South Gippsland
Shire Council
Come for the beauty, Stay for the lifestyle

MOSSVALE PARK WEED MANAGEMENT PLAN

2007

Version 4

Thanks to the staff at South Gippsland Shire Council,

Mossvale Park Advisory Committee

Mal Gibson
Project Co-ordinator
West Gippsland Catchment Management Authority.

and other stakeholders for their contribution to

the development of the plan.

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Executive Summary

The West Gippsland Catchment Management Authority (WGCMA) has identified Mossvale Park as being a major source of current and future weed distribution, the weeds being Blackberry (*Rubus fruiticosa*), English Ivy (*Hedera helix*) and Silver Poplar (*Populus alba*) two of which thickly inhabit the riparian zone along the water course for the full length of the Park and beyond, two species are declared noxious weeds (English Ivy & Blackberry) As part of the authority's legislated requirement for river management have offered to remove the weeds from the riverbank and revegetate the resulting cleared areas.

The South Gippsland Shire Council (SGSC) currently owns part of and manages the remainder on behalf of the Department of Sustainability and Environment. The SGSC has appointed the Mossvale Park Advisory Committee (MPAC) to assist it in the parks' management.

Mossvale Park Advisory Committee (MPAC) has stated that the overall objectives of this weed management plan are to leave the entire area in a state where weeds can be viably managed in the long term and in particular,

- The silver/white (Populus alba))poplars gradually (staged over several years) removed
- Removal of the Ivy and other weed species, also staged in conjunction with the poplar removal.
- And replaced with non-weed species.
- The area in the SW of the Park should comprise a corridor adjacent to the river cleared of silver poplars plus selective clearing in the area required to maintain wind throw protection.
- Accept the WGCMA's offer of assistance and work in partnership if both parties objectives can be meet.
- That the Plan divides the WGMA staging into Three Management Zones/Stages. to achieve the above objectives

As the West Gippsland Catchment Management Authority is central to this weed Management Plan, creating close working partnerships with the authority and other associated groups is vital. As well as working with Council on the project, this organisation can assist the SGSC and MPAC in developing publicity, raising awareness and distributing information about the proposed works at Mossvale Park. Previous works at Stockyard Creek Foster has been identified as a successful model for community involvement and support.

It is recommended that SGSC, MPAC & WGCMA follow the major elements of Foster model.

The Weed Management strategy has been divided into four zones in line with the proposed staged weed removal, each zone is identified below showing

- Weed species present
- Weed status/priority

- Control timelines for various species
- Weed Management method.

As the majority of the proposed works and therefore the greatest amenity, vegetative and visual impact will occur in zones 1, 2, 3, emphasis has been place accordingly.

One of the overriding considerations in relation to WGCMAs' proposal is the recognition of the considerable changes to the visual and physical amenity to Mossvale Park, i.e. extensive 'opening up' of views across the adjacent farm land and therefore the major changes to how the weather impacts on the Park.

Revegetation schedule below shows the proposed timetable for works, the timing may however be six to twelve months later than shown depending the West Gippsland Catchment management authority's' budget constraints etc. If works were to commence in autumn 2008, the remaining schedule would still be valid depending on the availability of plant stock.

STAGE	AREA	WEED REMOVAL TIMING	ORDER PLANT STOCK	REVEGETATE
Stage 1	Zone 1	November 2007	November 2007	Spring 2008
Stage 2	Zone 3	November 2008	November 2008	Spring 2009
Stage 3	Zone 3	November 2009	November 2009	Spring 2010
Stage 4	Zone 4	Integrate into P & G Park maintenance cycles		

The proposed table of Capital works and maintenance schedules at the end of this document offer a staged program of works based on prioritised hierarchy of need i.e. priority of works of each zone over three stages. As funding opportunities arise, SGSC and MPAC in partnership with the various community groups and authorities may change the order priority based on funding dollars that fit with the various funding opportunities.

Costs applied to SGSC are based on two assumptions

1. That SGSC & MPAC will want clear and develop extra land in addition to that being revegetated by the WGCMA
2. That SGSC & MPAC will want to provide resources that will ensure success of this project in the long term.

Due to the anticipated community concern for the WGCMA proposed works in the Park, in particular issues like, visual amenity and significant tree removal, a strategic approach to community consultation will form the foundation to a successful weed eradication program. If the community are not involved in this process, the West Gippsland Catchment Management Authority may decide to proceed with other equally important works elsewhere.

Emphasis on the environmental benefits to be gained by the community, such as the elimination of an identified weed source which may adversely affect downstream activities, must form part of the strategy.

Highlighting the actual legal requirements of the various authorities may not alone prove effective.

Introduction

Plan development

The South Gippsland Shire Council (hereafter the 'SGSC') manages Mossvale Park for and on behalf of the South Gippsland Community. As part of the community consultation in managing the Park, SGSC has appointed an advisory committee, the Mossvale Park Advisory Committee (MPAC) whose role is to guide and advise the Council on the current and long term management of the Park.

The Weed Management Plan has been developed as a response to the severe weed infestation in the Park. The Mossvale Park Management Plan written by Andrew Paget in 1998 for SGSC identified the need for an integrated weed management approach as part of its recommendations for future park management and development. Up until now the sheer size of the problem combined with a lack of SGSC resources has resulted in the SGSC holding off works until a partnership could be developed with other local authorities. Such an opportunity has arisen, the West Gippsland Catchment Authority as part of it's Catchment Weed Eradication program has offered to remove a significant proportion of the large woody weeds (and other weeds that form an understorey) and revegetate the cleared areas along the Tarwin River West Branch riparian zone in Mossvale Park.

Principles/Objectives for the Weed Management Plan:

Developing a weed management plan helps identifiy important information that will increase the chances of success.

- The plan will identify the best time to control weeds and the best methods to use.
- Prioritise the use of the limited resources available to control weeds in the most effective manner.
- Following the plan will ensure that stakeholders will monitor results, measure progress against objectives, adapt to changing conditions and be able to take advantage of any opportunities that occur.
- The plan will also be very useful to support funding applications and will also provide a basis to report progress to funding bodies.

Mossvale Park Advisory Committee (MPAC) has stated that the overall objectives of this weed management plan are to leave the entire area in a state where weeds can be viably managed in the long term and in particular,

- The silver/white (Populus alba))poplars gradually (staged over several years) removed
- Removal of the Ivy and other weed species, also staged in conjunction with the poplar removal.
- And replaced with non-weed species.
- The area in the SW of the Park should comprise a corridor adjacent to the river cleared of silver poplars plus selective clearing in the area required to maintain wind throw protection.

- Accept the CMA's offer of assistance and work in partnership if both parties objectives can be meet.
- That the Plan divides the WGMA staging into Three Management Zones/Stages. to achieve the above objectives

The Weed Management Plan will be a tool which gives direction to the future management of weeds and related impacts in the park. The Weed Management Plan for Mossvale Park will:

- Provide a list of keystone and secondary weed species present in each management zone;
- Leave the entire park in a state where weeds can be viably managed in the long term leaving the river bank revegetated with indigenous species and the remainder of the park re planted as the committee sees fit.
- Guide the present and future management of weeds in the study area by identifying priorities for weed control and appropriate control strategies;
- Identify appropriate treatment of identified weeds and vegetation to be removed from the study area prior.
- Identify appropriate native & indigenous species for revegetation or amenity planting

WGCMA Proposal

The west Gippsland Catchment Management Authority's' proposal is a continuation of their Tarwin River Catchment river improvement strategy (from Regional Catchment strategy).

