

Glenfern Valley Bushlands Management Plan



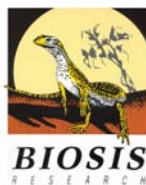
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For

Department of Sustainability and Environment
Yarra Ranges Shire Council

February 2004



Glenfern Valley Bushlands Management Plan - Draft

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Acknowledgments

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

Photographs: Robin Crocker

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February 2004

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Summary

Located east of Melbourne in the Dandenong Ranges, Glenfern Valley Bushlands has important conservation values and opportunities to provide for a range of recreation activities in pleasant natural settings.

The reserve has suffered from neglect in the past and the Department of Sustainability and Environment (DSE) and the Shire of Yarra Ranges commissioned this plan to develop a vision, goals and actions to help ensure the sound future management of the 40-hectare reserve.

The plan was prepared by consultants working with staff from DSE, the Shire and other agencies and organisations, including the Friends of Glenfern Valley Bushlands. The planning process included assessments of the site and community consultation. Issues were reviewed, management options identified, goals, actions and priorities developed and management and monitoring requirements determined. Issues identified include damage and rubbish dumping resulting from illegal vehicle access, weed invasion, degraded tracks, a lack of facilities for passive recreation, and inadequate management resources.

The **key goals** identified for the study area are:

1. 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

Major actions include

- Installing gates and boundary fences and developing education and enforcement programs to prevent illegal vehicle entry
- Implementing a systematic weed control program and encouraging natural regeneration
- Protecting natural values along Ferny Creek (photo, right)
- Removing rubbish and old fencing and rehabilitating disused tracks
- Providing for car parking and picnicking off Glenfern Road
- Developing a network of low-impact walking tracks including a link to Gilmour Park
- Publicising the reserve and providing information and interpretation services
- Developing leases which ensure protection of environmental values
- Arranging for future management by the Shire of Yarra Ranges
- Providing strong ongoing support for the Friends group



Indicative costs, responsibilities for management actions and sources of income are discussed.

The planning process led to the development of a positive **vision** for Glenfern Valley Bushlands which sees ongoing enhancement of natural values and the provision of compatible informal recreational uses.

1 Introduction

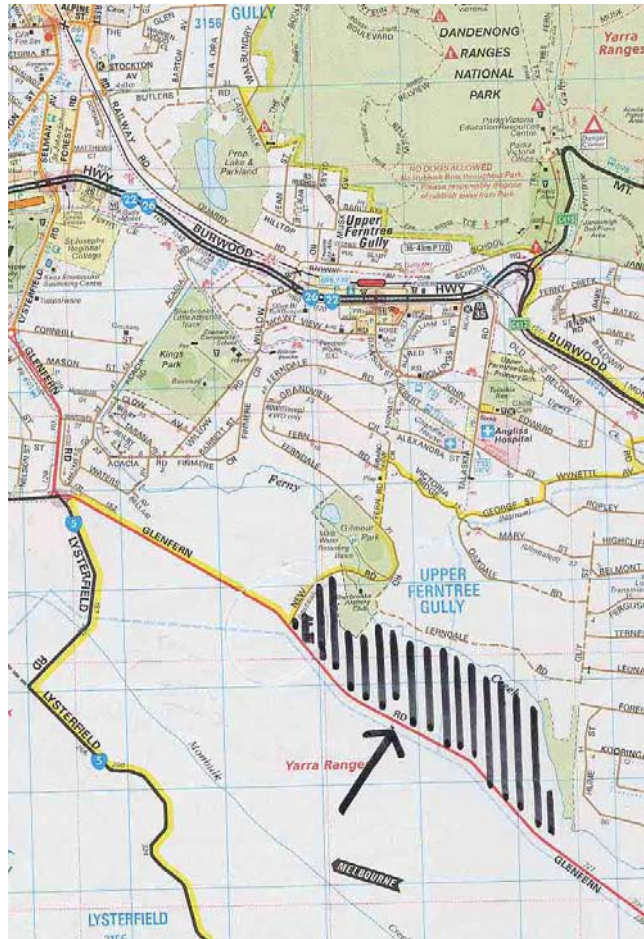
1.1 The study area

Glenfern Valley Bushlands is located 35 km east of Melbourne, south of Upper Ferntree Gully and the Dandenong Ranges National Park. The area is Unreserved Crown land and covers about 40 hectares between Glenfern Road and Ferny Creek in Yarra Ranges Shire (see map, right).

The study area is adjacent to a Melbourne Water Retarding Basin on Ferny Creek, currently leased by an archery club, and Gilmour Park in the City of Knox. The study area also includes a fenced sewer access point in the south-east corner used by South East Water (figure 1 at end of report). These areas are discussed in the management plan where relevant to Glenfern Valley Bushlands.

The reserve includes important natural values and has the potential to provide for a range of informal recreation opportunities. Parts of the reserve have been seriously degraded by past activities including quarrying and unregulated 4WD and trail bike access.

A brief chronology of the history of the reserve is included in appendix 1.



1.2 Purpose of plan and process followed

This management plan was commissioned to enable future directions to be identified, and a vision, goals, actions and responsibilities determined. The plan included a review of priorities for conservation and recreation and the development of strategies to guide future planning and management.

The overall planning approach taken is as follows.



Preparation of the plan involved meetings with the project steering committee, discussions with stakeholders, distribution of newsletters, a community forum (see Site Analysis Report for details), several detailed site inspections and review of relevant documents and recent open space trends.

The plan was prepared by consultants under the direction of a steering committee with representatives from DSE, Yarra Ranges Shire Council and the Friends group.

1.3 State, regional and local context

A range of documents was reviewed to assist in developing the management plan. These included relevant State Government strategies, the Yarra Ranges Shire Planning Scheme and Open Space Strategy, a management plan for Gilmour Park (adjacent to the study area) and a waterway activity plan covering Ferny Creek.

The most relevant policies, strategies and plans are outlined in appendix 2.

1.4 Trends in use of parks and reserves

Some of the important trends likely to be relevant to the reserve are listed here. These are based on the outcomes of recent municipal park and open space studies undertaken in Victoria. See for example open space strategies for Knox, Frankston, Wellington and Macedon Ranges shires prepared by Robin Crocker and Associates.

Recreation/use

- Increasing popularity of informal recreation eg walking, socialising and family recreation in pleasant, well-treed settings
- Increased demand for linked and loop trails for walking/cycling.
- Expectations of better quality facilities, settings and maintenance
- Greater emphasis on fair/equal access
- Recognised benefit of healthy lifestyles including increased use of open space
- An ageing population with needs for pleasant areas for walking and relaxing
- The need for a diversity of open space settings from 'wilderness' to developed
- Recognition that safety and security are important to many people, particularly women

Conservation

- Increased interest in natural and cultural values and commitment to ecologically sustainable development and water conservation
- Recognition of the importance of protecting existing indigenous vegetation, and improved habitat
- Increased emphasis on effective control of invasive weeds in bushland areas

Resources/management

- Recognition of the need for:
 - Clear management responsibility and monitoring of management activities
 - An appropriate level of maintenance and surveillance
 - Adequate land management skills
 - Adequate recurrent funding following capital works developments
- Limits to State government and Council resources
- Recognition of the important contribution of volunteers
- The importance of external funding opportunities, eg grants and sponsorship

2 Analysis of current situation

2.1 Existing uses

Existing recreational uses of the reserve include casual walking, dog walking, nature observation and sightseeing. No recreational facilities are provided except for walking tracks, many of which are poorly aligned and suffer from inadequate drainage and soil erosion.

The Sherbrooke Archers Club uses a large grassed area in the Melbourne Water retarding basin and substantial bushland areas above the basin and along Ferny Creek. These areas extend outside the Melbourne Water land into the reserve.

Illegal uses include 4WD and trail bike riding on and off existing tracks, and rubbish dumping. These activities have had significant impacts on the reserve.

The Friends group has recently been actively involved in assessing natural values and in weed control activities.

2.2 Existing values

Flora and fauna values

The reserve supports at least seven fauna habitat types including Ferny Creek, Riparian Forest, Grassy Woodland, ephemeral wetland, 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.

Four EVC's (ecological vegetation classes) occur in the reserve (see appendix 3 for details):

- Valley Grassy Forest
- Herb-rich Foothill Forest
- Riparian Forest
- Wetland Formation

The area has a high diversity of native species that occur in a range of habitats. There have been at least 111 documented fauna species (103 indigenous) recorded in or immediately adjacent to the reserve. These include at least 13 mammals (11 native), 88 bird species (82 native), seven native reptiles and three frog species.

Based on existing ecological information, Glenfern Valley Bushlands is at least **regionally** significant for biodiversity conservation. This implies that the site is significant on a regional scale, i.e. within the Highlands – Southern Fall Bioregion.

Pest plants and animals adversely affect the area's natural values.

Cultural values

The reserve has moderate landscape values, providing an interesting contrast with rural landscapes in the adjacent Lysterfield Valley. There are no known sites of cultural significance in the reserve.

Natural and cultural values are discussed in detail in section 5.

2.3 Existing conditions

Site inspections and discussion were undertaken to identify existing conditions and the main issues facing the reserve (figure 1). Seven main management units were identified:

Unit No.	Name
1	Ferny Creek riparian strip
2	Creek flats
3	Grassy forest (west and central)
4	Grassy forest (south-east)
5	Grassy upper slopes
6	Degraded upper slopes
7	Former quarry site

The management areas and associated issues are described in detail in appendix 4. Issues for many units related to weed invasion and the impacts of unregulated use and access.

