friends	$	●●
	24. Work with Melbourne Water and the archery club to realign and enhance the walking track along Ferny Creek linking the reserve with Gilmour Park. Include carefully sited track realignment closer to the creek, limited screen planting and fencing to regulate access, and safety signs. Review, with Knox City Council, opportunities to construct a track beside New Road.	Friends, YRC	[MW]	●●●
	25. Work with Melbourne Water to provide one or two crossings at Ferny Creek to facilitate walk-in access to the reserve, and walking access along Ferndale Road.	Friends, YRC	[MW]	●●●
	26. Review/implement opportunities to provide walking access to open space and residential areas east of the reserve.	YRC	$$$	●●●
	27. Prevent the importation of foreign geological material as far as practicable.	YRC, Friends	-	Ongoing
	28. Ensure compliance with Council risk management requirements including regular inspection of tracks and facilities and timely action to deal with identified hazards.	YRC, Friends	-	Ongoing
	29. Include evacuation procedures in working bee protocols.	Friends	-	●●●
	30. Maintain up to date fire plans for the area in conjunction with the CFA as part of Council's Annual Fire Readiness program.	YRC	-	Ongoing

Goal	*Action (not in priority order)*	Respon'y *	Est. cost **	Priority ***
	31. In conjunction with the CFA, undertake fuel load assessments at approximately 5-year intervals.	YRC	$	Ongoing
	32. Do not permit open fires in the reserve.	YRC	-	Ongoing
	33. Liaise with the archery club and Melbourne Water to manage the risk of arrows entering the reserve.	YRC	-	Ongoing
5.3 Involve the community in the reserve	*34. Provide ongoing support and training for the Friends group and other community volunteers.*	YRC	$	Ongoing
	35. Continue to actively seek new members for the Friends group, enhance skills and encourage members to take on leadership roles.	Friends	-	Ongoing
	36. Use websites, social media, local papers, newsletters, Council publicity, events and other means to encourage appropriate use and appreciation of the reserve.	Friends, YRC	$	Ongoing
	37. Encourage volunteers to continue to assist with the provision of interpretive and educational services.	Friends	-	Ongoing
	38. Encourage schools and other organisations to continue to undertake restoration, monitoring and related activities in cooperation with the Friends and Council.	Friends	-	Ongoing
	39. Continue to build strong relationships with Melbourne Water, the CFA and other stakeholder groups.	Friends, YRC	-	Ongoing
5.4 Ensure sound and sustainable management	*40. Review opportunities to improve management arrangements for land adjacent to the reserve.*	YRC, Friends	-	●●
	41. Continue annual meetings between the Council and Friends group to review progress in implementing this plan, and to agree annual programs and budgets. Continue quarterly meetings to review management tasks.	Friends, YRC	-	Ongoing
	42. Continue to actively seek grants, sponsorship and other resources to support ongoing management of the reserve.	Friends		Ongoing
	43. Review this plan and update as required by 2025.	Friends, YRC	$$	●

* Friends: Friends of Glenfern Valley Bushlands, YRC: Yarra Ranges Council, MW: Melbourne Water

** $ = < $2500, $$ = $2500-10,000, $$$ = > $10,000.
Assumes volunteer labour available to assist with tasks including weed control, revegetation and rubbish removal.
Indicative cost generally does not include Council staff costs or ongoing (recurrent) tasks such as maintenance of visitor facilities.

*** ●●●: High (within 1-2 yrs), ●●: Medium (within 2 – 5 yrs), ●: Low (3 – 10 yrs).

Appendix 1: Chronology of the reserve

Notes prepared to provide an overview of the history of the reserve.
Based on sources provided by DSE (now DELWP) and the Friends Group.

Date	Information /Activity	Source*
1900s	Land privately owned. Part of area cleared for dairy farming. Prunus, hawthorn and roses remain from homestead site near corner of New Road and Glenfern Road.	3
1972	Letter from SRWSC to Albion Reid PL indicating support for extraction from Glenfern Rd quarry.	1
1973	Agreement between SRWSC and Albion Reid for quarrying of land.	1
1973	Council report suggests use of area for passive recreation including water features, fauna park, kiosk, barbecues and revegetation	1
1973	Shire drawing shows proposed Archery area and DVA retarding basin landscaping (Gilmour Park)	1
1977-87	Land owned by Albion (Boral) Quarries. Rock quarried for short period	3
1984	Reserve burnt except New Rd area	2
1986	Shire letter to Bayview Quarries refers to proposed transfer of land to government for open space/recreation. Proposes replanting of area in accord with landscape plan.	1
1986	Shire indicates interest in managing area for public purposes	1
1986	Shire directs Bayview Quarries to remove waste material (area used as 'Junk Yard').	1
1986	CFL notes indicate Boral may not have to undertake rehabilitation works	1
1987	Council supports management by CFL; is strongly opposed to trail bike riding in area.	1
1987/88	Land surrendered by Bayview Quarries to Crown. Formalised 8/88. Land contained in F.C.T Vol 8333 Fol 079 and F.C.T Vol 8116 Fol 814	1
1988	Council considering use of part of site for oval and sports stadium	1
1997	NRE assessment of area discusses issues and identifies upper part of area as surplus.	1
1998	Private subdivision proposal identifies areas suitable for development.	1
1998	NRE notes that area is becoming degraded. Originally acquired for regional open space but Parks Victoria and Shire not interested in management.	1
1999	Proposal by NRE to sell 16 ha of land above 155m contour – assessed as surplus.	1
1999	Council prefers all or part of area to be retained for public use. Further subdivision not supported. (Did not proceed because of community concerns.)	1
2001 (Aug)	Proposal to establish 100 acre park and form Friends group.	1
2001 (Sept)	Public meeting supported preservation of land – about 80-100 attended	1
2001	Friends of Glenfern Valley Bushlands formed and began extensive rehabilitation program	3