Work has already been carried out to the North of Mossvale Park along the Tarwin West branch and Berrys Creek. This work so far has focused on Weed removal (Salix sp) and stream rehabilitation.

The WGCMA has identified Mossvale Park as being a major source of current and future weed distribution, the weeds being Blackberry (Rubus fruiticosa, English Ivy (Hedera helix) and Silver Poplar (Populus alba) Two of which thickly inhabit the riparian zone along the water course for the full length of the Park and are declared noxious weeds (English Ivy & Blackberry). However as is shown later, there are several other noxious weeds species present on the site in large numbers.

The WGCMA proposal to Council reflects the SGSC/MPAC objectives and the following points outline the WGCMA offer:-

- WGCMA to, remove weed infestation in stages over three years (signed agreement with SGSC in partnership)

- To dispose of the resulting Biomass through stockpiling and burning or mulching if feasible (although it should be noted that vegetative reproduction is one of the Silver poplars main environmental concerns)

- Batter or modify the river bank where the WGCMA identifies a need.

- Revegetate the river bank using endemic species (signed agreement with SGSC in partnership)(note Ecological Vegetation Classes in appendix 2 for species lists)

- Work with local Landcare groups in a 50-50 partnership.

- Source revegetation species from local nurseries.

- Source endemic seed from the Leongatha seed bank.

- Provide 2 maintenance follow ups of revegetated sites (includes weed management and replacement planting.

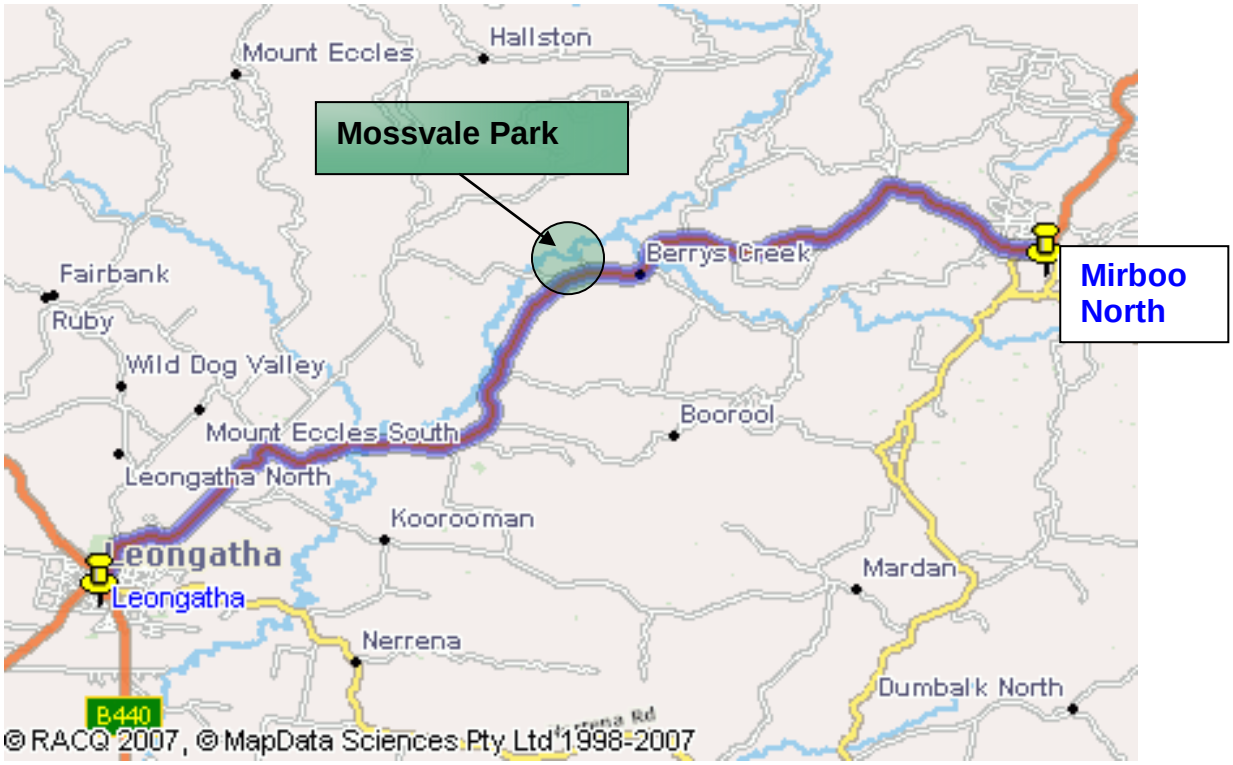
- Provide safety management of works sites (Signage, barricades etc.)

- Any extra works outside the designated zones 1, 2, 3, eg on the hill slope bordering Z 1& Z 4, will be at the discretion of the WGCMA and depends on timing, cost and resources available.

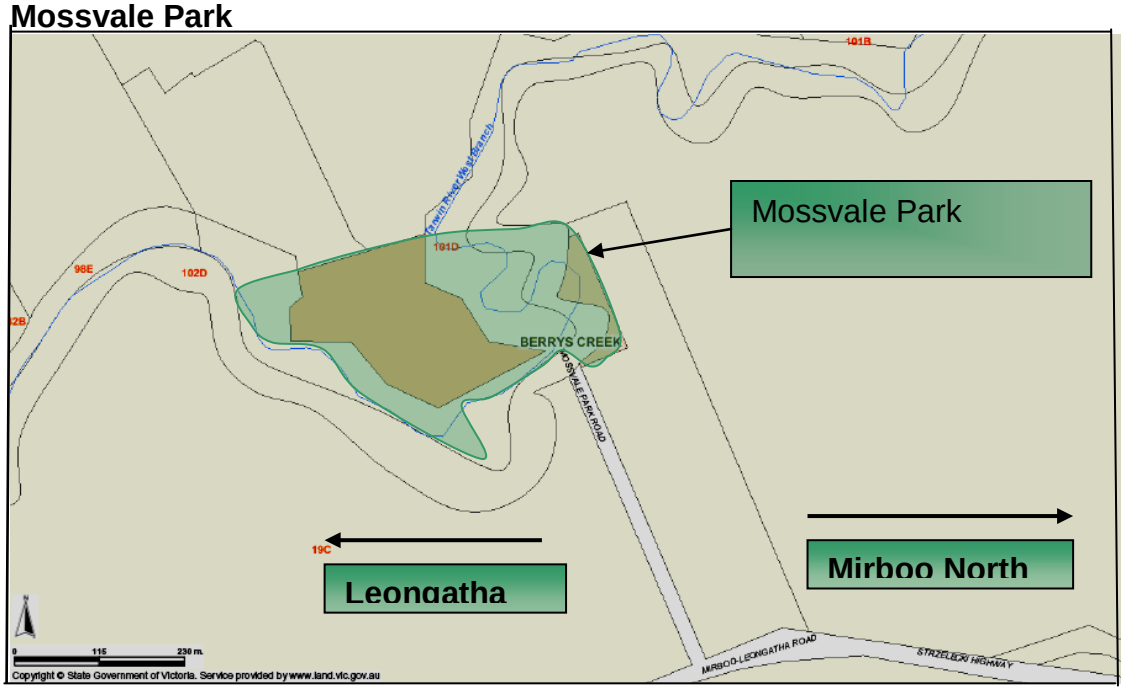
Study Site

Location of Mossvale Park

Mossvale park is situated approximately halfway between the townships of Leongatha and Mirboo North in South Gippsland, nestled in the Tarwin River Valley, 400 metres a off the Strzelecki Highway.