There are several general issues that relate to more than one unit:

General issues

- The reserve boundaries (and boundaries near New Road) are not secure, resulting in unauthorised access, damage and rubbish dumping.
- Many existing vehicle and walking tracks are poorly aligned, suffer erosion, and are surplus to management and visitor requirements.
- Access for fire suppression has not been planned in the past.
- Mesh fencing erected at the time the quarry operated is unattractive and in poor condition.
- There are virtually no visitor facilities in the reserve.
- Ongoing recording of flora and fauna is desirable
- Priorities need to be determined for land management and provision of visitor facilities

2.4 Existing management and resources

Management responsibility

Glenfern Valley Bushlands is notionally managed by the Crown Land Management section of the Department of Sustainability and Environment (DSE) with support from the Friends of the Glenfern Valley Bushlands (the 'Friends group'). The Shire of Yarra Ranges has also had some recent involvement, and is likely to assume management responsibility.

Specific management areas

- Melbourne Water owns the retarding basin land in the north-west part of the study area. Cooperative management of this area and the Bushlands reserve is highly desirable.
- South East Water is responsible for the area around the sewer access point (former treatment plant site) in the south-east corner. A lease is needed to formalise this use.

Budget, assets and revenue

There is no annual budget allocation for the reserve, and no DSE staff member is currently responsible for day to day operations. No revenue is currently collected from users of the reserve.

The reserve does not have any significant equipment or other management assets.

The Friends group has recently been successful in obtaining some local sponsorship for their activities.

3 Issues identified

3.1 'SWOT' analysis

A SWOT analysis by the steering committee and subsequent analysis by the consultants identified the following strengths, weaknesses, opportunities and threats for the study area.

Strengths	Weaknesses	Opportunities	Threats/constraints
<ul style="list-style-type: none"> ▪ Unique combination - creek, riparian forest, woodland, grassland (area as it was) ▪ Sig't fauna species ▪ Good remnant vegetation ▪ Creek – reasonable quality (platypus until 1997) ▪ Good for walking and sightseeing ▪ High public profile ▪ No preconceived ideas re use ▪ Biolink to Dandenongs NP and Lysterfield LP ▪ Friends very active ▪ Size – relatively large 	<ul style="list-style-type: none"> ▪ Inadequate past management ▪ Size – large area to manage ▪ Degraded appearance of site ▪ Poor fencing, many access points off main road – illegal vehicle entry ▪ Unregulated use of land across creek ▪ Lack of parking, defined tracks, facilities and information 	<ul style="list-style-type: none"> ▪ Provision for picnicking, lookouts/ sightseeing, nature study and walking ▪ Improved land management ▪ Integrate management of reserve, retarding basin and Gilmour Park ▪ Link to Gilmour Park and to east ▪ Ecological burning ▪ Improved fire access for CFA ▪ Improve creek environs ▪ Remove old mesh fencing ▪ Shared management ▪ Income from lease ▪ Increased grants when management plan completed ▪ Increased involvement of local community ▪ Platypus return ▪ Clean up area used by South East Water 	<ul style="list-style-type: none"> ▪ Degradation - 4WD, trail bikes, rubbish dumping ▪ Weeds ▪ Fire ▪ Dogs ▪ Foxes, cats ▪ Erosion ▪ Inadequate resources ▪ Limited technical/ design skills ▪ Archery activity may limit access along creek ▪ Unclear boundaries – reserve and Melbourne Water land

3.2 Major issues

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

- Damage and rubbish dumping resulting from unauthorised vehicle access.
- Excessive number of tracks and poor track alignments
- Ongoing problem of invasive weeds and pest animals
- Need for improved protection and enhancement of natural values
- Lack of visitor facilities
- Opportunity for increased use for passive recreation and community education
- Need to regulate dog use
- Opportunities for links to other areas along Ferny Creek
- Opportunity for ongoing community involvement in development, management and activities
- Future management responsibility and sources of funds
- Opportunities for lease fees, grants and sponsorship to fund initiatives
- Risk management and safety issues

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

*Damage caused by 4WD vehicles and trail bikes (right).
Excessive tracks and rubbish dumping (below)*



4 Vision, principles and goals

4.1 Vision and future directions

The following vision was developed for the study area.

In 2015, visitors to Glenfern Valley Bushlands find an attractive area with opportunities to relax and enjoy a mix of bushland areas ranging from riparian forest and wetlands along Ferny Creek to woodlands and grasslands on the slopes.

Viewing points, interpretive information and pleasant walking tracks and facilities help visitors to appreciate the area and reflect on the community's changing attitude to the environment since the former quarry was closed in the 1980s. The reserve also provides an interesting visual contrast with the rural landscape in Lysterfield Valley across Glenfern Road.

Extensive weed control programs conducted by the Friends group and Council have had a remarkable effect on the health of the reserve with major weeds controlled and strong regeneration of the original vegetation communities. The exclusion of trail bikes and 4WD vehicles has ended rubbish dumping in the reserve and enabled eroded areas to recover.

Many walkers use the extensive track network in the Reserve and the linking tracks to Gilmour Park and Birds Land. The Archery Club continues to operate successfully on Melbourne Water and reserve land and makes an important contribution to weed control in the area.

In conjunction with Gilmour Park, Glenfern Valley Bushlands has become a well-known destination for people interested in enjoying quiet bushland and associated wildlife. The outstanding contribution of the Friends group and Council to rehabilitation of the reserve has been widely recognised by the local community and through several awards.

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 all indigenous species flourish.
- Allow natural ecological processes to operate as far as practicable.
- Protect natural areas (soils and vegetation) from damage by recreational and management activities.

Access and equity

- Provide good access, where practicable, for the whole community including people with disabilities.
- Provide a range of opportunities for walking and nature observation.

- Regulate vehicle movement to protect vegetation and soils.
- 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.

Management and maintenance

- Use the approved management plan to guide all future management.
- 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.
- Provide adequate management and technical resources to meet community needs.
- Seek external funding and sponsorship to adequately resource 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 3 – 5 years.

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

4.3 Key goals

The **key general goals** identified for the study area are to:

- 1. 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 issues in more detail 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 important natural values requiring protection and enhancement.

Significance

Based on existing ecological information, Glenfern Valley Bushlands is at least **regionally** significant for biodiversity conservation. This implies that the site is significant on a regional scale, i.e. within the Highlands – Southern Fall Bioregion. Significant ecological features of the reserve include the presence of:

- One state significant EVC (Valley Grassy Forest), which is vulnerable in the Bioregion and Victoria.
- At least one fauna species of state conservation significance (Powerful Owl).
- At least 15 regionally 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 (Ferry Creek). Tree hollows provide habitat for a range of species that are dependent or partially 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

DSE classifies native vegetation in Victoria based on 'ecological vegetation classes' (EVCs). The reserve supports four EVC's:

- Valley Grassy Forest
- Herb-rich Foothill Forest
- Riparian Forest
- Wetland Formation

In addition there are areas of predominantly introduced vegetation, which are 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.



Valley Grassy Forest (above) and Riparian Forest (right)



Descriptions of the EVCs at Glenfern Valley are given in appendix 3.

The location of the EVC's is shown on figure 2 and the quality of existing vegetation in figure 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). This corresponds largely to the vegetation that is currently present on site. However, an area of Wetland Formation is also present on the alluvial flats associated with Ferny Creek. This wetland is likely to have been derived following clearing of trees and shrubs from this poorly-drained area.

The vegetation of the reserve has been surveyed by Biosis Research Pty. Ltd. and local naturalists from the Friends group, with the total number of recorded flora species currently standing at 241 (137 indigenous species, 104 introduced species). This number is likely to increase as further surveys are conducted within the reserve.

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). The Herb-rich Foothill Forest is highly degraded by dense infestations of Sweet Pittosporum and Boneseed and is generally in poor to moderate condition, with few eucalypts remaining. The Wetland Formation is of poor to moderate condition. The quality of the vegetation can be improved in most areas, as has already been demonstrated through the successful Boneseed eradication program undertaken by the Friends group in selected areas.

None of the recorded plant species are rare or threatened in Victoria (DSE Flora Information System). At least 15 species are rare within the Highlands – Southern Fall Bioregion and accordingly have regional significance (see appendix 1).

Weeds

The reserve currently supports large areas dominated by introduced species. Current management aims to control the 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.

A large number of introduced species are present. The major woody weeds include species such as Boneseed *Chrysanthemoides monolifera*, Sweet Pittosporum *Pittosporum undulatum*, Sallow Wattle *Acacia longifolia* ssp. *longifolia* and Blackberry *Rubus fruticosus* spp. agg., 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 now essential for protection of biodiversity. It should focus on:

- relatively intact areas of strategic importance for conservation
- strategic highly invasive weeds wherever they occur

A variety of control techniques including manual removal, selective herbicide application away from sensitive areas, and smothering, burning or scorching weed species should be considered during any weed control program.

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 DSE vegetation mapping, the proposed 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 Lake 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 Lake 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 is of concern, as many of the trees are dead or in decline. Possible reasons for the dieback include drought stress, possum browsing, Bellbird damage, infection with Cinnamon fungus *Phytophthora cinnamomi*, or a combination of any of these factors. A forest pathologist would need to assess the site in order to determine the specific cause(s) of tree decline within the reserve.