2002 (Feb)	Community and information day in reserve	1
2002 (March)	$3000 being spent by NRE on rubbish removal and weed control	1
2002 (May)	NRE works program prepared – costed at $10,000 plus Management Plan and Friends in-kind support. Includes details of weed control etc.	1
2002 (May)	Detailed paper to Council sets out options for area. Includes costed works program. Land zoned Public Park and Recreation Zone. Overlays apply?	1
2002 (July)	Application for NHT funding ($7000).	1
2002 (Sep)	NRE proposal estimates costs for priority works at $20,000 (fencing, weed control, rubbish removal, signs).	1
2002 (Dec)	Stated that DPI and Shire of Yarra Ranges each to contribute $50,000 for mgt plan and site management. Earlier notes indicate $20,000. Minister Garbutt had visited site and supported improved management.	1
2003 (June)	Management Plan commissioned by DSE and Shire of Yarra Ranges (completed 2004)	1
2004 (April)	Reservation of the land recognised with an opening ceremony by the Minister for Environment, the Honourable Mary Delahunty	3
2004-15	Active management by the Friends and Yarra Ranges Council substantially enhancing natural values and providing for informal recreation.	3
2015	Preparation of new management plan commenced.	3

Sources

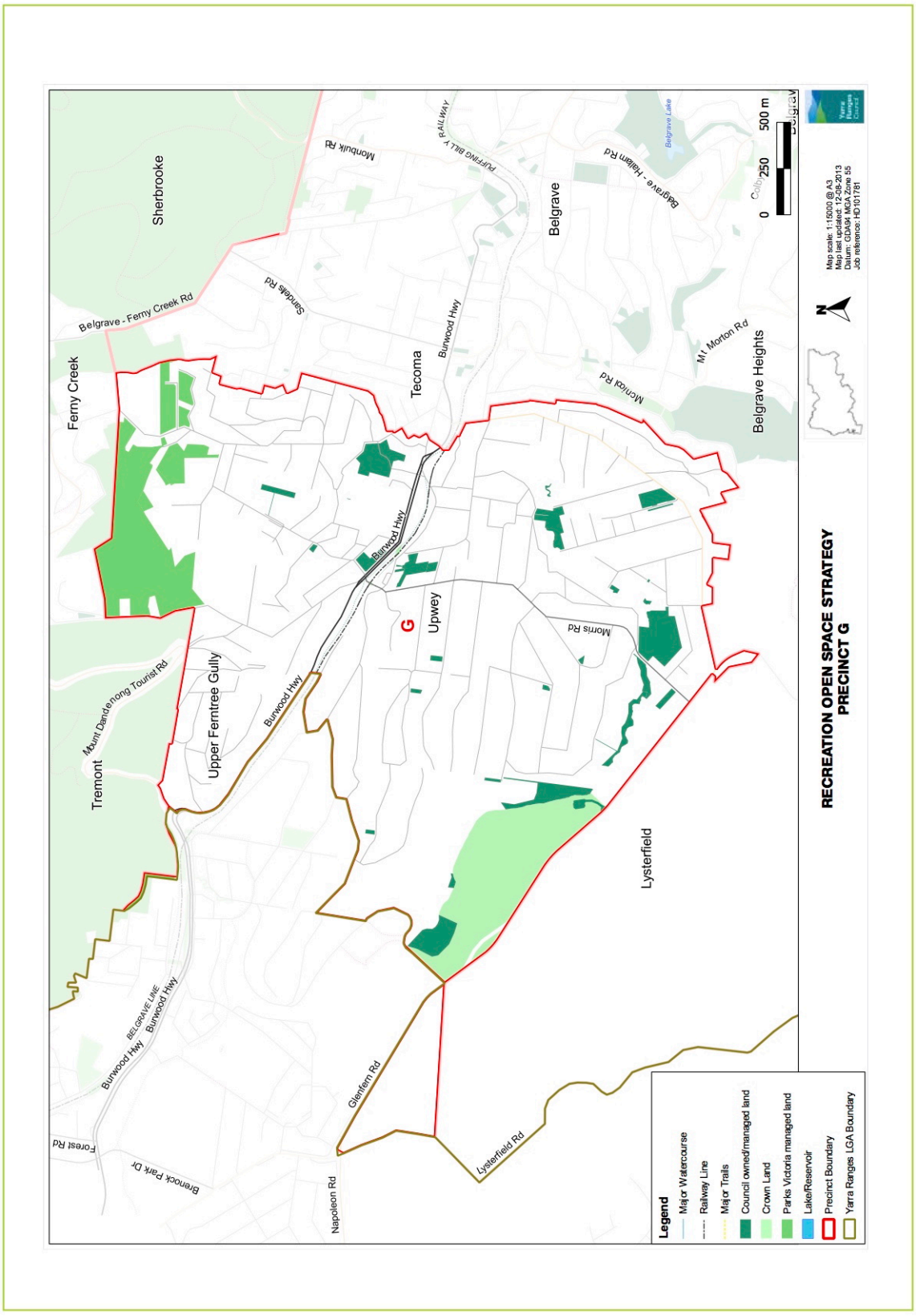
1 DSE (now DELWP) Glenfern Road files (Box Hill office)