Mossvale Park



Reserve tenure

(Refer Map 4 below) (Refer Appendix 1 for Planning Scheme details etc)
Mossvale Park land tenure comprises two separate parcels of land.
They are:-

1. Crown Allotment Allot. 101D is located along the western bank of the West Tarwin River Branch.
   Crown Description: Allot. 101D PARISH OF ALLAMBEE EAST
   SPI (Standard Parcel Identifier): 101D\PP2011
   Local Government (Council): SOUTH GIPPSLAND Council Property Number: N/A Directory Reference: VicRoads 97B8, 97C8

   Planning Zone Summary (Last updated: 29 March 2007)

Planning Zone:	PUBLIC CONSERVATION AND RESOURCE ZONE (PCRZ)
Planning Overlays:	EROSION MANAGEMENT OVERLAY (EMO)
	ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 5 (ESO5)
	ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 6 (ESO6)
	HERITAGE OVERLAY (HO3)

2. Council is the Committee of Management for the section of Crown Land that runs adjacent to the Council owned freehold section which comprises the majority of the park proper.

   Local Government (Council): SOUTH GIPPSLAND Council property Number: 173875 Directory Reference: VicRoads 97B8

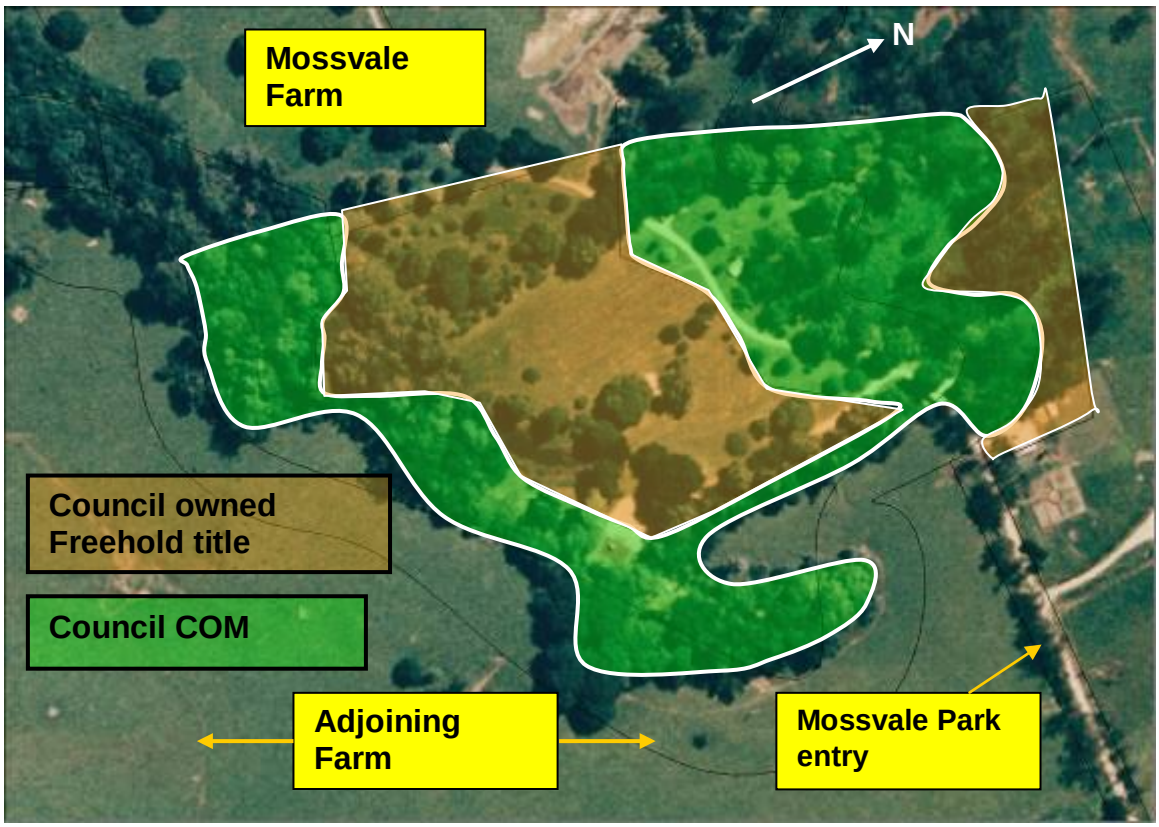
   Parcel Details

Lot/Plan or Crown Description	SPI
Lot 1 TP533449	1\TP533449
Lot 1 TP535942	1\TP535942
PARISH OF MARDAN Allot. 102D	102D\PP3059

   Planning Zone Summary (Last updated: 29 March 2007)

Planning Zone:	RURAL ZONE (RUZ)
Planning Overlays:	ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 5 (ESO5)
	ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 6 (ESO6)
	HERITAGE OVERLAY (HO3)

Map4, Mossvale Park Land Tenure



Zones

One of the Mossvale Park Advisory Committees' objectives was the division of the park into Zones they are:-

- **Z1** – From rear of the playground to title boundary along the base of the hill. Zone 1 to be selectively cleared and cleaned up so as to allow a windbreak and also enable long term weed control (eg mowing, spraying).

- **Z2** – From the entrance bridge to Playground, the selective clearing area to be revegetated as decided by the Committee.

- **Z3** – Pony Club and Bush Land area to be revegetated in accordance with WGCMA requirements in consultation with the Committee

- **Z4** - This zone represents the remainder of the park, although MPAC has requested three zones to be identified in relation to the WGCMA proposal, this management plan is intended to be used for the whole of the park.