Drought stress is known to have already had a negative impact on tree populations in the Dandenong Ranges following the serious drought experienced over the past number of years. This is likely to have been a contributing factor to eucalypt dieback across the site. Unfortunately, there is no known method of ameliorating the effects of drought stress on large trees such as eucalypts, particularly on such a large site.

Possum browsing may also be a contributing factor to the dieback. Young foliage is preferentially eaten, so that mature leaves are not replaced when they are shed or eaten. Death from repeated defoliation may take a few years. A possum need only spend one night per fortnight in an affected tree to eat the new leaves that have been produced and the tree eventually dies, usually with a small amount of foliage still attached (Jeff Yugovic pers. comm.).

Much of the reserve is heavily infested with Sweet Pittosporum. In Victoria, Ringtail Possum densities (animals/ha) can be several times higher where there is a dense shrub stratum (such as Sweet Pittosporum) which provides nest sites and allows possums to move between feed trees and avoid ground predators (Henry 1995). Possums are likely to travel from their nest sites within the Sweet Pittosporum area to their feeding area (dieback zone). The possum habitat will decline as the eucalypt feed trees are eventually killed.

The loss of eucalypts is preventable with appropriate management. This includes removal, or ecological burning, to control Sweet Pittosporum and reduce possum numbers, and isolating and guarding individual trees of particular value, such as very large or attractive trees.

Cinnamon fungus is a major cause of dieback in forests in Victoria. It is a soil-borne fungal pathogen that has probably been introduced to Australia since European settlement, and is readily spread by infected soil adhering to vehicles. Many native plant species are susceptible including a large number of tree species (Marks and Smith 1991).

Management policies

- *Minimise disturbance to native vegetation, soils and 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.*
- *Ensure that weed control commences in areas of relatively high quality and progresses outwards from these areas.*
- *Natural regeneration is preferred over revegetation as this results in authentic recruitment of locally indigenous species.*
- *Ensure that vegetation management programs consider the need to provide on-going habitat for wildlife.*
- *Ensure that vegetation management is undertaken by qualified and experienced professional personnel or volunteers suitably trained or supervised.*

Management actions

Vegetation management actions are set out below for the seven management units (figures 1 and 4).

Ferny Creek riparian strip

1. *Where practicable, relocate tracks away from sensitive areas and fauna habitat.*
2. *Undertake targeted control of woody weeds (e.g. Sweet Pittosporum) and highly invasive herbaceous species (e.g. Bridal Creeper, Three-corner Garlic, Tradescantia). Ensure that the removal of woody weeds does not adversely affect shade-dependent native ferns. Ensure follow-up weed control to deal with introduced species which re-invade or regenerate from soil-stored seed.*
3. *Allow natural regeneration to progressively fill open areas in the Riparian Forest that have been disturbed by activities associated with the archery club. Ensure that weed management is undertaken during this process.*

Creek flats

4. *Undertake weed control as appropriate, concentrating on herbaceous weeds within areas dominated by native species in the Wetland Formation.*
5. *Allow natural regeneration to progressively fill open areas within the ephemeral wetland.*

Grassy forest (west & central)

6. *Undertake targeted control of woody weeds (e.g. Boneseed). Follow-up weed control is essential as Boneseed will regenerate from soil-stored seed for a number of years following eradication of parent plants. Follow-up control should be carried out prior to seedlings setting seed.*
7. *Allow natural regeneration to progressively fill open areas and areas recently disturbed by earthworks near Glenfern Road.*
8. *Monitor tree decline. If possums appear to be a major contributing factor in eucalypt dieback, investigate the possibility of placing tree guards on eucalypts to prevent damage through over-browsing.*
9. *Prevent the illegal dumping of garden waste (e.g. along New Road), which facilitates the spread of introduced plant species.*

Grassy forest (south-east)

10. *Undertake targeted control of woody weeds (e.g. Sweet Pittosporum, Boneseed) on the margins of higher quality areas, working outwards from areas of higher quality and allowing indigenous species to naturally regenerate and/or recolonise. Ensure follow-up weed control.*

Grassy upper slopes

11. *Slash grassland in the first half of January following seed-set in Kangaroo Grass *Themeda triandra*, to promote seed germination. Annual slashing will also help to maintain weed levels at a reasonable level.*
12. *Remove soil and other debris dumped by contractors.*

Degraded upper slopes

13. *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.*
14. *Remove cypresses along Glenfern Road and replace with indigenous woodland species planted in groupings simulating natural occurrences. Retain views across the site from the proposed parking area and other viewing points.*

Former quarry site

15. *Undertake targeted control of highly invasive weeds and undertake planting of indigenous species (particularly trees) to eventually shade out weeds.*
16. *Prevent introduced species from migrating into adjacent bushland.*

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 have been at least 111 documented fauna species (103 indigenous, eight introduced) recorded in or immediately adjacent to the reserve. These include at least 13 mammals (11 native), 88 bird species (82 native), seven native reptiles and three frog species. A number of additional species recorded (Atlas of Victorian Wildlife unpub. data) 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) and a number of regionally significant fauna species. One Platypus was recorded upstream of Gilmour Park (Doeg 1999 – One Platypus has been recorded upstream of Gilmour Park (Doeg 1999 in Melbourne Water 1999) in the vicinity of Glenfern Valley, but has not been sighted since.

Habitats

The reserve supports at least seven fauna habitat types including Ferny Creek, Riparian Forest, Grassy Woodland, ephemeral wetland, 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 Possums), 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 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 also 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.

Management actions

17. Monitor threats from foxes and other pest species and undertake control programs where appropriate in conjunction with DSE and adjacent landowners.

4.1.3 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 are classified by the National Trust of Australia (Victoria).

Existing fences, eroded tracks, rubbish, dumped fill and old signs detract from landscape values. The works area surrounding the sewer access point is unsightly and would be enhanced with boundary planting and rubbish removal. All future works and structures should complement the semi-natural setting.

The location and design of all tracks needs to be reviewed and a network established which is compatible with landscape and natural values (section 5.2.3).

Attractive entry points would help to improve visual amenity and visitor experience.

Management policies and actions

18. *Ensure that all management activities enhance landscape values and design all future facilities and structures, including site entry points on Glenfern Road, to complement the site's bushland setting.*
19. *Remove and replace, where appropriate, existing mesh and wire fencing, signs and facilities.*
20. *Continue to remove rubbish from the reserve.*
21. *Remove waste materials at the sewer access site and undertake boundary planting with indigenous species.*

5.1.4 Soils

The soils of the study area comprise relatively recent quaternary volcanics on the slopes, while the Ferny Creek valley is comprised of deep, fertile, alluvial sediments (Allaway 1997). Soil erosion is occurring in areas, particularly along tracks used by four-wheel drives and motorbikes.

Most tracks where soil erosion is occurring could be closed, rehabilitated and revegetated using natural regeneration and planting of site-indigenous species (see section 5.2.3, and Fig. 4 for proposed track network following track closures).

5.1.5 Water quality

Water in Ferny Creek upstream of the reserve has been identified as of poor quality due to overflow from septic tanks, high litter loads from stormwater and other factors (Melbourne Water, 1999).

Unrestricted four-wheel drive access across the creek (upstream from the archery club) is also acting to promote bank erosion and sedimentation in the creek. Action is needed to prevent this damage (section 5.2.1).

Management actions

22. *Liaise with Melbourne Water regarding the installation of litter traps near Forest Park Drive, which is a high source of litter (Melbourne Water 1999).*

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 was burnt in 1962 and 1980 (Peter Marke pers. comm.).

The reserve has been largely untouched by fire for over 20 years, which has led to the development of a fairly dense understorey in some areas. An ecological burn would therefore be beneficial, to promote the regeneration of indigenous species, 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 study area, 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.

Issues related to fire and public safety are discussed in section 5.2.4.

Management actions

23. *In consultation with the CFA and DSE, 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. Any Aboriginal sites are protected under Commonwealth and State legislation; Aboriginal Affairs Victoria can provide advice if any potential sites are identified.

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

Management actions

24. *Consult with Aboriginal Affairs Victoria and local Aboriginal communities regarding the identification and protection of any potential Aboriginal sites.*

25. *Encourage research on the history of the site and incorporate in interpretation programs.*

5.2 Goal 2: Provide safe and compatible recreation

Unregulated use in the past has led to damage by vehicles and the creation of an unsustainable network of tracks in the reserve. With careful planning and sensitive management, Glenfern Valley Bushlands has the potential to provide for pleasant informal recreation in an attractive bushland setting.

5.2.1 Vehicle access and parking

Public access

Glenfern Valley is small for a conservation reserve and access for public vehicles is inappropriate except for parking adjacent to the boundary.

Active management will be needed to prevent illegal vehicle access in the future. Experience in parks and reserves managed by Parks Victoria and other agencies shows that a range of steps can be taken including robust fencing and gates, signs, education of users and 4WD and trail bike organisations, patrols by staff and the Police, and well publicised enforcement.

Cable fencing of road and creek boundaries is likely to be necessary where illegal access has occurred in the past. The present use of boulders and logs does not provide an adequate deterrent.

An assessment of entry and parking options for the reserve indicated that an area inside the reserve, adjacent to the present gate on Glenfern Road, is the best site, providing good line of sight for motorists, views, and a well-located starting point for walks. Space for about 15 cars and 1 or 2 buses is likely to be adequate in the short to medium term. The small carpark on the corner of Glenfern Road and New Road may be phased out after the new carpark is established.