2 CFA: Graham Brew, Peter Hall, 4-7-03

3 GVB website (sourced 24 November, 2005)

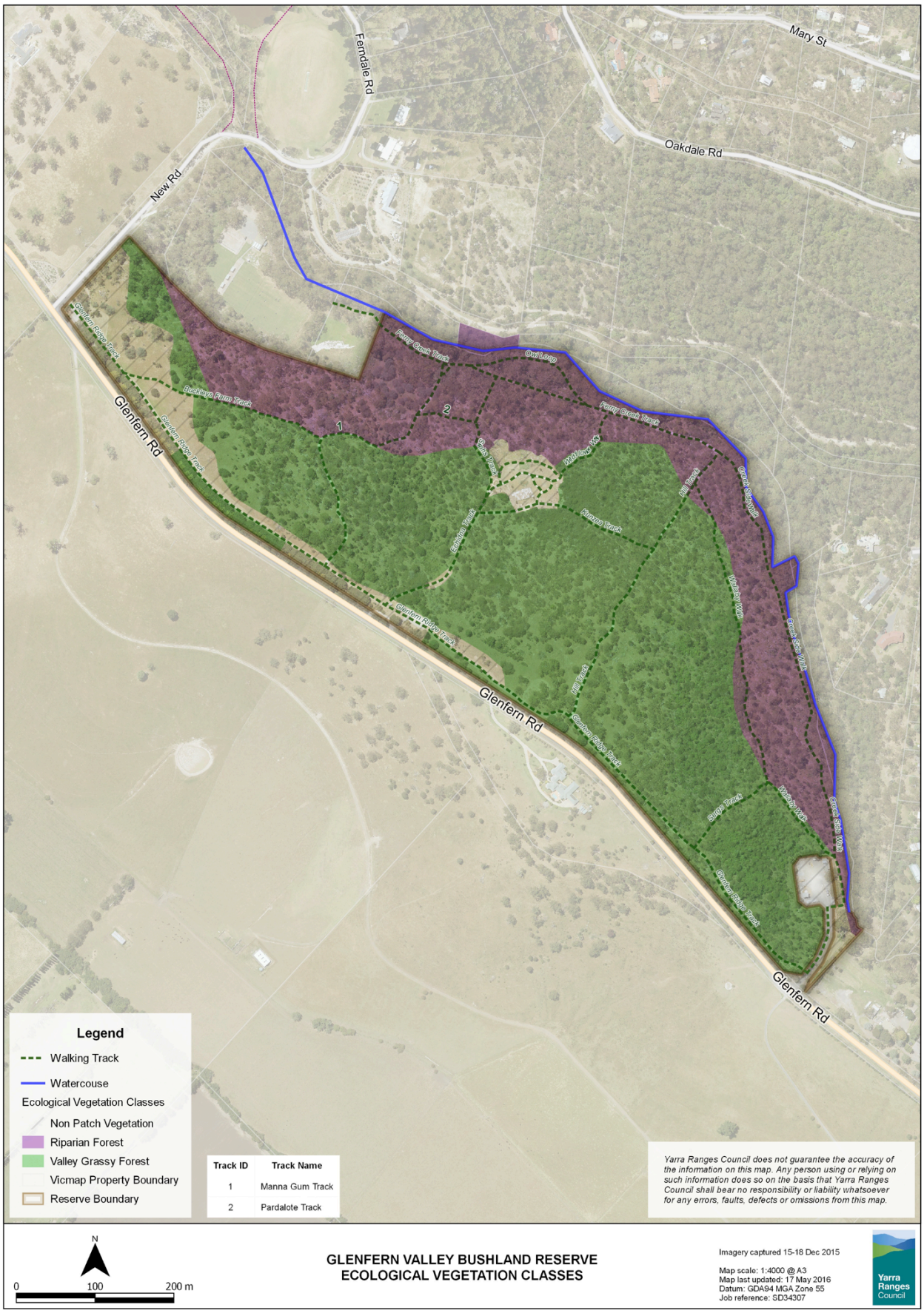
Appendix 2: Map of region

Source: Yarra Ranges Council Recreation Open Space Strategy, 2013

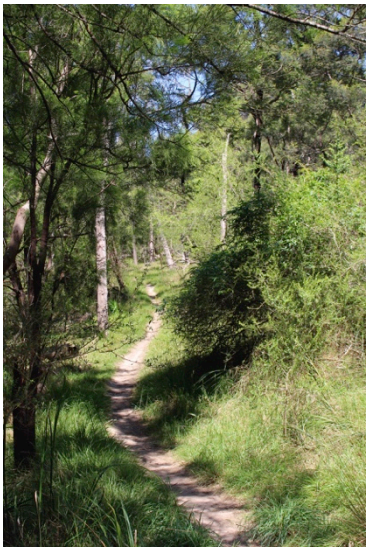
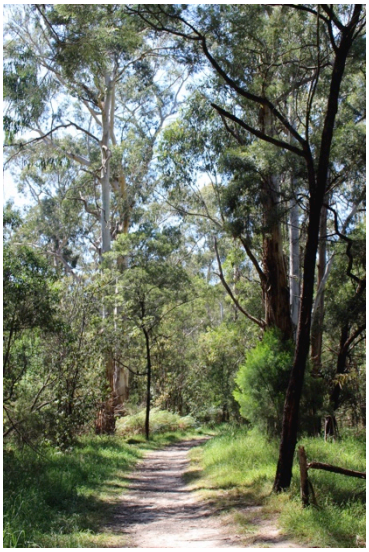