Issue:

If the MPAC (&SGSC) is to accept the WGCMA offer for weed removal along the river corridor under Councils' management, a resolution of this point is required. The committee felt that revegetation along the river corridor should be in Australian (but not necessarily indigenous) species. Although the

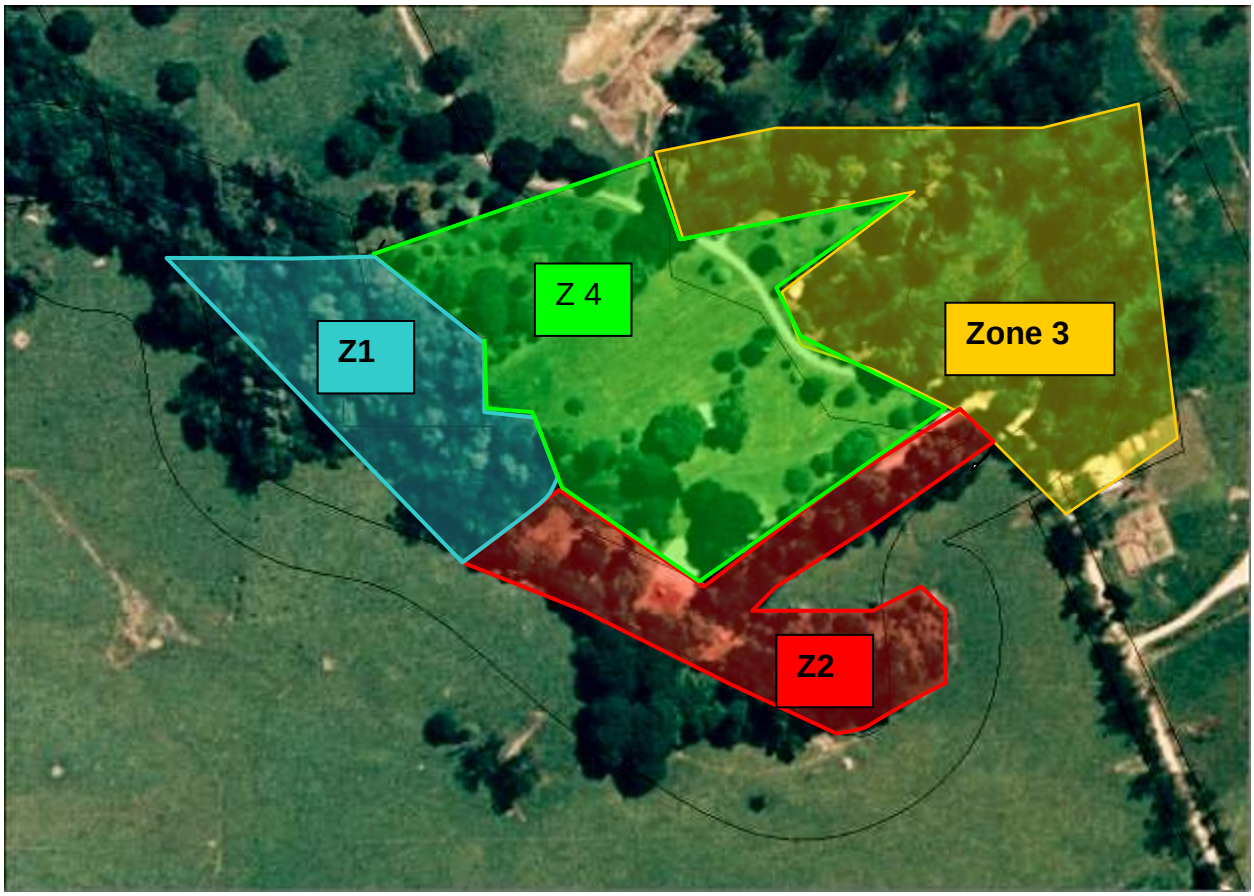
WGCMA has clearly indicated in the proposal the use of indigenous natives is a fundamental component to their revegetation strategy and Regional Catchment strategy.

The opportunity exists for non indigenous Australian Native species to be planted along side the river revegetation within Councils' freehold title i.e. not on the crown land reserve for which Council is the Committee of Management.

WGMA revegetation plan targets considers Bio diversity, connectivity of remnant vegetation and the enhancement of remnant native vegetation (West Gippsland Native Vegetation Strategy)

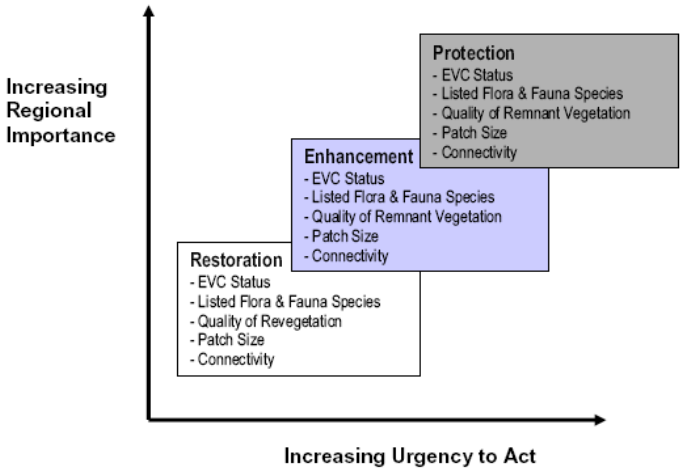
These priorities have been developed further to establish a mechanism for funding projects in the West Gippsland Region.

Map, Management Zones



WGCMA Priorities

Protect – Conservation, forest planning, local government planning, covenants, Land for Wild Life and incentives including fencing for stock and pest animal exclusion.



Enhance – Management of existing remnants – weed control, vermin control, maintenance of hydrological regimes, revegetation for buffering, promoting/enhancing natural species and/or structural and/or class and/or size class diversity.
Restore – recreation of areas of habitat where possible.

The WGCMA is governed by state and federal legislation and range of guiding strategies (West Gippsland Native Vegetation Strategy amongst others) that clearly directs the WGCMA to revegetate using local indigenous species. The MPAC & SGSC are also governed by these same guidelines.

Background

History

The park occupies land where once was a dense forest of Messmates, peppermints and gums. Here and there enormous Mountain Grey Gums and Mountain Ash would push through the canopy. Beneath this canopy of eucalypts, the understorey of wattles and daisy bushes, plus all the lesser shrubbery, was laced with razor-sharp tussocks of saw sedge and wet gullies were lined with tree-ferns.

Bernard Farrell first selected the land in 1878 but he never worked it. In 1888 Francis Moss acquired the land and he probably did as other settlers, cleared the forest by ring barking the trees and firing the scrub. He established a nursery supplying hundreds of fruit trees and ornamentals to local district settlers. Only a few of the original native trees survive.

William Gould, a trained nurseryman, managed the nursery from 1898 to 1917, with assistance from his son for the last seven years. Any trees not up to the high standards of Moss and his managers were planted out on the property (now Mossvale Park & Mossvale Farm). Five of these trees, now over one hundred years old, are included in the *Register of Significant Trees of Victoria,* prepared by the National Trust in 1981.

Francis Moss died in 1916 arid the property was offered for sale. It had been managed as a dairy farm, but all stock and machinery was auctioned and the property was then leased to local farmers running sheep or cattle. Eventually the farm was sold in 1923.

From 1931 there was a succession of owners, beginning with Les Edey, then J. Hayes. From 1933 onward, Berrys Creek school picnics and sports were held on the front paddock on the river, under the mature trees of Mossvale. It was Mr Hayes who suggested that this portion of the property be purchased and reserved as a public park for the people.
In April 1945 delegates from the Leongatha Branch of the Australian Natives Association approached the shire councils to purchase the riverside picnic ground. In March 1946 the shires of Mirboo and Woorayl purchased ten acres (four hectares) of land, now known as Mossvale Park, leaving 395 acres (160 ha) for the farm property.