Management access

Vehicle access will be required to parts of the reserve for management and CFA vehicles. Many existing tracks can be closed and rehabilitated (section 5.1.1), and erosion of steep sections reduced by diverting runoff from track surfaces. Fire access tracks need to meet CFA standards, ie have vegetation trimmed to allow vehicle access. Existing tracks have adequate surfaces for CFA use (Peter Marke pers. comm.). Secure gates will be required at key entry-exit points.

Slashing beside the fire access track adjacent to Glenfern Road appears to be excessive and should not exceed the requirements for fire protection.

Management actions

26. *Install and maintain robust cable fencing, gates and signs to minimise illegal access. Arrange for supporting education campaigns, patrols and well-publicised enforcement. Consider similar measures for the Melbourne Water retarding basin and New Road opposite Gilmour Park.*
27. *Design and construct an informal, fenced gravel carpark near the gate on Glenfern Road with provision for 10-15 vehicles and up to 2 buses. Provide appropriate access from Glenfern Road. Provide secure gated access into the reserve for management vehicles.*
28. *Provide for and maintain management and fire access tracks as shown on figure 4. Contain slashing adjacent to the Glenfern Road track and rehabilitate remaining tracks.*

5.2.2 Informal recreation

While the reserve will provide a range of opportunities for informal recreation, potential activities are constrained by sensitive flora and fauna, erodible soils and the need to avoid conflicts between different types of users.

Walking, picnicking, sightseeing and nature observation are compatible with the protection of natural values. **Horse riding, mountain bike riding and sporting activities** are likely to have unacceptable impacts, and are adequately catered for elsewhere in the region.

The reserve is likely to be moderately popular as a visitor destination and facilities such as tables, seats and possibly a picnic shelter are appropriate. More intensive facilities such as toilets and barbecues could be considered in the long term, depending on demand.

Dogs can adversely affect wildlife and other users, and some regulation of access is appropriate, particularly in areas of high conservation value.

Information and interpretation services would assist visitors to appreciate the area (section 5.3.2)

Management actions

29. *Design and install appropriate facilities adjacent to the proposed carpark off Glenfern Road, eg orientation signs, tables, seats and a shelter. Consider additional facilities in the medium to long term.*
30. *Encourage compatible recreation including cycling on tracks where impacts are acceptable. Do not permit horse riding, or mountain bike riding in bushland areas or on erodable tracks.*
31. *Require dogs to be on leads at all times and exclude dogs from significant conservation areas.*

5.2.3 Walking tracks

Walking is the most popular recreational activity away from home and is now recognised as a valuable form of exercise. Opportunities for enjoyable walking should therefore be maximised in the reserve. There are several current constraints including steep slopes on many tracks, rough track surfaces, fallen vegetation and poor locations with respect to views and natural features.

Future walking tracks should provide visitors with opportunities to see the most intact parts of the reserve, particularly the woodland areas where weeds have been controlled and the riparian forest along the creek. Loop tracks and a linking track to Gilmour Park are also highly desirable. For people with limited mobility, parking in Gilmour Park and walking into the reserve along a track following Ferny Creek would provide a good experience.

Tracks retained for management access (section 5.2.1) should be available for walking, supplemented by new tracks which follow comfortable grades and provide access to attractive areas. A possible future slashed grass track is shown in figure 4. The alignment will need to be carefully assessed to minimise impacts on vegetation.

Interpretive information could be provided for a loop walk from the proposed carpark on Glenfern Road (section 5.3).

Tracks should be wide enough for two people to walk side by side, with stable gravel, earth or slashed grass surfaces. Basic drainage is desirable where track surfaces are likely to be eroded by runoff after rain. Clear track signs are important to help visitors orient themselves and select a preferred route.

Archery Club activities need to ensure safety of people walking along the track beside Ferny Creek, adjacent to the Club (section 5.2.4).

Management actions

32. *Improve and maintain appropriate management tracks to provide for the needs of walkers (and management use).*
33. *Establish carefully-sited new tracks to enhance visitor experience. Include a link track to Gilmour Park and, in the medium term, consider a well-graded link from the proposed carpark to the track along the creek (figure 4).*
34. *Provide track signs at all track starting points and intersections to assist visitors to explore the reserve and Gilmour Park.*

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, steep and uneven ground, archery activities (section 5.2.5) and illegal vehicle use. Recreation facilities also involve some risks.

Action is needed to minimise these risks with emphasis placed on fire safety, regular inspection and maintenance, and high standards for new facilities. Adequately maintained fire access tracks are important to meet the objectives of Council's Regional Fire Protection Plan (section 5.2.1).

Management actions

35. *Ensure compliance with DSE/Council risk management requirements including regular inspection of trees and facilities and timely action to deal with identified hazards.*
36. *Maintain up to date fire and evacuation plans for the area in conjunction with the CFA as part of Council's Regional Fire Protection Plan.*
37. *Do not permit open fires in 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 20 years. Much of the land used is in a freehold retarding basin owned by Melbourne Water, but use extends well outside this area into the reserve. The club has a lease with Melbourne Water, currently due for renewal.

Activities of the club have adversely affected indigenous understorey vegetation near the creek and weeds are a significant problem in bushland areas where a series of targets are located. Protection of the streamside environment and control of invasive weeds are desirable to improve natural values. This will require relocation of targets from land between the creek and the adjacent existing management/walking track.

Fencing of the archery area is inadequate in places and visitors to the area can easily enter the archery area, providing public safety issues (section 5.2.4). Public access along Ferny Creek is highly desirable to provide a link between the reserve and Gilmour Park (section 5.2.3).

A survey undertaken by DSE in September 2003 has clearly defined the freehold land and a possible lease area.

Management actions

38. *Negotiate a lease, in conjunction with Melbourne Water, for continued use by the archery club. Include requirements for boundary fencing, warning signs, ongoing cooperative weed control and revegetation, protection of land adjacent to Ferny Creek and safe public walking access along the creek.*

5.3 Goal 3: Involve the community in the reserve

5.3.1 Community involvement

There has been little community involvement in the reserve until the recent formation of the Friends group. Excellent progress has since been made, particularly with rubbish removal, weed control and monitoring of flora and fauna. Ongoing involvement of the Friends and other volunteers is highly desirable to assist with management and related activities such as weed control and revegetation, monitoring flora and fauna, assisting with funding applications, preparing newsletters and interpreting the area's values. Council and DSE could assist with technical support e.g. to guide vegetation management.

Archery club members benefit directly from their use of the reserve and can be expected to contribute more to its management (section 5.2.5).

5.3.2 Interpretation and education

Interpretation is an informal education activity designed to increase community understanding, appreciation and enjoyment of natural and cultural features. Interpretive opportunities in the reserves include basic interpretive signs and publications, guided walks and activity programs. Community involvement in the provision of these services is desirable and should be encouraged and supported. Potential themes to be interpreted include changing attitudes and uses of the land, and vegetation communities.

A self-guided looped nature walk would provide a focus for visitors, providing access to grassland, woodland and riparian areas and highlighting changes to the reserve, eg Aboriginal use, grazing, quarrying, neglect and, now, conservation and appreciation. The walk could link with Gilmour Park where detailed interpretive signs are provided.

An interpretive shelter could be installed near the proposed carpark once illegal access and vandalism have been substantially reduced.

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 open space use are well established. There are opportunities to promote the reserve more actively through newspapers, Council publications (including the website), walking groups etc and encourage increased use for compatible activities and events. An occasional newsletter would help update users.

Annual or more frequent events could be organised to showcase recent improvements and promote increased volunteer support.

Management actions

39. *Provide ongoing encouragement and support for the Friends group and other community volunteers.*
40. *Use local papers, newsletters, Council publicity, events and other means to encourage greater use and appreciation of the reserve.*
41. *Encourage volunteers to assist with the provision of interpretive services including a self-guided nature walk, guided walks, leaflets and signs.*
42. *Encourage local schools to undertake revegetation, monitoring and related activities.*

5.4 Goal 4: Ensure sound and sustainable management

5.4.1 Management responsibility and reservation

DSE has very little land management capability and the area has been largely unmanaged until the Friends group became involved recently. Future management by the Shire, as Committee of Management under the *Crown Land (Reserves) Act 1978*, is proposed as an outcome of the management planning process.

Experience in park and reserve management indicates that clear responsibility within Council for management of the reserve is essential for effective implementation of this plan and sound ongoing management. A close working relationship with the Friends group will also be important.

5.4.2 Leases and boundary issues

Several issues were identified (see DSE Plan NW/02.09.2003)

- Use of the fenced compound in the south east part of the reserve by South East Water, for sewerage deposition, needs to be formalised with a lease. A recent DSE survey has defined the lease area. The visual amenity of the area needs to be improved and an access gate in the north east corner is desirable to provide access for CFA and management vehicles (figure 4).
- A lease is required with the archery club (section 5.2.5).
- An old road alignment off Glenfern Road is vested in Council. Surrender to the Crown would enable the land to be included in the reserve
- An adjoining owner has encroached on 780 sq m of land along the south east boundary. Action is needed to have the fence realigned.

5.4.3 Management resources

Very few resources have been available for management of the reserve in the past. There is no plant and equipment or other assets available for management, and no operating budget.

The State Government and Council have each committed \$50,000 for the preparation and implementation of this management plan. This will need to be supplemented by grants, lease payments, commercial sponsorship, employment programs and a modest ongoing budget for vegetation management and maintenance of the reserve.