Appendix 3: Ecological vegetation classes

a. EVCs map



b. EVCs description

Ecological vegetation class	*Description*
Valley Grassy Forest 	Woodland to open forest on well-drained colluvial soils, with a diverse ground layer of graminoids and forbs. The overstorey is characterised by Bundy *Eucalyptus goniocalyx*, Narrow-leaf Peppermint *E. radiata* and Yellow Box *E. melliodora* in association with Black Wattle *Acacia mearnsii* and Cherry Ballart *Exocarpos cupressiformis*. The shrub layer is sparse, while the ground layer is characterised by Weeping Grass *Microlaena stipoides*, Kangaroo Grass *Themeda triandra*, Soft Tussock-grass *Poa morrisii*, Veined Spear-grass *Austrostipa rudis*, Bidgee-widgee *Acaena novae-zelandiae*, Creeping Bossiaea *Bossiaea prostrata*, Kidney-weed *Dichondra repens*, Pale Sundew *Drosera peltata*, Crane's-bill *Geranium* spp., Pennywort *Hydrocotyle* spp., Small St John's Wort *Hypericum gramineum* and Wattle Mat-rush *Lomandra filiformis*. Valley Grassy Forest occupies the slopes of the reserve between Glenfern Road and Ferny Creek.
Riparian Forest 	Tall forest to 40 metres on deep fertile soils. The overstorey is dominated by Manna Gum *Eucalyptus viminalis*, over a secondary tree layer of Blackwood *Acacia melanoxylon*, Silver Wattle *A. dealbata* and Hazel Pomaderris *Pomaderris aspera*. The shrub layer is characterised by Snow Daisy-bush *Olearia lirata*, Prickly Currant-bush *Coprosma quadrifida* and Victorian Christmas-bush *Prostanthera lasianthos*, while the ground layer is dominated by Sword Tussock-grass *Poa ensiformis*, Weeping Grass, Common Maidenhair and Stinking Pennywort *Hydrocotyle laxiflora*. Riparian Forest occurs on the alluvial flat of Ferny Creek and adjacent lower slopes.

Appendix 4: Flora species list

Scientific name	Common name
Indigenous species:	
Acacia dealbata	Silver Wattle
Acacia mearnsii	Black Wattle
Acacia melanoxylon	Blackwood
Acacia stricta	Hop Wattle
Acacia verticillata	Prickly Moses
Acaena novae-zelandiae	Bidgee-widgee
Acaena ovina	Sheeps Burr
Acrotriche prostrata	Trailing Ground Berry
Acrotriche serrulata	Honeypots
Adiantum aethiopicum	Common Maidenhair
Ajuga australis	Austral Bugle
Alisma plantago-aquatica	Water Plantain
Amyema pendula	Drooping Mistletoe
Amyema quandang var. *quandang*	Grey Mistletoe
Arthropodium strictum	Choclate Lily
Asperula euryphylla	Broad-leaf Woodrush
Austrocynaglossum latifolium	Forest Hound's Tongue
Austrostipa pubinodis	Tall Spear-grass
Austrostipa rudis subsp. *rudis*	Veined Spear-grass
Austrostipa rudis subsp. *australis*	Veined Spear-grass
Billardia scandens	Common Appleberry
Bossiaea prostrata	Creeping Bossiaea
Bulbine bulbosa	Bulbine Lily
Burchardia umbellata	Milkmaids
Bursaria spinosa	Sweet Bursaria
Calochilus campestris	Copper Beard-orchid
Calochlaena dubia	Common Ground-fern
Calystegia marginata	Forest Bindweed
Carex appressa	Tall Sedge
Carex breviculmis	Short-stem Sedge
Carex inversa	Knob Sedge
Cassinia aculeata	Common Cassinia
Cassinia arcuata	Drooping Cassinia
Cassinia longifolia	Shiny Cassinia
Centella cordifolia	Centella
Cheilanthes austrotenuifolia	Rockfern
Cheilanthes sieberi subsp. *sieberi*	Narrow Rock-fern
Chiloglottis valida	Common Bird Orchid
Clematis aristata	Mountain Clematis
Clematis microphylla	Small Leaf Clematis
Coprosma quadrifida	Prickly Currant-bush
Cotula australis	Common Cotula
Cyathea australia	Rough Tree Fern
Daviesia latifolia	Hop Bitter-pea

Scientific name	Common name
Desmodium gunnii	Southern Tick-trefoil
Deyeuxia quadriseta	Bent Reed Grass
Dianella longifolia var. *longifolia*	Pale Flax-lily
Dianella revoluta s.l.	Black-anther Flax-lily
Dianella tasmanica	Flax Lily
Dichondra repens	Kidney-weed
Doodia caudata	Small Rasp-fern
Drosera aberrans	Scented Sundew
Drosera peltata	Pale Sundew
Echinopogon ovatus	Forest Hedgehog Grass
Epacris impressa	Common Heath
Epilobium billardierianum subsp. *cinereum*	Grey Willow-herb
Eragrostis brownii	Common Love-grass
Eucalyptus goniocalyx	Bundy
Eucalyptus melliodora	Yellow Box
Eucalyptus obliqua	Messmate Stringybark
Eucalyptus ovata	Swamp Gum
Eucalyptus radiata ssp. *radiata*	Narrow-leaf Peppermint
Eucalyptus viminalis ssp. *viminalis*	Manna Gum
Euchiton collinus	Common Cudweed
Euchiton spp.	Cudweed
Exocarpos cupressiformis	Cherry Ballart
Gahnia radula	Thatch Saw-sedge
Geranium potentilloides var. *potententilloides*	Soft Cranesbill
Geranium sp. 2	Variable Cranesbill
Geranium spp.	Cranesbill
Glycine clandestina	Twining Glycine
Glycine microphylla	Small-leaf Glycine
Gonocarpus tetragynus	Common Raspwort
Goodenia ovata	Hop Goodenia
Gratiola peruviana	Austral Brooklime
Gratiola pubescens	Brooklime
Gynatrix pulchella	Hemp Bush
Hookerochloa hookeriana	Hooker Fescue
Hydrocotyle laxiflora	Stinking Pennywort
Hydrocotyle spp.	Pennywort
Hypericum gramineum	Small St John's Wort
Hypoxis vaginata	Yellow Star
Juncus australis	Austral Rush
Juncus pauciflorus	Loose-flower Rush
Juncus planifolius	Broad Leaf Rush
Juncus procerus	Tall Rush
Kennedia prostrata	Running Postman
Kunzea leptospermoides	Burgan
Lagenophora spp.	Bottle Daisy
Lepidosperma elatius	Tall Sword-sedge
Lepidosperma laterale	Variable Sword-sedge