The shires handed control of the park to locally elected committee of management April 1946. The committee managed the camping ground and any construction in the park, such as a kiosk and fireplaces.
The park has trees ranging in age from one hundred and twenty year old Oaks, Planes, Elms to mere striplings planted between 1992 and 2005 which contribute to the sense of planting continuity. Several remnant *Eucalyptus*

strzeleckii, *E. viminalis* and *E. cypellocarpa* are also interspersed throughout the park. English Ivy has become a significant pest plant, overrunning the trees along the riverbank and is of immediate concern to all. Ironically the Ivy was planted by Francis Moss (pictured) to remind him of his native England whilst hiding the large burnt stumps, remnants from land clearing.

The first Music for the People concert was held in Mossvale Park in February 1969. Subsequently an orchestra platform was installed and power was connected some in the 1970s. The sound shell was built 1982.

Public use of Mossvale Park is varied and because of its central location and beauty, is visited by passing traffic for passive use (picnicking, walking, bird watching etc) and social purposes (Family gatherings, wedding ceremonies), campers using the powered facilities, Pony clubs, and the annual Mossvale concert day. Further development and improvements to Mossvale Park would see a significant increase in its patronage, particularly from people outside the immediate locality.

Mossvale Park Master Plan & Management Plan 1998

The Mossvale Park Master Plan & Management Plan was written by Andrew Paget (**AUS**BOTANY) in June 1998 and was commissioned by the South Gippsland Shire Council and the Mossvale Park Advisory Committee (MPAC). Andrew Paget is a widely recognised botanist whose work on the management plan was extensive, exacting and thorough. This study references the original plan extensively because of these attributes and a substantial body of the 1998 plan is still relevant today. The purpose of the management Plan was to provide a basis for the maintenance, development and management of Mossvale Park over the years - 1998 to 2003.
This Weed Management Plan forms part of the original plans' recommendations for weed management/removal/revegetation/replanting and follows on as part of the cyclic review process also recommended.

Relevant Government Agencies and Authorities

Agency Partnerships

As the West Gippsland Catchment Management Authority is central to this weed Management Plan, creating close working partnerships with the authority and other associated groups is vital. Below is a brief explanation of the authority and other affiliated organisations. As well as working with Council on the project, these organisations can assist the SGSC and MPAC in developing publicity, raising awareness and distributing information about the proposed works at Mossvale Park.

West Gippsland Catchment Management Authority (WGCMA)

Responsible for coordinating the preparation and implementation of the Regional Catchment Strategy, in partnership with regional stakeholders from community, industry and government; licensing of works on waterways; management of waterways; and regional drainage and floodplain management. Works to protect and enhance regional land and water resources, provides regional leadership and co-ordination, sets regional priorities, prepares action plans, builds capacity for community action, monitors and evaluates catchment condition and fills knowledge gaps. The Authority acts as a knowledge broker and develops high quality regionally co-ordinated funding bids to attract investment. The Authority is the regional co-ordinator of the Waterwatch program, and provides support to Landcare.

Department of Sustainability and Environment

DSE is the key natural resource management service provider within Gippsland. DSE derives statutory authority from a range of acts including those governing state and commercial forests, biodiversity, coastal management, aboriginal heritage, national and state parks, water, and land use planning. DSE operates at the regional level to deliver a wide range of services across various programs: • Catchment Management • Water Sector Development and Services • Flora and Fauna (Biodiversity) • Land Information • Heritage • Parks and Crown Land Management and Stewardship • Sustainability Policy and Sustainable Cities and Regions • Forest and Fire Management • Greenhouse and Energy Sustainability Policy
As with DPI, these service delivery responsibilities include: community engagement, partnerships with a wide range of organisations, groups and stakeholders, strategic and specific area planning, contribution to policy development and review, legislation development and enforcement. DSE also collects and provides access to land resource management information and land and natural resource monitoring and develops emergency and management plans. Aboriginal Affairs and Indigenous Communities and Culture, formerly in DSE, are now a part of the Department for Victorian Communities.

Greencorps

With Job Futures, Greening Australia manages the Greencorps program which gives young people the opportunity to volunteer to participate in projects designed to preserve and restore Australia's natural environment and heritage.

Greening Australia, Victoria

Greening Australia Victoria is a partner assisting the West Gippsland Catchment Management Authority to achieve vegetation outcomes prioritised in the Regional Catchment Strategy and the Draft Regional Native Vegetation Plan. GAV has expertise in vegetation and project management and a nation wide network of support.

Bushcare Projects

Over the past 4 years, Greening Australia has implemented 4 Bushcare Projects across West Gippsland. 1130 Ha. of remnant vegetation has been protected and 396 Ha. of vegetation has been re-established. This has included rare and threatened vegetation classes such as Cool Temperate Rainforest Forest, Gippsland Plains Grassy Woodlands, and Damp Forest as well as significant species such as Eucalyptus strzeleckii and habitat of the Giant Gippsland Earthworm. A major challenge is reconstructing part of the 86,000 Ha of Blue Gum Forest which once covered the Strzelecki Ranges and is now classified as extinct. Funding from the Natural Heritage Trust Bushcare Program for these projects ceased in December 2003.
Management of Bushcare projects by Greening Australia Victoria has included:

- Administration of incentives to assist with the cost of fencing, ground preparation and plant stock
- Providing technical advice
- Liaising with landholders, contractors and the Department of Primary Industries and development of site plans
- Development of species lists appropriate to the original Ecological Vegetation Classes
- Identifying and refining revegetation techniques that are suitable for the terrain, specific vegetation communities, and the capability of landholders. These include various direct seeding techniques
- Seed supply coordination
- Use of equipment and machinery such as the Rippa Seeder
- Training and field days
- Coordinating labour including Green Corp Team and a 5-member work team
- Monitoring site success

The Department of Primary Industries

DPI was established in December 2002 after bringing together a number of areas from the former Department of Natural Resources and Environment (DNRE). The Department promotes the sustainable development of primary industries for the benefit of all of Victoria. It is one of ten Victorian Government

Departments and reports to the Minister for Agriculture and Minister for Energy and Resources.

South Gippsland Landcare Network (SGLN)

The Landcare movement is the most active and prevalent volunteer network in the region. It has a long and proud history in the region, characterized by a committed and motivated grass roots community that have set about addressing natural resource management issues in the region. There are some 70 Landcare groups in three Landcare Networks with over 3000 families involved in the region. Landcare plays a major role in coordination, capacity building, education, partnership development, local area planning, and delivery of works that protect and enhance the region's land, water and biodiversity assets.
Landcare is an integral part of the WGCMAs' proposal for weed removal in Mossvale Park, it is understood that Landcare will be providing plant stock and labour for the revegetation, follow up infill planting and limited weed management of the riverbank part of the proposal.
Landcare is a Community-based program involving groups of farmers and community, collectively working towards improving land management in their catchments. It works as a voluntary association of landholders addressing issues of importance at a local level
The Government provides funding to Landcare Groups for ongoing works and regional Landcare coordinators through Landcare

The South Gippsland Landcare Network (SGLN) Berrys Creek action Plan covers the study site.