Technical input is also important to ensure that management and volunteer activities are based on environmentally sound principles.

5.4.4 Sustainable management

Sustainable management principles should be applied to facilities and services in parks and reserves. These include minimising use of energy and non-renewable resources, recycling, providing effective waste treatment, 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. Encouraging visitors to take their rubbish home and recycle it will minimise resources needed to handle rubbish.

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

- Implementation of actions in management plan

Financial

- Achievement of budget targets.
- Grants and sponsorship received

Environmental:

- Prevention of illegal vehicle entry and associated damage to soils and vegetation
- Improvements in indigenous vegetation
- Reductions in invasive weeds

Visitors and facilities:

- Increase in compatible recreational use
- Improvement in visitor facilities

Management actions

43. *Arrange temporary reservation of Glenfern Valley Bushlands 'for the conservation of an area of natural interest and recreation', under the Crown Land (Reserves) Act, and appoint the Yarra Ranges Shire Council as committee of management.*
44. *Arrange for reservation for 'Public Purposes', and a suitable lease with South East Water, for ongoing use and maintenance of the sewerage deposition compound and access road.*
45. *Arrange for surrender of the old Glenfern Road alignment to the Crown for inclusion in the reserve.*
46. *Request the adjoining landowner to re-align the fence on the south east boundary.*
47. *Actively seek grants, sponsorship and other resources to ensure adequate ongoing management of the reserve.*
48. *Undertake annual monitoring of implementation of this plan and management performance in the reserve.*
49. *Review this plan and update as required by 2010.*

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 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	Ferny Creek riparian strip			
	1. Where practicable, relocate tracks away from sensitive areas and fauna habitat.	SYR	\$	●●
	2. Undertake targeted control of woody weeds and highly invasive herbaceous species.	SYR, Friends, Archery club	\$	●●●
	3. Allow natural regeneration to progressively fill open areas in the Riparian Forest that have been disturbed by activities associated with the archery club.	Archery club		Ongoing
	Creek flats			
	4. Undertake weed control as appropriate, concentrating on herbaceous weeds within areas dominated by native species in the Wetland Formation.	SYR, Friends	\$	●●
	5. Allow natural regeneration to progressively fill open areas within the ephemeral wetland.	SYR, Friends		Ongoing
	Grassy forest (west & central)			
	6. Undertake targeted control of woody weeds	SYR, Friends	\$	●●●
	7. Allow natural regeneration to progressively fill open areas and areas recently disturbed by earthworks near Glenfern Road.	SYR, Friends		Ongoing
	8. Monitor tree decline.	SYR, Friends		●●
	9. Prevent the illegal dumping of garden waste which facilitates the spread of introduced plant species.	SYR	\$	●●●
	Grassy forest (south-east)			
	10. Undertake targeted control of woody weeds on the margins of higher quality areas, working outwards from areas of higher quality and allowing indigenous species to naturally regenerate.	SYR, Friends	\$	●●
Grassy upper slopes				
11. Slash grassland in the first half of January following seed-set in Kangaroo Grass <i>Themeda triandra</i> , to promote seed germination.	SYR	\$	●●●	
12. Remove soil and other debris dumped by contractors.	SYR	\$\$	●●●	
Degraded upper slopes				
13. Slash exotic grassland more frequently than the 'Grassy upper slopes', particularly in winter/spring, to reduce seed production by introduced grasses.	SYR	\$	●●●	
14. Remove cypresses along Glenfern Road and replace with indigenous woodland species planted in groupings simulating natural occurrences.	SYR, Friends	\$\$	●	
Former quarry site				

Goal	Action (not in priority order)	Respon'y *	Est. cost **	Priority ***
	15. Undertake targeted control of highly invasive weeds and undertake planting of indigenous species (particularly trees) to eventually shade out weeds.	SYR, Friends	\$	●
	16. Prevent introduced species from migrating into adjacent bushland.	SYR, Friends	\$	●●
	Pest animals			
	17. Monitor threats from foxes and other pest species and undertake control programs where appropriate in conjunction with DSE and adjacent landowners.	SYR	\$	●●
	Landscape values			
	18. Ensure that all management activities enhance landscape values and design all future facilities and structures, including site entry points on Glenfern Road, to complement the site's bushland setting.	SYR		Ongoing
	19. Remove and replace, where appropriate, existing mesh and wire fencing, signs and facilities	SYR, Friends	\$	●●●
	20. Continue to remove rubbish from the reserve.	SYR, Friends	\$	●●●
	21. Remove waste materials at the sewer access site and undertake boundary planting with indigenous species.	SEW	[SEW]	●●●
	Water quality			
	22. Liaise with Melbourne Water regarding the installation of litter traps near Forest Park Drive.	SYR		●●
	Fire			
	23. In consultation with the CFA and DSE, plan for ecological burning to enhance the site's natural values.	SYR, Friends	\$	●
	Cultural heritage			
	24. Consult with Aboriginal Affairs Victoria and local Aboriginal communities regarding the identification and protection of any potential Aboriginal sites.	SYR, DSE		Ongoing
	25. Encourage research on the history of the site and incorporate in interpretation programs.	SYR, Friends		●
5.2 Provide safe and compatible recreation opportunities	26. Install and maintain robust cable fencing, gates and signs to minimise illegal access. Arrange for supporting education campaigns, patrols and well-publicised enforcement. Consider similar measures for the Melbourne Water retarding basin and New Road opposite Gilmour Park.	SYR	\$\$\$	●●●
	27. Design and construct an informal, fenced gravel carpark near the gate on Glenfern Road with provision for 10-15 vehicles and up to 2 buses. Provide appropriate access from Glenfern Road.	SYR	\$\$\$	●●●
	28. Provide for and maintain management and fire access tracks as shown on figure 4. Contain slashing adjacent to the Glenfern Road track and rehabilitate remaining tracks	SYR, Friends	\$	●●●
	29. Design and install appropriate facilities adjacent to the proposed carpark off Glenfern Road, eg orientation signs, tables, seats and a shelter. Consider additional facilities in the medium to long term.	SYR	\$\$	●●●
	30. Encourage compatible recreation including cycling on tracks where impacts are acceptable. Do not permit horse riding, or mountain bike riding in bushland areas or on erodable tracks.	SYR		Ongoing
	31. Require dogs to be on leads at all times and exclude dogs from significant conservation areas.	SYR		●●●
	32. Improve and maintain appropriate management tracks to provide for the needs of walkers (and management use).	SYR, Friends	\$	●●

Goal	Action (not in priority order)	Respon'y *	Est. cost **	Priority ***
	33. Establish carefully-sited new tracks to enhance visitor experience. Include a link track to Gilmour Park and, in the medium term, consider a well-graded link from the proposed carpark to the track along the creek (figure 4).	SYR, Friends	\$ \$	●●● -●●
	34. Provide track signs at all track starting points and intersections to assist visitors to explore the reserve and Gilmour Park.	SYR, Friends	\$	●●●
	35. Ensure compliance with DSE/Council risk management requirements including regular inspection of trees and facilities and timely action to deal with identified hazards.	SYR, DSE	\$	●●●
	36. Maintain up to date fire and evacuation plans for the area in conjunction with the CFA as part of Council's Regional Fire Protection Plan.	SYR		●●●
	37. Do not permit open fires in the reserve.	SYR		Ongoing
	38. Negotiate a lease, in conjunction with Melbourne Water, for continued use by the archery club. Include requirements for boundary fencing, warning signs, ongoing cooperative weed control and revegetation, protection of land adjacent to Ferny Creek and safe public walking access along the creek.	SYR, DSE, archery club	[club]	●●●
5.3 Involve the community in the reserve	39. Provide ongoing encouragement and support for the Friends group and other community volunteers.	SYR		●●●
	40. Use local papers, newsletters, Council publicity, events and other means to encourage greater use and appreciation of the reserve.	SYR, Friends	\$	●●
	41. Encourage volunteers to assist with the provision of interpretive services including a self-guided nature walk, guided walks, leaflets and signs.	SYR, Friends	\$	●●
	42. Encourage local schools to undertake revegetation, monitoring and related activities.	SYR, Friends		●●
5.4 Ensure sound and sustainable management	43. Arrange temporary reservation of Glenfern Valley Bushlands 'for the conservation of an area of natural interest and recreation', under the Crown Land (Reserves) Act, and appoint the Yarra Ranges Shire Council as committee of management.	DSE, SYR		●●●
	44. Arrange for reservation for 'Public Purposes', and a suitable lease with South East Water, for ongoing use and maintenance of the sewerage deposition compound and access road.	DSE, SYR		●●●
	45. Arrange for surrender of the old Glenfern Road alignment to the Crown for inclusion in the reserve.	DSE, SYR		●●
	46. Request the adjoining landowner to re-align the fence on the south east boundary.	DSE, SYR		●●●
	47. Actively seek grants, sponsorship and other resources to ensure adequate ongoing management of the reserve.	SYR, Friends		Ongoing
	48. Undertake annual monitoring of implementation of this plan and management performance in the reserve.	SYR, DSE		Ongoing
	49. Review this plan and update as required by 2010.	SYR, DSE		●

* SYR: Shire of Yarra Ranges, DSE: Dept of Sustainability and Environment, SEW: South East Water

** \$ = < \$2500, \$\$ = \$2500-10,000, \$\$\$ = > \$10,000.
Assumes volunteer labour available (Friends, Archery Club etc) to assist with tasks including weed control, revegetation and rubbish removal. Does not include agency 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).