Scientific name	Common name
Leptospermum continentale	Prickly Tea-tree
Linum marginale	Native Flax
Lomandra filiformis	Wattle Mat-rush
Lomandra longifolia	Spiny-headed Mat-rush
Lythrum hyssopifolia	Small Loosestrife
Microlaena stipoides var. *stipoides*	Weeping Grass
Microtis parviflora	Slender Onion-orchid
Microtis unifolia	Common Onion Orchid
Muellerina eucalyptoides	Creeping Mistletoe
Olearia argophylla	Musk Daisy-bush
Olearia lirata	Snowy Daisy-bush
Opercularia ovata	Broad-leaf Stinkweed
Oxalis perennans	Yellow Wood-sorrel
Oxalis spp.	Wood Sorrel
Ozothamnus ferrugineus	Tree Everlasting
Pandorea pandorana	Wonga Vine
Pentapogon quadrifidus	Five-awned spear Grass
Persicaria decipiens	Slender Knotweed
Phragmites australis	Common Reed
Pimelea axiflora	Bootlace Bush
Pimelea humilis	Common Rice-flower
Plantago varia	Plantain
Poa ensiformis	Sword Tussock-grass
Poa ensiformis	Sword Tussock-grass
Poa labillardierei var. *labillardierei*	Common Tussock-grass
Poa morrisii	Soft Tussock-grass
Polyscias sambucifolia	Panax Elderberry
Polystichum proliferum	Mother Shield-fern
Pomaderris aspera	Hazel Pomaderris
Poranthera microphylla	Small Poranthera
Prostanthera lasianthos	Victorian Christmas-bush
Pteridium esculentum	Austral Bracken
Rapanea howittiana	Muttonwood
Rubus parvifolius	Small-leaf Bramble
Rumex brownii	Swamp Dock
Rytidosperma fulvum	Copper-awned Wallaby-grass
Rytidosperma laeve	Wallaby Grass
Rytidosperma penicillatum	Slender Wallagy Grass
Schoenus apogon	Common Bog-sedge
Senecio glomeratus	Annual Fireweed
Senecio hispidulus	Rough Fireweed
Senecio minimus	Shrubby Fireweed
Senecio quadridentatus	Cotton Fireweed
Sigesbeckia orientalis ssp. *orientalis*	Indian Weed
Solanum prinophyllum	Forest Nightshade
Tetrarrhena juncea	Forest Wire-grass
Thelymitra peniculata	Trim Sun-orchid
Themeda triandra	Kangaroo Grass
Trycoryne elatior	Yellow Rush-lily

Scientific name	Common name
Veronica calycina	Hairy Speedwell
Viola hederacea sensu Entwisle (1996)	Ivy-leaf Violet
Wahlenbergia luteola	Bronze Bluebell
Wahlenbergia multicaulis	Branching Bluebell
Introduced species:	
Acacia baileyana	Cootamundra Wattle
Acacia decurrens	Early Black Wattle
Acacia elata	Cedar Wattle
Acacia longifolia ssp. *longifolia*	Sallow Wattle
Acetosa sagittata	Rambling Dock
Acetosella vulgaris	Sheep Sorrel
Agapanthus praecox ssp. *orientalis*	Agapanthus
Agrostis capillaris var. *aristata*	Browntop Bent
Aira elegans	Hair Grass
Allium triquetrum	Three-corner Garlic
Anagallis arvensis	Pimpernel
Anthoxanthum odoratum	Sweet Vernal-grass
Arctotheca calendula	Cape Weed
Asparagus asparagoides	Bridal Creeper
Aster subulatus	Aster-weed
Avena fatua	Wild Oats
Briza maxima	Large Quaking Grass
Briza minor	Quaking Grass
Bromus catharticus	Prairie Grass
Callitriche stagnalis	Common Water-starwort
Centaurium erythraea	Common Centaury
Chamaecytisus palmensis	Tree Lucerne
Chenopodium album	Sowbane
Chrysanthemoides monilifera	Boneseed
Cichorium intybus	Chicory
Cirsium vulgare	Spear Thistle
Conium maculatum	Hemlock
Conyza albida	*Tall Fleabane*
Conyza spp.	*Fleabane*
Coprosma repens	*Mirror Bush*
Cordyline australis	*Cabbage Tree*
Cortaderia selloana	*Pampas Grass*