State Government Initiatives, (through DSE)

1. **Weeds Initiative**

This has two principal objectives: to control immediate high priority weed infestations, and to develop and implement measures to reduce the impacts of weeds on land throughout the State.

2. **The Good Neighbours Program**

The program aims to protect private land from pest plants and animals through improved management of neighbouring public land. While the work is targeted to pest plant and animal works on public land, in some instances funds may be provided for the employment of facilitators to co-ordinate private land activity along common public land frontages and to co-ordinate pest management works between private and public land managers.

3. **Tree Victoria**

The Tree Victoria Program aims to plant five million trees per year over the next twenty years. The MPAC/SGSC should support this initiative with development of an overall planting program

Grants are available to rural groups and organisations to assist with re-vegetation and remnant protection projects. Preference is given to projects

that provide the greatest benefits to the community, contributes significantly to the control of salinity, soil erosion, streamside degradation and the enhancement of important flora or fauna values in the region.

State & Federal Legislation

The principal legislation dealing with the reservation and management of Crown lands in Victoria is the *Crown Land (Reserves) Act* 1978.
South Gippsland Shire Council is the Committee of Management for the crown land river reserve along the Tarwin West Branch adjoining the park proper and has been appointed under the *Crown Land (Reserves) Act* 1978 to manage the reserve on behalf of the Minister for Planning, and has responsibility and authority to manage, improve, maintain and control the reserve. The river reserve has been reserved as a Public Park and Recreation Reserve.
The Mossvale Park Master Plan & Management Plan was developed as part of the legislative responsibilities.

West Gippsland Catchment Management Authority's approach to Council offering to remove identified weeds from Mossvale Park comes from the authorities' implementation of their REGIONAL CATCHMENT STRATEGY

Overview
The West Gippsland Regional Catchment Strategy has been developed in partnership with the community, industry and government.
Government includes the regional components of Local, State and Federal governments, and statutory authorities as well as Government appointed taskforces and committees.
This Strategy sets out how to better align efforts to manage our land, water and biodiversity that provide us with sustenance and shelter, livelihood and lifestyle, and how we will protect the health of natural ecosystems for future generations. The scope includes public and private land; soil; rivers and streams; groundwater; lakes and wetlands; estuaries and coastal waters; biodiversity; protection of nature; sustainable production; and natural, rural and urban landscapes. State and Federal Government investment into the Strategy will occur through a three year rolling Regional Catchment Investment Plan derived from this Strategy an

Responsibilities

To date, much of the legislation and policy direction for weed management has been aimed at protection of agriculture from the economic impacts of weeds and on single weed species. The government's Weeds and Pests on Public Land Initiative has provided the opportunity to extend the vision to include consideration of strategic approaches to managing the environmental impacts of weeds where the emphasis is on protecting the services and values the community derives from environmental assets. A range of legislation, guidelines, codes of practice and policies relate to the control of weeds on public land in Victoria. The following descriptions and excerpts provide access to some specific legislative references to biodiversity and

weed management but are not a comprehensive list of all documents or relevant clauses.
Note that legislation is subject to change from time to time and that specific legal advice should be sought on the applicability of legislation to any particular situation.
The legislated purpose of managing the environmental impacts of weeds on public land is usually to protect biodiversity and promote ecological sustainability. These two concepts—'biodiversity' and 'sustainability'—are locally, nationally and internationally recognised as important. Victoria's public land managers have a clear public interest responsibility to protect biodiversity and promote sustainability on public land. This is additional to responsibilities to control weeds affecting economic interests (usually declared as 'noxious' weeds), particularly those affecting agriculture.

As well as meeting its obligations under the Crown Land (Reserves) Act 1978, the Shire is also bound by the laws that govern the wider community on matters such as employment, taxation, contracts, tenancy, licensing, and providing services.

The powers given under the Act enable the Shire to:

- Manage and develop the reserve;
- Undertake financial transactions, including borrowing money (with the Victorian Treasurer's consent) and entering contracts;
- Enter tenure arrangements, such as leasing and licensing, for part or all of the reserve, subject to Minister's approval;
- Employ people;
- Enforce regulations.

Crown Land (Reserves) Act 1978

The *Crown Land Reserves Act 1978* provides for the permanent or temporary reservation and management of Crown lands. Land may be reserved for a range of public purposes including preservation of areas of ecological significance, the preservation of species of native plants, for wildlife, public gardens, archaeological and coastal protection.
Committees of Management [Section15 (1) (a)] appointed under the Act 'shall manage improve maintain and control the land for the purposes for which it is reserved …'

Catchment and Land Protection Act 1994

The *Catchment and Land Protection Act 1994* aims to establish a framework for the integrated and co-ordinated management of catchments which will maintain and enhance long-term land productivity while also conserving the environment. It aims (Section 4) to ensure that the quality of the State's land and water resources and their associated plant and animal life are maintained and enhanced.
The Act establishes Catchment Management Authorities with responsibility for developing Regional Catchment Strategies. Section 26 requires that, in carrying out a function involving land management on behalf of the Crown; or under an Act, a Minister or public authority must have regard to any regional catchment strategy applying to the land.

This Act provides the power to declare plants as ‘noxious’ if the Minister is satisfied that it is, or has or may have the potential to become, a serious threat to primary production, Crown land, the environment or community health in Victoria.
Noxious weeds are weeds declared to be State prohibited, regionally prohibited, regionally controlled or restricted requiring action by the land owner, including the Secretary [DSE] as a land owner. Section 20 specifies general duties of land owners (defined to include public authorities, occupiers of Crown land under a lease or licence, Roads Corporation, Director of National Parks) in relation to land management including eradication of regionally prohibited weeds and prevention of their growth and spread. Section 21 relates to specific duties of the Secretary in regard to State prohibited weeds and roadsides. The Act also has provisions to prevent the spread of declared noxious weeds. “Section 20. General duties of land owners—
(1) In relation to his or her land a land owner must take all reasonable steps to—

- Eradicate regionally prohibited weeds; and
- Prevent the growth and spread of regionally controlled weeds;

(2) A land owner must take all reasonable steps to prevent the spread of regionally controlled weeds”.

Flora and Fauna Guarantee Act 1988

The *Flora and Fauna Guarantee Act 1988* aims to guarantee that all Victoria’s taxa of flora and fauna can survive, flourish and retain their potential for evolutionary development in the wild. This is achieved through conservation of (plant and animal) communities, managing potentially threatening processes and other methods. An Action Statement is prepared for each item listed under the Act.
This Act is binding on the Crown. Public land managers should particularly note those Potentially Threatening Processes (PTP) listed under the Act relating to environmental weeds. At the present time these include ‘The invasion of native vegetation by environmental weeds’, ‘Invasion of native vegetation by Blackberry *Rubus fruticosus* L. agg.’ [A full list of PTP is published on the internet (www.dse.vic.gov.au) or available from DSE]. Weeds are also mentioned as a threat in many other nominations and Action Statements (refer to DSE’s Actions for Biodiversity Conservation [ABC] database – explained in the Information section of these Guidelines). Section 49 of the Act states that “A person must not, except as prescribed, without the permit of the Secretary, abandon or release any prescribed flora into the wild.”