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See appendix 2 for additional references.

Personal communications

Peter Marke, CFA, September 11, 2003

Appendix 1: Chronology of the reserve

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

Date	Information /Activity	Source*
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
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
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

Date	Information /Activity	Source*
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	1

Sources

- 1 DSE Glenfern Road files (Box Hill office)
- 2 CFA: Graham Brew, Peter Hall, 4-7-03

Appendix 2: State, regional and local strategies and plans

Document	Content
<i>State</i>	
<i>Victoria's Biodiversity – Our Living Wealth; Sustaining Our Living Wealth; Directions in Management, NRE 1997</i>	Sets out a detailed strategy for maintaining biodiversity across the State, including protection of significant species and habitats.
<i>Victoria's Native Vegetation Management – A Framework for Action, NRE, 2002</i>	Sets out principles for vegetation protection and enhancement across Victoria (particularly on private land). Includes 'Net Gain' principle, which aims to avoid further vegetation losses, sets priorities for protection and describes methods to offset losses.
<i>Victorian Trails Strategy 2001-2004 (draft) Victorian Trails Coordinating Committee, 2001</i>	This broad strategy provides details of existing trails, uses and benefits, and setting out a strategy for the future. Notes importance of short trails and attractive and diverse settings. Research indicates Victorians want trails with good surfaces, signs, information and services. Proposes well-managed major trails, completion of gaps and closing of trails that cannot be maintained.
<i>ERASS – the Exercise, Recreation and Sport Survey, Australian Sports Commission, 2001</i>	Provides details of participation in sport and physical activities. Walking is the dominant physical activity (29% - plus 5% bushwalking), followed by swimming (16%) and aerobics/fitness (13%).
<i>Regional</i>	
<i>Linking People + Places – A strategy for Melbourne's open space network, Parks Victoria, 2002</i>	The strategy reviews existing regional open space, sets out the benefits of open space and principles for management, and recommends actions for future open space provision. The report focuses on regional open space and does not specifically mention Glenfern Valley. Relevant priority actions include conservation of natural values, trail links between open space areas and improved access, diversity and sustainability. A trail link is proposed between Lysterfield Lake Park and Belgrave via Birds Land Reserve, east of Glenfern Valley.
<i>Melbourne 2030: Planning for Sustainable Growth, DOI, 2002</i>	The Reserve is outside the Urban Growth Boundary in this Strategy.
<i>Yarra Ranges Shire Planning Scheme and Municipal Strategic Statement (MSS)</i>	Refer Council web site.
<i>Open Space Strategy, Shire of Yarra Ranges, 1998</i>	Includes strategic directions to provide diverse open space, protect natural environments, improve services, ensure sustainability, allocate more resources to less structured areas of open space and establish partnerships. Recommends retention of the study area for environmental protection and recreation. Recommends development of a trail along Ferny Creek (Upwey South Reserve to Gilmour Park).
<i>Local</i>	
<i>Corhanwarrabul Creek Activity Plan, Melbourne Water, 1999</i>	Discusses values, issues and strategies for Ferny Creek and other waterways in area. Supports open space corridor upstream of Gilmour Park. Recommends weed control along

Document	Content
	creek, monitoring of bank erosion near archery club and removal of rubbish by club. Also discusses poor water quality in Ferny Creek, eg near Morris Rd.
<i>Management Plan for Gilmour Park, Knox City Council, 1997</i>	Detailed plan setting out values, issues, actions and priorities for future management. Proposes cooperative management by the City, Melbourne Water and Shire of Yarra Ranges. Includes program to control off-road vehicles on adjacent land. Recommends dogs on leads only.

Appendix 3: Ecological vegetation classes at Glenfern Valley

Descriptions of the EVCs at Glenfern Valley are given in the following table.

<i>Ecological vegetation class</i>	<i>Description</i>
Valley Grassy Forest	<p>Woodland to open forest on well-drained colluvial soils, with a diverse ground layer of graminoids and forbs. The overstorey is characterised by Bundy <i>Eucalyptus goniocalyx</i>, Narrow-leaf Peppermint <i>E. radiata</i> and Yellow Box <i>E. melliodora</i> in association with Black Wattle <i>Acacia mearnsii</i> and Cherry Ballart <i>Exocarpos cupressiformis</i>. The shrub layer is sparse, while the ground layer is characterised by Weeping Grass <i>Microlaena stipoides</i>, Kangaroo Grass <i>Themeda triandra</i>, Soft Tussock-grass <i>Poa morrisii</i>, Veined Spear-grass <i>Austrostipa rudis</i>, Bidgee Widgee <i>Acaena novae-zelandiae</i>, Creeping Bossiaea <i>Bossiaea prostrata</i>, Kidney-weed <i>Dichondra repens</i>, Pale Sundew <i>Drosera peltata</i>, Cranesbill <i>Geranium</i> spp., Pennywort <i>Hydrocotyle</i> spp., Small St John's Wort <i>Hypericum gramineum</i> and Wattle Mat-rush <i>Lomandra filiformis</i>.</p> <p>Valley Grassy Forest occupies the north-east to north-west slopes of the reserve between Glenfern Road and Ferny Creek.</p>
Herb-rich Foothill Forest	<p>Woodland on well-drained soils in foothill areas, with a ground layer rich in herbaceous species. At the site, this EVC is dominated by a very sparse canopy layer of Swamp Gum <i>Eucalyptus ovata</i> and Narrow-leaf Peppermint, with the smaller trees, Black Wattle and Cherry Ballart common. The understorey is characterised by a range of graminoids and forbs including Weeping Grass, Kangaroo Grass, Common Maidenhair <i>Adiantum aethiopicum</i> and Kidney-weed.</p> <p>Herb-rich Foothill Forest occurs on the east-facing slopes in the east of the reserve between Glenfern Road and Ferny Creek.</p>
Riparian Forest	<p>Tall forest to 40 metres on deep fertile soils. The overstorey is dominated by Manna Gum <i>Eucalyptus viminalis</i>, over a secondary tree layer of Blackwood <i>Acacia melanoxylon</i>, Silver Wattle <i>A. dealbata</i> and Hazel Pomaderris <i>Pomaderris aspera</i>. The shrub layer is characterised by Snow Daisy-bush <i>Olearia lirata</i>, Prickly Currant-bush <i>Coprosma quadrifida</i> and Victorian Christmas-bush <i>Prostanthera lasianthos</i>, while the ground layer is dominated by Sword Tussock-grass <i>Poa ensiformis</i>, Weeping Grass, Common Maidenhair and Stinking Pennywort <i>Hydrocotyle laxiflora</i>.</p> <p>Riparian Forest occurs along Ferny Creek and the alluvial flats associated with the creek.</p>
Wetland Formation	<p>Freshwater Wetland on poorly drained areas, consisting of a mosaic of hermland/rushland/sedgeland. The vegetation is dominated by Austral Rush <i>Juncus australis</i>, Bidgee-widgee and Common Reed <i>Phragmites australis</i>.</p> <p>Wetland Formation occurs on the alluvial flat associated with Ferny Creek.</p>

Appendix 4: Existing conditions - management units

Details of conditions for the seven management units were as follows.

1 Ferny Creek riparian strip

This management unit incorporates Ferny Creek and the tall forest dominated by large, hollow-bearing Manna Gums, which occur along the length of the creek.

Issues

- Localised weed invasions, particularly Sweet Pittosporum, Panic Veldt-grass, Tradescantia, Three-corner Garlic, English Ivy, Soursob and Cocksfoot
- Poor water quality in Ferny Creek – potential impacts on aquatic fauna
- Suitable habitat for significant fauna species, e.g. bird species
- Impact of archery club activities on forested areas
- Opportunities for walking track access links, both up and down stream

2 Creek flats

The alluvial flats associated with Ferny Creek incorporate a retarding basin managed by Melbourne Water, which is used by the Sherbrooke Archers Club. Prior to being cleared of trees, this area would have supported a tall forest dominated by Manna Gums and/or Swamp Gums. An area of Wetland Formation occurs at the eastern end of the creek flats.

Issues

- Overstorey and midstorey previously cleared for retarding basin.
- Used by archery club
- Extensive weed invasion (e.g. Creeping Buttercup, Cocksfoot) in Wetland Formation east of the archery club
- Future protection of suitable understorey cover for ground dwelling species such as Swamp Rats

3 Grassy forest (west & central)

This management unit incorporates remnant Valley Grassy Forest in poor to very good condition.

Issues

- Open forest dominated by a range of eucalypts over an understorey of varying quality
- Localised weed invasions, particularly Boneseed, Blackberry, Panic Veldt-grass and Cocksfoot
- Successful Boneseed and Blackberry eradication works have been undertaken, with a predominantly indigenous understorey occurring in these areas
- Significant eucalypt dieback occurring (possible causes: drought stress, overgrazing by possums, Bellbird competition, Cinnamon fungus?)
- Native vegetation has been bulldozed along Glenfern Road (south-east of site) – rehabilitate?
- Investigate feasibility of conducting ecological burns to eliminate mature weeds and promote germination of indigenous species. Need to provide ongoing weed control.
- Archery club uses forested areas outside leased area – degraded vegetation and safety issues.

4 Grassy forest (south-east)

This management unit incorporates remnant Herb-rich Foothill Forest in poor to moderate condition.