Scientific name	Common name
Cotoneaster pannosus	Velvet Cotoneaster
Crataegus monogyna	Hawthorn
Crocosmia x crocosmiiflora	Montbretia
Cupressus macrocarpa	Monterey Cypress
Cynodon dactylon var. *dactylon*	Couch
Cynosurus sp.	Dog's Tail Grass
Cyperus eragrostis	Drain Flat-sedge
Cytisus scorparius	English Broom
Dactylis glomerata	Cocksfoot
Daucus carota	Carrot
Delairea odorata	Cape Ivy
Echium plantagineum	Paterson's Curse
Ehrharta erecta var. *erecta*	Panic Veldt-grass
Erica lusitanica	Spanish Heath
Erigeron karvinskianus	Seaside Daisy
Euphorbia peplus	Petty Spurge
Foeniculum vulgare	Fennel
Fumaria muralis ssp. *muralis*	Wall Fumitory
Galium aparine	Cleavers
Gamochaeta purpurea	Cudweed
Genista linifolia	Flax-leaf Broom
Genista monspessulana	Montpellier Broom
Hedera helix	English Ivy
Helminthotheca echioides	Ox-tongue
Holcus lanatus	Yorkshire Fog
Hypericum tetrapterum var. *tetrapterum*	St Peter's Wort
Hypochoeris radicata	Cat's Ear
Leontodon taraxacoides ssp. *taraxacoides*	Hairy Hawkbit
Lolium rigidum	Wimmera Rye-grass
Lotus spp.	Trefoil
Medicago arabica	Spotted Medic
Myoseris sylvatica	Forget-me-not
Narcissus tazetta	Tazetta
Oxalis corniculata s.s.	Creeping Wood-sorrel
Oxalis pes-caprae	Soursob
Paraserianthes lophantha ssp. *lophantha*	Cape Wattle
Paspalum dilatatum	Paspalum
Pelargonium X *domesticum*	Regal Pelargonium
Pennisetum clandestinum	Kikuyu
Pentaglottis sempervirens	Alkanet
Phalaris aquatica	*Toowoomba Canary-grass*
Pinus radiata	*Radiata Pine*
Pittosporum undulatum	*Sweet Pittosporum*
Plantago lanceolata	*Ribwort*
Plantago major	*Greater Plantain*
Poa annua	*Annual Meadow-grass*
Prunella vulgaris	*Self-heal*
Prunus cerasifera	*Cherry Plum*

Scientific name	Common name
Ranunculus repens	*Creeping Buttercup*
Raphanus raphanistrum	*Wild Radish*
Romulea rosea	*Onion Grass*
Rorippa nasturtium-aquaticum	*Watercress*
Rosa rubiginosa	*Sweet Briar*
Rubus fruticosus spp. agg.	*Blackberry*
Rumex conglomeratus	*Clustered Dock*
Salix spp.	*Willow*
Senecio vulgaris	*Common Groundsel*
Solanum mauritianum	*Wild Tobacco Tree*
Solanum nigrum s.s.	*Black Nightshade*
Sonchus asper s.s.	*Rough Sow-thistle*
Sonchus oleraceus	*Common Sow-thistle*
Sporobolus africanus	*Rat-tail Grass*
Stellaria media	*Chickweed*
Taraxacum officinale spp. agg.	Garden Dandelion
Tradescantia fluminensis	Wandering Jew, Tradescantia
Tragopogon porrifolius subsp. porrifolius	Salsify
Trifolium repens var. repens	White Clover
Trifolium spp.	Clover
Tropaeolum majus	Nasturtium
Verbena bonariensis s.s.	Purple-top Verbena
Viburnum tinus	Laurestinus
Vicia spp.	Vetch
Vinca major	Blue Periwinkle
Watsonia meriana var. bulbillifera	Bulbil Watsonia
Yucca gloriosa	Palm Lily
Zantedeschia aethiopica	White Arum-lily

Appendix 5: Fauna species list

Common name	Scientific name
Mammals (native):	
Black Wallaby	*Wallabia bicolor*
Bush Rat	*Rattus fuscipes*
Common Brushtail Possum	*Trichosurus vulpecula*
Common Ringtail Possum	*Pseudocheirus peregrinus*
Common Wombat	*Vombatus ursinus*
Eastern Grey Kangaroo	*Macropus giganteus*
Koala	*Phascolarctos cinereus*
Platypus	*Ornithorhynchus anatinus*
Short-beaked Echidna	*Tachyglossus aculeatus*
Sugar Glider	*Petaurus breviceps*
Swamp Rat	*Rattus lutreolus*
Mammals (introduced):	
Cat	*Felis catus*
European Rabbit	*Oryctolagus cuniculus*
House Mouse	*Mus musculus*
Red Fox	*Canis vulpes*
Birds (native):	
Australian King-Parrot	*Alisterus scapularis*
Australian Magpie	*Gymnorhina tibicen*
Australian Owlet-nightjar	*Aegotheles cristatus*
Australian White Ibis	*Threskiornis molucca*
Australian Wood Duck	*Chenonetta jubata*
Bassian Thrush	*Zoothera lunulata*
Bell Miner	*Manorina melanophrys*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
Black-shouldered Kite	*Elanus axillaris*
Brown Falcon	*Falco berigora*
Brown Goshawk	*Accipiter fasciatus*
Brown Thornbill	*Acanthiza pusilla*
Brush Cuckoo	*Cacomantis variolosus*
Collared Sparrowhawk	*Accipiter cirrhocephalus*
Crested Shrike-tit	*Falcunculus frontatus*
Crimson Rosella	*Platycercus elegans*
Dusky Woodswallow	*Artamus cyanopterus*
Eastern Rosella	*Platycercus eximius*
Eastern Spinebill	*Acanthorhynchus tenuirostris*
Eastern Whipbird	*Psophodes olivaceus*
Eastern Yellow Robin	*Eopsaltria australis*
Fairy Martin	*Hirundo ariel*
Fan-tailed Cuckoo	*Cacomantis flabelliformis*