Conservation, Forests and Lands Act 1987

An object of this Act is to set up a legislative framework to enable the Minister—

(a) To be an effective conservation of the State's lands, waters, flora and fauna;

The Act enables the Minister to create Codes of Practice, which specify practical procedures for the carrying out of all or any of the objects or purposes of a relevant law.

32(2) A Code of Practice may relate to but is not limited to any of the following matters—

(b) Eradication and control procedures for pest plants and pest animals;

Water Act 1989

A purpose of the Water Act 1989 is [Section 1 (j)] "to provide formal means for the protection and enhancement of the environmental qualities of waterways and their in-stream uses; and (k) to provide for the protection of catchment conditions". In addition, "an Authority that has the management and control of any environmental or recreational areas may, in accordance with sections 160 and 161, make by-laws applying to any or all of those areas for the following purposes—(e) the control of the introduction of any new flora or fauna to the area; (f) the control of the numbers of any flora or fauna in the area [Division 3 (107) (5)]".

"An Authority must perform its functions in an environmentally sound way" [Part 8 (163) (2)] "having regard to the need to preserve aspects which have landscape and fauna and flora values". Its functions include "(a) to identify and plan for State and local community needs relating to the use and to the economic, social and environmental values of land and waterways; (b) to develop and to implement effectively schemes for the use, protection and enhancement of land and waterways".

Land Act 1958

Perpetual lessees of Crown land are required, under Section 55(1) (b), to eradicate and control noxious weeds. (Adjoining landholder?)

Other

The ***Local Government Act 1989*** and the *Planning and Environment Act 1987* provide opportunities for local councils to become involved in and enforce weed control through the creation of local laws and planning permit conditions.

The ***Planning and Environment (Planning Schemes) Act 1996***, which amended the ***Planning and Environment Act 1987***, provided for the Minister to prepare a set of standard provisions for planning schemes called the Victoria Planning Provisions (VPP). The Victoria Planning Provisions (13) include native vegetation retention controls with some specific exemptions relating to weeds and pests.

The State Planning Policy Framework (Section 1), 15.09 'Conservation of native flora and fauna', states "15.09-1 Objective – To assist the protection and conservation of biodiversity, including native vegetation retention and provision of habitats for native plants and animals and control of pest plants and animals…15.09-2 General implementation decision-making by planning and responsible authorities should: Address potentially threatening processes identified under the *Flora and Fauna Guarantee Act 1988*"

The Particular Provisions (Section 5), clause 52.17 states "Native vegetation – a permit is required to remove, destroy or lop native vegetation. This does not apply 'Weeds and vermin'." They contain a number of specific exemptions that include noxious weeds and bracken and, in some instances, *Kunzea ericoides* and *Leptospermum scoparium*. There is also an exemption relating to notices

under the *CaLP Act 1994* and to access burrows for vermin control. Refer to the Provisions for specific information.
Victorian Weed Management Strategy (NRE 2002b)
http://www.dse.vic.gov.au/planningschemes/VPPs/index.html
Interim Guidelines and Procedures for Managing the Environmental Impacts of Weeds on Public Land in Victoria, 2006

Victorian strategies

Victorian Pest Management — A Framework for Action (VPMF, NRE, 2002a) provides a whole-of-government consistent approach across all pest management programs on public and private land and water. The vision for pest management in Victoria is:
"Pests no longer threaten the State's natural assets, its social values and productive capacity of its land and waters."

The **Weed Management Strategy** (NRE, 2002b) has been developed within the VPMF and deals with weed management in Victoria. It contains five goals for weed management

1. Prevent new weed problems,
2. A significant reduction in the impact of existing weed problems,
3. A Victorian community that is fully aware of the economic, social and environmental impacts and threat of weeds, and has the knowledge to act to minimise their damage,
4. Effective working partnerships built for progressive weed management and
5. Continuous improvement through review and evaluation.

Note Interim Guidelines and Procedures for Managing the Environmental Impacts of Weeds on Public Land in Victoria, 2006

Victoria's Native Vegetation Management: A Framework for Action 2002
This Framework establishes the strategic direction for the protection, enhancement and revegetation of native vegetation across the State. The Framework addresses native vegetation management from a whole-of-catchment perspective but necessarily focuses primarily on private land where the critical issues of past clearing and fragmentation exist. The government has adopted a policy of achieving a net gain in the extent and quality of native vegetation. The negative effects of weeds and pests on habitat quality are considered as part of the reporting framework. The minimum outcome for public land is a net gain overall with varying outcomes for vegetation of differing conservation significance. For example, the Framework specifies "no losses" for vegetation of "Very High Conservation Significance".

Healthy Rivers, Healthy Communities and Regional Growth: Victorian River Health Strategy 2002 – aims to achieve healthy rivers, streams and floodplains which meet the environmental, economic, recreational and cultural needs of current and future generations.

Victoria's Biodiversity: Directions in Management 1997 - outlines the government's goal for conserving biodiversity including a net gain in the extent

and quality of native vegetation. The Strategy is developed under the auspices of the *Flora and Fauna Guarantee Act 1988*.

Regional Catchment Strategies outline directions for natural resource management within each of Victoria's ten Catchment Management Area boundaries. They have legal status under the *Catchment and Land Protection Act 1994*.

The National Weeds Strategy 1999

The National Weeds Strategy: A Strategic Approach to Weed Problems of National Significance (2nd ed. 1999)18 provides the framework to reduce the impact of weeds on the sustainability of Australia's productive capacity and natural ecosystems, through the establishment of a number of goals, objectives for action and outcomes. The goals of the Strategy are threefold.