Issues

- Highly modified forest, with few eucalypts remaining

- Major weed invasion, particularly Sweet Pittosporum and Boneseed
- No weed control undertaken
- Significant eucalypt dieback occurring (possible causes: drought stress, overgrazing by possums, Bellbird competition and Cinnamon fungus?)
- Possibility of conducting ecological burns to kill the fire-sensitive Sweet Pittosporum and promote germination of indigenous species. Follow-up weed control needed.
- SE Water responsible for sewer area. Needs tidy up (proposed By SEW) and lease.

5 Grassy upper slopes

This management unit predominantly comprises grassland dominated by a mixture of indigenous and exotic species.

Issues

- Most shrubs and overstorey species have been removed by past clearing practices
- Slashing regime could be altered to promote growth of native species and discourage seed-set in introduced species
- Little weed control undertaken
- Ground debris such as large logs, rocks and bark should be left on the ground, as they provide suitable protection and foraging opportunities for many fauna species
- Soil and other debris dumped by contractors needs to be moved
- The need for the firebreak along Glenfern Road should be reviewed as the opposite side of road is predominantly pasture

6 Degraded upper slopes

This area is highly modified and devoid of native vegetation.

Issues

- Heavy weed invasion
- Removal of cypresses
- Opportunity to revegetate in the future, retaining some views
- Possible future location of parking and visitor facilities

7 Former quarry site

This area is highly modified and devoid of native vegetation.

Issues

- Serious weed invasion (e.g. Cape Ivy, Kikuyu, Hemlock) requires action
- Planting likely to be needed where fill has been dumped

Appendix 5: Flora species list

Significance of species: R = Regional (Highlands Southern Fall Bioregion)
 Note: All other indigenous species have local conservation significance

Significance	Scientific name	Common name
	Indigenous species	
	<i>Acacia dealbata</i>	Silver Wattle
	<i>Acacia mearnsii</i>	Black Wattle
	<i>Acacia melanoxylon</i>	Blackwood
	<i>Acacia stricta</i>	Hop Wattle
	<i>Acacia verticillata</i>	Prickly Moses
	<i>Acaena novae-zelandiae</i>	Bidgee-widgee
	<i>Acaena ovina</i>	Sheeps Burr
	<i>Acrotriche prostrata</i>	Trailing Ground Berry
	<i>Acrotriche serrulata</i>	Honeypots
	<i>Adiantum aethiopicum</i>	Common Maidenhair
	<i>Ajuga australis</i>	Austral Bugle
	<i>Alisma plantago-aquatica</i>	Water Plantain
	<i>Amyema pendula</i>	Drooping Mistletoe
R	<i>Amyema quandang</i> var. <i>quandang</i>	Grey Mistletoe
	<i>Arthropodium strictum</i>	Chocolate Lily
	<i>Asperula euryphylla</i>	Broad-leaf Woodrush
	<i>Austrocynaglossum latifolium</i>	Forest Hound's Tongue
R	<i>Austrodanthonia fulva</i>	Copper-awned Wallaby-grass
	<i>Austrodanthonia laevis</i>	Wallaby Grass
	<i>Austrodanthonia pennicillata</i>	Slender Wallagy Grass
R	<i>Austrofestuca hookeriana</i>	Hooker Fescue
	<i>Austrostipa rudis</i> ssp. <i>rudis</i>	Veined Spear-grass
	<i>Billardia scandens</i>	Common Appleberry
	<i>Bossiaea prostrata</i>	Creeping Bossiaea
	<i>Burchardia umbellata</i>	Milkmaids
	<i>Bursaria spinosa</i> ssp. <i>spinosa</i>	Sweet Bursaria
	<i>Calochlaena dubia</i>	Common Ground-fern
R	<i>Calystegia marginata</i>	Forest Bindweed
	<i>Carex appressa</i>	Tall Sedge
	<i>Carex breviculmis</i>	Short-stem Sedge
	<i>Carex inversa</i>	Knob Sedge
	<i>Carex</i> spp.	Sedge
	<i>Cassinia aculeata</i>	Common Cassinia
	<i>Cassinia longifolia</i>	Shiny Cassinia
	<i>Centella cordifolia</i>	Centella
	<i>Cheilanthes austrotenuifolia</i>	Rockfern
R	<i>Cheilanthes sieberi</i> ssp. <i>sieberi</i>	Narrow Rock-fern
R	<i>Chiloglottis valida</i>	Common Bird Orchid
	<i>Clematis aristata</i>	Mountain Clematis
	<i>Clematis microphylla</i>	Small Leaf Clematis
	<i>Coprosma quadrifida</i>	Prickly Currant-bush
R	<i>Cotula australis</i>	Common Cotula
	<i>Cyathea australia</i>	Rough Tree Fern
	<i>Daviesia latifolia</i>	Hop Bitter-pea
	<i>Desmodium gunnii</i>	Southern Tick-trefoil
	<i>Deyeuxia quadriseta</i>	Bent Reed Grass
	<i>Dianella longifolia</i> var. <i>longifolia</i>	Pale Flax-lily
	<i>Dianella revoluta</i> s.s.	Black-anther Flax-lily
	<i>Dianella tasmanica</i>	Flax Lily

Significance	Scientific name	Common name
	<i>Dichondra repens</i>	Kidney-weed
R	<i>Doodia caudata</i>	Small Rasp-fern
	<i>Drosera peltata</i>	Pale Sundew
	<i>Drosera whittakeri</i> ssp. <i>aberrans</i>	Scented Sundew
	<i>Echinopogon ovatus</i>	Forest Hedgehog Grass
	<i>Epacris impressa</i>	Common Heath
	<i>Epilobium billardierianum</i> ssp. <i>cinereum</i>	Grey Willow-herb
	<i>Eragrostis brownii</i>	Common Love-grass
	<i>Eucalyptus goniocalyx</i> s.s.	Bundy
	<i>Eucalyptus melliodora</i>	Yellow Box
	<i>Eucalyptus obliqua</i>	Messmate Stringybark
	<i>Eucalyptus ovata</i>	Swamp Gum
	<i>Eucalyptus radiata</i> ssp. <i>radiata</i>	Narrow-leaf Peppermint
	<i>Eucalyptus viminalis</i> ssp. <i>viminalis</i>	Manna Gum
	<i>Euchiton collinus</i>	Common Cudweed
	<i>Euchiton</i> spp.	Cudweed
	<i>Exocarpos cupressiformis</i>	Cherry Ballart
	<i>Gahnia radula</i>	Thatch Saw-sedge
	<i>Galium</i> spp.	Bedstraw
	<i>Geranium potentilloides</i> var. <i>potentilloides</i>	Soft Cranesbill
R	<i>Geranium</i> sp. 2	Variable Cranesbill
	<i>Geranium</i> spp.	Cranesbill
	<i>Glycine clandestina</i>	Twining Glycine
R	<i>Glycine microphylla</i>	Small-leaf Glycine
	<i>Gonocarpus tetragynus</i>	Common Raspwort
	<i>Goodenia ovata</i>	Hop Goodenia
	<i>Gratiola peruviana</i>	Austral Brooklime
R	<i>Gratiola pubescens</i>	Brooklime
	<i>Gynatrix pulchella</i> s.s.	Hemp Bush
	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort
	<i>Hydrocotyle</i> spp.	Pennywort
	<i>Hypericum gramineum</i>	Small St John's Wort
R	<i>Hypoxis vaginata</i>	Yellow Star
R	<i>Juncus australis</i>	Austral Rush
	<i>Juncus pauciflorus</i>	Loose-flower Rush
	<i>Juncus planifolius</i>	Broad Leaf Rush
	<i>Juncus procerus</i>	Tall Rush
	<i>Kennedia prostrata</i>	Running Postman
	<i>Kunzea ericoides</i>	Burgan
	<i>Lagenophora</i> spp.	Bottle Daisy
	<i>Lepidosperma elatius</i>	Tall Sword-sedge
	<i>Lepidosperma laterale</i>	Variable Sword-sedge
	<i>Leptospermum continentale</i>	Prickly Tea-tree
	<i>Linum marginale</i>	Native Flax
	<i>Lomandra filiformis</i>	Wattle Mat-rush
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush
	<i>Lythrum hyssopifolia</i>	Small Loosestrife
	<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass
	<i>Microtis unifolia</i>	Common Onion Orchid
R	<i>Muellerina eucalyptoides</i>	Creeping Mistletoe
	<i>Olearia argophylla</i>	Musk Daisy-bush
	<i>Olearia lirata</i>	Snowy Daisy-bush
	<i>Opercularia ovata</i>	Broad-leaf Stinkweed
	<i>Oxalis perennans</i>	Yellow Wood-sorrel
	<i>Oxalis</i> spp.	Wood Sorrel
	<i>Ozothamnus ferrugineus</i>	Tree Everlasting