Galah	*Cacatua roseicapilla*
Gang-gang Cockatoo	*Callocephalon fimbriatum*
Golden Whistler	*Pachycephala pectoralis*
Grey Butcherbird	*Cracticus torquatus*
Grey Currawong	*Strepera versicolor*
Grey Fantail	*Rhipidura fuliginosa*
Grey Shrike-thrush	*Colluricincla harmonica*
Horsfield's Bronze-Cuckoo	*Chrysococcyx basalis*
Laughing Kookaburra	*Dacelo novaeguineae*
Lewins Honeyeater	*Meliphaga lewinii*
Little Corella	*Cacatua sanguinea*
Little Eagle	*Hieraaetus morphnoides*
Little Lorikeet	*Glossopsitta pusilla*
Little Pied Cormorant	*Phalacrocorax melanoleucos*
Little Raven	*Corvus mellori*
Magpie-lark	*Grallina cyanoleuca*
Mistletoebird	*Dicaeum hirundinaceum*
Musk Lorikeet	*Glossopsitta concinna*
New Holland Honeyeater	*Phylidonyris novaehollandiae*
Noisy Miner	*Manorina melanocephala*
Olive Whistler	*Pachycephala olivacea*
Pacific Black Duck	*Anas superciliosa*
Pallid Cuckoo	*Cuculus pallidus*
Peregrine Falcon	*Falco peregrinus*
Pied Currawong	*Strepera graculina*
Powerful Owl	*Ninox strenua*
Rainbow Lorikeet	*Trichoglossus haematodus*
Red Wattlebird	*Anthochaera carunculata*
Red-browed Finch	*Neochmia temporalis*
Rose Robin	*Petroica rosea*
Rufous Fantail	*Rhipidura rufifrons*
Rufous Whistler	*Pachycephala rufiventris*
Sacred Kingfisher	*Todiramphus sanctus*
Satin Flycatcher	*Myiagra cyanoleuca*
Shining Bronze-Cuckoo	*Chrysococcyx lucidus*
Silver Gull	*Larus novaehollandiae*
Silvereye	*Zosterops lateralis*
Southern Boobook	*Ninox novaeseelandiae*
Spotted Pardalote	*Pardalotus punctatus*
Striated Pardalote	*Pardalotus striatus*
Striated Thornbill	*Acanthiza lineata*
Sulphur-crested Cockatoo	*Cacatua galerita*
Superb Fairy-wren	*Malurus cyaneus*
Tawny Frogmouth	*Podargus strigoides*
Tree Martin	*Hirundo nigricans*
Varied Sittella	*Daphoenositta chrysoptera*
Wedge-tailed Eagle	*Aquila audax*

Welcome Swallow	*Hirundo neoxena*
White-browed Scrubwren	*Sericornis frontalis*
White-eared Honeyeater	*Lichenostomus leucotis*
White-faced Heron	*Egretta novaehollandiae*
White-naped Honeyeater	*Melithreptus lunatus*
White-plumed Honeyeater	*Lichenostomus penicillatus*
White-throated Needletail	*Hirundapus caudacutus*
White-throated Treecreeper	*Cormobates leucophaeus*
Willie Wagtail	*Rhipidura leucophrys*
Yellow-faced Honeyeater	*Lichenostomus chrysops*
Yellow-tailed Black-Cockatoo	*Calyptorhynchus funereus*
Birds (introduced):	
Common Blackbird	*Turdus merula*
Common Myna	*Acridotheres tristis*
Common Starling	*Sturnus vulgaris*
European Goldfinch	*Carduelis carduelis*
European Greenfinch	*Carduelis chloris*
House Sparrow	*Passer domesticus*
Rock Dove	*Columba livia*
Spotted Turtle-Dove	*Streptopelia chinensis*
Reptiles:	
Common Blue-tongued Lizard	*Tiliqua scincoides*
Garden Skink	*Lampropholis guichenoti*
Lowland Copperhead	*Austrelaps superbus*
Tiger Snake	*Notechis scutatus*
Tree Dragon	*Amphibolurus muricatus*
Weasel Skink	*Saproscincus mustelinus*
Frogs:	
Common Froglet	*Crinia signifera*
Southern Brown Tree Frog	*Litoria ewingii*