Significance	Scientific name	Common name
R	<i>Pandorea pandorana</i>	Wonga Vine
	<i>Pentapogon quadrifidus</i>	Five-awned spear Grass
	<i>Persicaria decipiens</i>	Slender Knotweed
	<i>Phragmites australis</i>	Common Reed
	<i>Pimelea axiflora</i>	Bootlace Bush
	<i>Pimelea humilis</i>	Common Rice-flower
	<i>Plantago varia</i>	Plantain
	<i>Poa ensiformis</i>	Sword Tussock-grass
	<i>Poa labillardierei</i> var. <i>labillardierei</i>	Common Tussock-grass
	<i>Poa morrisii</i>	Soft Tussock-grass
	<i>Polyscias sambucifolia</i>	Panax Elderberry
	<i>Polystichum proliferum</i>	Mother Shield-fern
	<i>Pomaderris aspera</i>	Hazel Pomaderris
	<i>Poranthera microphylla</i>	Small Poranthera
	<i>Prostanthera lasianthos</i>	Victorian Christmas-bush
	<i>Pteridium esculentum</i>	Austral Bracken
	<i>Rapanea howittiana</i>	Muttonwood
	<i>Rubus parvifolius</i>	Small-leaf Bramble
	<i>Rumex brownii</i>	Swamp Dock
	<i>Schoenus apogon</i>	Common Bog-sedge
	<i>Senecio glomeratus</i>	Annual Fireweed
	<i>Senecio minimus</i>	Shrubby Fireweed
	<i>Senecio quadridentatus</i>	Cotton Fireweed
	<i>Sigesbeckia orientalis</i> ssp. <i>orientalis</i>	Indian Weed
	<i>Solanum prinoophyllum</i>	Forest Nightshade
	<i>Solanum</i> spp.	Nightshade
	<i>Tetrarrhena juncea</i>	Forest Wire-grass
	<i>Thelymitra</i> spp.	Sun Orchid
	<i>Themeda triandra</i>	Kangaroo Grass
	<i>Trycoryne elatior</i>	Yellow Rush-lily
	<i>Veronica calycina</i>	Hairy Speedwell
	<i>Viola hederacea</i> sensu Entwisle (1996)	Ivy-leaf Violet

Introduced species

<i>Acacia baileyana</i>	Cootamundra Wattle
<i>Acacia decurrens</i>	Early Black Wattle
<i>Acacia elata</i>	Cedar Wattle
<i>Acacia longifolia</i> ssp. <i>longifolia</i>	Sallow Wattle
<i>Acetosella vulgaris</i>	Sheep Sorrel
<i>Agapanthus praecox</i> ssp. <i>orientalis</i>	Agapanthus
<i>Agrostis capillaris</i> var. <i>aristata</i>	Browntop Bent
<i>Aira elegans</i>	Hair Grass
<i>Allium triquetrum</i>	Three-corner Garlic
<i>Anagallis arvensis</i>	Pimpernel
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Arctotheca calendula</i>	Cape Weed
<i>Asparagus asparagoides</i>	Bridal Creeper
<i>Aster subulatus</i>	Aster-weed
<i>Avena fatua</i>	Wild Oats
<i>Briza maxima</i>	Large Quaking Grass
<i>Briza minor</i>	Quaking Grass
<i>Bromus catharticus</i>	Prairie Grass
<i>Centaureum erythraea</i>	Common Centaury
<i>Chamaecytisus palmensis</i>	Tree Lucerne
<i>Chenopodium album</i>	Sowbane
<i>Chrysanthemoides monilifera</i>	Boneseed

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

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

Appendix 6: Fauna species list

Significance of species: R = Regional (Highlands Southern Fall Bioregion)
 S = State
 * = Introduced

Note: All other indigenous species have local conservation significance

Significance	Common Name	Scientific Name
	<i>Mammal (native)</i>	
	Platypus	Ornithorhynchus anatinus
	Short-beaked Echidna	Tachyglossus aculeatus
	Common Brushtail Possum	Trichosurus vulpecula
	Common Ringtail Possum	Pseudocheirus peregrinus
	Sugar Glider	Petaurus breviceps
S	Koala	Phascolarctos cinereus
	Common Wombat	Vombatus ursinus
	Black Wallaby	Wallabia bicolor
	Eastern Grey Kangaroo	Macropus giganteus
	Bush Rat	Rattus fuscipes
	Swamp Rat	Rattus lutreolus
	<i>Mammal (introduced)</i>	
*	House Mouse	Mus musculus
*	European Rabbit	Oryctolagus cuniculus
*	Red Fox	Canis vulpes
*	Cat (feral)	Felis catus
	<i>Birds (native)</i>	
	Little Pied Cormorant	Phalacrocorax melanoleucos
	Silver Gull	Larus novaehollandiae
	Australian White Ibis	Threskiornis molucca
	White-faced Heron	Egretta novaehollandiae
	Australian Wood Duck	Chenonetta jubata
	Pacific Black Duck	Anas superciliosa
	Brown Goshawk	Accipiter fasciatus
	Collared Sparrowhawk	Accipiter cirrhocephalus
R	Wedge-tailed Eagle	Aquila audax
R	Little Eagle	Hieraaetus morphnoides
	Black-shouldered Kite	Elanus axillaris
	Peregrine Falcon	Falco peregrinus
	Brown Falcon	Falco berigora
	Southern Boobook	Ninox novaeseelandiae
S	Powerful Owl	Ninox strenua
	Rainbow Lorikeet	Trichoglossus haematodus
	Musk Lorikeet	Glossopsitta concinna
R	Little Lorikeet	Glossopsitta pusilla
	Yellow-tailed Black-Cockatoo	Calyptorhynchus funereus
	Gang-gang Cockatoo	Callocephalon fimbriatum
	Sulphur-crested Cockatoo	Cacatua galerita
R	Little Corella	Cacatua sanguinea
	Galah	Cacatua roseicapilla
	Australian King-Parrot	Alisterus scapularis
	Crimson Rosella	Platycercus elegans
	Eastern Rosella	Platycercus eximius
	Tawny Frogmouth	Podargus strigoides
	Australian Owlet-nightjar	Aegotheles cristatus
	Laughing Kookaburra	Dacelo novaeguineae

Significance	Common Name	Scientific Name
	Sacred Kingfisher	Todiramphus sanctus
	White-throated Needletail	Hirundapus caudacutus
	Pallid Cuckoo	Cuculus pallidus
	Fan-tailed Cuckoo	Cacomantis flabelliformis
R	Brush Cuckoo	Cacomantis variolosus
	Horsfield's Bronze-Cuckoo	Chrysococcyx basalis
	Shining Bronze-Cuckoo	Chrysococcyx lucidus
	Welcome Swallow	Hirundo neoxena
	Tree Martin	Hirundo nigricans
	Fairy Martin	Hirundo ariel
	Grey Fantail	Rhipidura fuliginosa
R	Rufous Fantail	Rhipidura rufifrons
	Willie Wagtail	Rhipidura leucophrys
	Satin Flycatcher	Myiagra cyanoleuca
R	Rose Robin	Petroica rosea
	Eastern Yellow Robin	Eopsaltria australis
	Golden Whistler	Pachycephala pectoralis
	Rufous Whistler	Pachycephala rufiventris
	Olive Whistler	Pachycephala olivacea
	Grey Shrike-thrush	Colluricincla harmonica
	Magpie-lark	Grallina cyanoleuca
	Crested Shrike-tit	Falcunculus frontatus
	Black-faced Cuckoo-shrike	Coracina novaehollandiae
	Striated Thornbill	Acanthiza lineata
	Brown Thornbill	Acanthiza pusilla
	White-browed Scrubwren	Sericornis frontalis
	Superb Fairy-wren	Malurus cyaneus
	Dusky Woodswallow	Artamus cyanopterus
	Varied Sittella	Daphoenositta chrysoptera
	White-throated Treecreeper	Cormobates leucophaeus
	Mistletoebird	Dicaeum hirundinaceum
	Spotted Pardalote	Pardalotus punctatus
	Silvereye	Zosterops lateralis
	White-naped Honeyeater	Melithreptus lunatus
	Eastern Spinebill	Acanthorhynchus tenuirostris
	Yellow-faced Honeyeater	Lichenostomus chrysops
	White-eared Honeyeater	Lichenostomus leucotis
	White-plumed Honeyeater	Lichenostomus penicillatus
	New Holland Honeyeater	Phylidonyris novaehollandiae
	Bell Miner	Manorina melanophrys
	Noisy Miner	Manorina melanocephala
	Red Wattlebird	Anthochaera carunculata
	Red-browed Finch	Neochmia temporalis
	Pied Currawong	Strepera graculina
	Grey Currawong	Strepera versicolor
	Grey Butcherbird	Cracticus torquatus
	Australian Magpie	Gymnorhina tibicen

Significance	Common Name	Scientific Name
R	Bassian Thrush	Zoothera lunulata
	Little Raven	Corvus mellori
	Striated Pardalote	Pardalotus striatus
	<i>Birds (introduced)</i>	
*	Spotted Turtle-Dove	Streptopelia chinensis
*	Rock Dove	Columba livia
*	Common Blackbird	Turdus merula
*	House Sparrow	Passer domesticus
*	European Goldfinch	Carduelis carduelis
*	European Greenfinch	Carduelis chloris
*	Common Myna	Acridotheres tristis
*	Common Starling	Sturnus vulgaris
	<i>Reptiles</i>	
R	Tree Dragon	Amphibolurus muricatus
	Garden Skink	Lampropholis guichenoti
	Weasel Skink	Saproscincus mustelinus
	Common Blue-tongued Lizard	Tiliqua scincoides
	Tiger Snake	Notechis scutatus
	Lowland Copperhead	Austrelaps superbus
		<i>Frogs</i>
	Common Froglet	Crinia signifera
	Southern Brown Tree Frog	Litoria ewingii

Note: A number of additional species are likely to occupy habitats within Glenfern Valley Bushlands that have not been included above.