Appendix 6: Map of Management Units

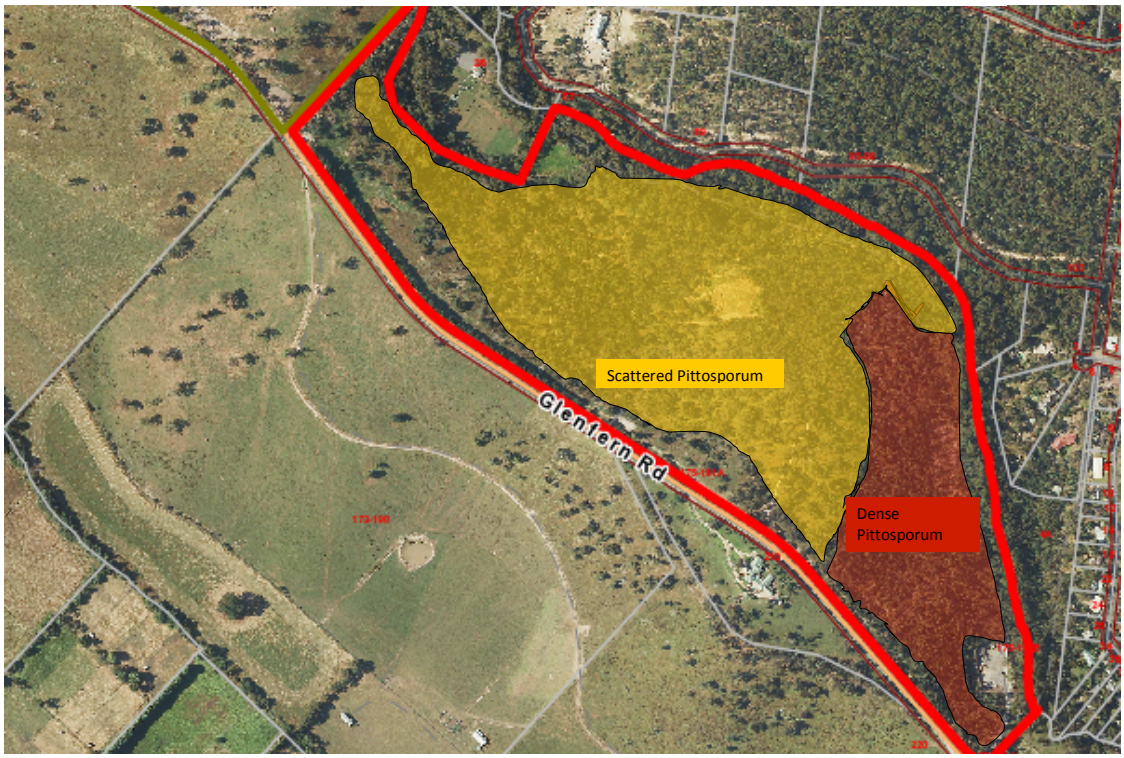
See section 5.

Appendix 7: Weed infestations in 2004

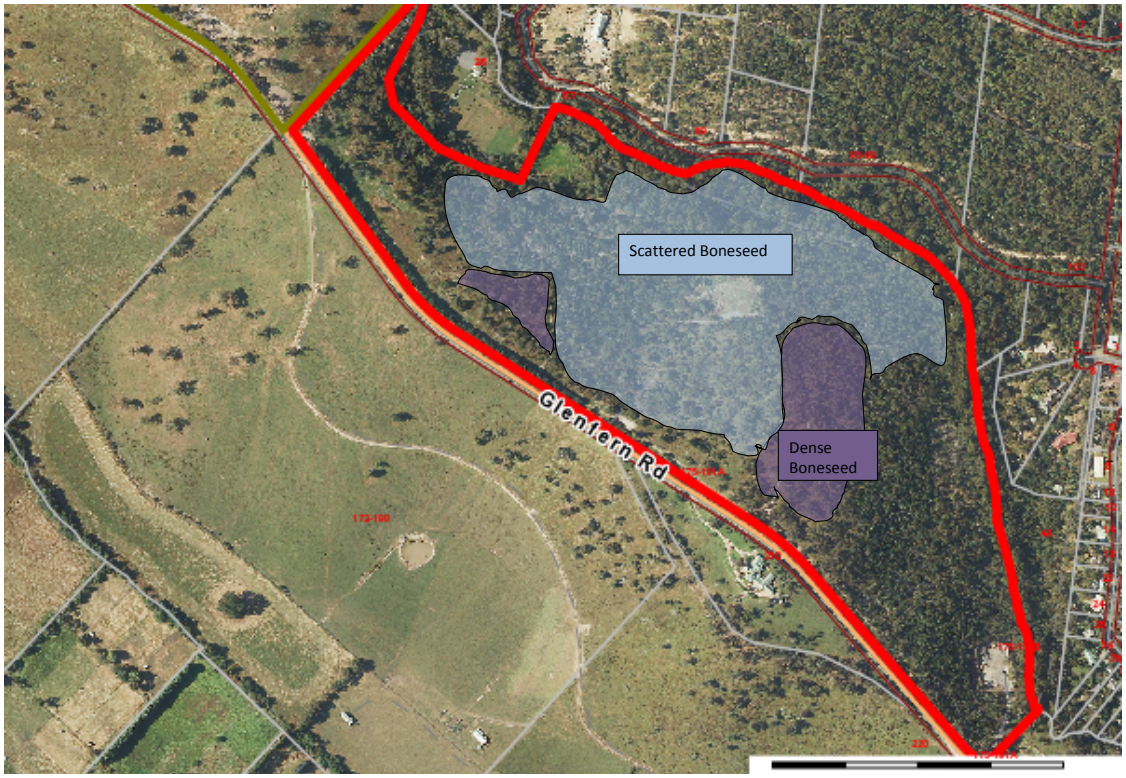
Maps showing (top to bottom) approximate distribution of Sweet Pittosporum, Boneseed and other major weeds in 2004. (Source: Linda Fullagar, Friends group, 2016.)

Note that all major infestations, except for some Sweet Pittosporum, had been controlled by 2016.

Map 1. Glenfern Valley Bushlands showing Pittosporum infestation in 2004



Map 2. Glenfern Valley Bushlands showing Boneseed infestation in 2004



Map 3. Glenfern Valley Bushlands showing other major weed infestations in 2004