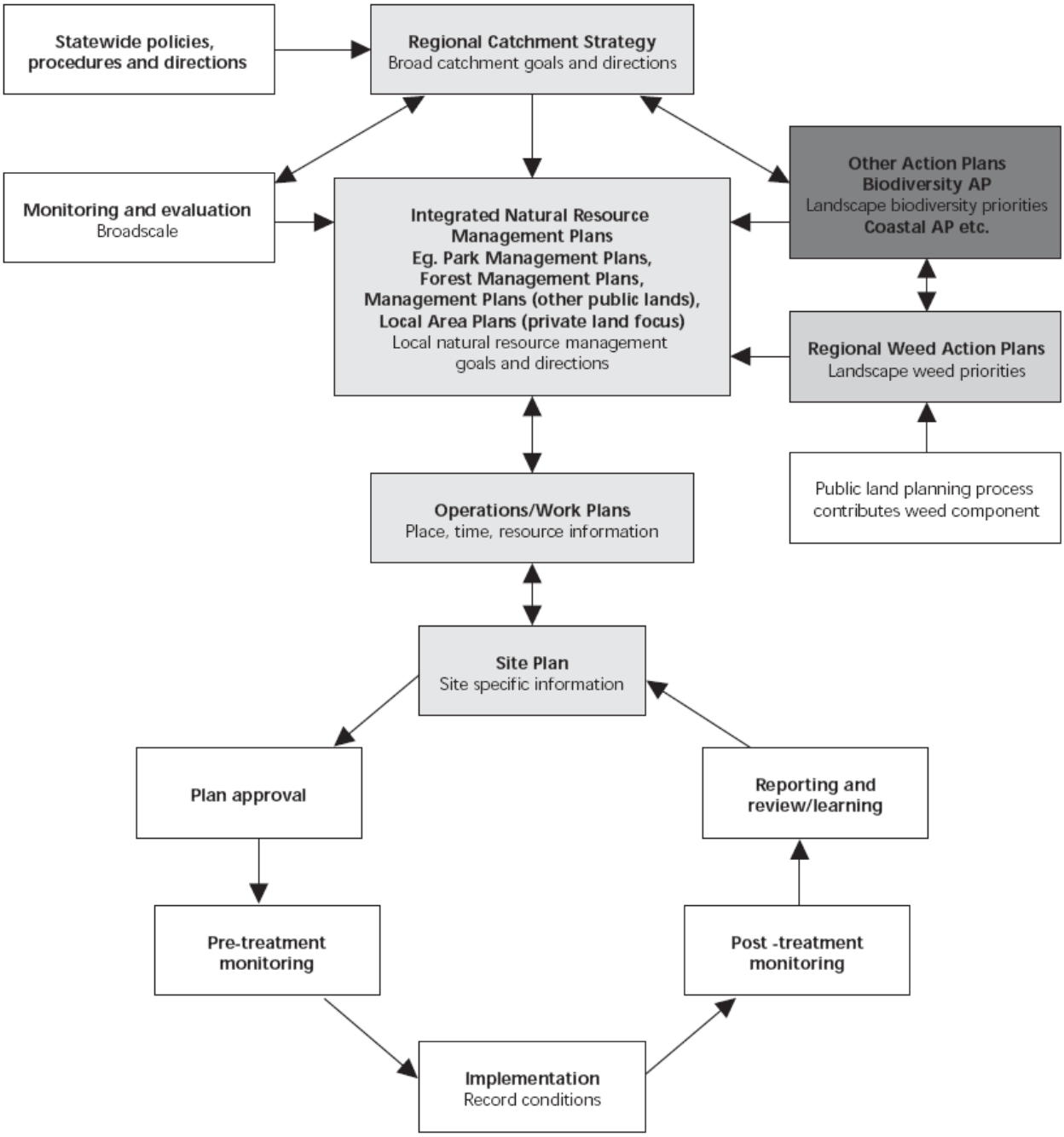
1. To prevent the development of new weed problems;
2. To reduce the impact of existing weed problems of national significance; and
3. To provide the framework and capacity for ongoing management of weed problems of national significance.

The Strategy requires that the Australian Government develop:

- Mechanisms to minimise the risk of introduction of new weed species;
- Procedures for the detection of new occurrences of plant species with weed potential; and
- A contingency plan, which includes a funding mechanism, to enable a rapid response to new weed outbreaks of potential national significance.

The Strategy requires that effective regulations are in place at the state, territory, and local government levels to control the spread of weeds. The Strategy also recognises that land managers and users, and commercial plant nurseries, need to adopt procedures to prevent the spread of weeds.

Figure 3: Relationships between Regional Catchment Strategies and tactical and operational planning for weed management on public land in Victoria



Weed Management Strategy

The Weed Management strategy has been divided into four zones in line with the proposed staged weed removal, each zone is identified below showing

- Weed species present
- Weed status/priority
- Control timelines for various species
- Weed Management method.

As the majority of the proposed works and therefore the greatest amenity, vegetative and visual impact will occur in zones 1, 2, 3, emphasis has been place accordingly.

One of the overriding considerations in relation to WGCMAs' proposal is the recognition of the considerable changes to the visual and physical amenity to Mossvale Park, i.e. extensive 'opening up' of views across the adjacent farm land and therefore the major changes to how the weather impacts on the Park.

As Mossvale Park currently exists in and creates its' own micro climate, care needs to be taken and consideration given to not only the five National trust Trees but the extensive plantings of exotic species many of which are over 100 years old. Four approaches have been used to minimise these impacts on the existing vegetation and community concerns about the works (any tree removal generates community concern, refer to Publicity section below), They are:-

1. Staged removal of weeds species over several years
2. The section along the river in Zone 1 will staged first with a narrow windbreak left to allow the mature exotic species some protection from weather extremes and possible windthrow. This windbreak will be removed in future years by the SGSC once the revegetated areas grows to provide some protection of its' own. (refer to Section on Z 1 below)
3. Revegetation of riparian zone
4. Additional complimentary tree and shrub plantings (SGSC/MPAC) outside the WGCMA proposed work areas.

The majority of the biomass along the river corridor is composed of the identified weed species, some significant mature exotic trees and a minor component consisting of remnant native vegetation (eg E. strzeleckii, E. viminalis and E. cypellocarpa). The weed species are identified below in each zone section description. The remnant ecosystem has virtually all but disappeared. However the following issues have, where relevant, been considered in the weed rating system and assessing eradication options etc.

Mutual consideration

For effective weed management all land managers need to act as good neighbours to one another. This involves listening to and respecting the weed issues faced by people in different circumstances and the impacts they are having on important values. Public land managers need to be conscious of the impacts on adjoining private land and incorporate these issues into their programs. The government's Good Neighbour program provides funding for good neighbour activities on public land.

Ecological substitution
In some (usually rare) instances weeds play an important role in *conserving* biodiversity assets. This is most likely to be the case in highly degraded ecosystems (Mossvale Park) where important ecosystem elements/resources have been replaced by weed species (e.g. refuge for small birds provided by prickly weeds where natural understorey has been removed, indigenous pollinators that require weeds for part of their lifecycle). Care must be taken to ensure the natural component is available in the ecosystem prior to weed control, especially where a threatened species may be affected.
In addition, it is often the case that weed control, if it is to be effective in the long term, must be matched by a corresponding program to occupy the vacant space/niche created with indigenous replacements. Weed management is a component of a holistic approach to natural resource management that should be applied to the rehabilitation of a site.

Social and economic values
An integrated approach to weed management requires that social and economic (as well as environmental) considerations, be taken into account when prioritising management actions. A complicating factor is that there is at this time no direct impartial method for comparison of the relative values of social, economic and environmental assets. At the present time, the land manager, having regard to the significance of the assets for the community at large, must make these judgments.

Heritage and cultural values
Where environmental weed species are considered to have some other value (cultural, historical), this must be weighed against the often-significant environmental impacts and costs of their retention. In instances where retention of the weed species is desirable, then a management program should be implemented to prevent potential environmental impacts.

Weed Control Methods

Prevention

This is the most effective means of control. Land Managers need to know the weed history of the land. A property with a history of weeds such as Hemlock or Ragwort could cost more to manage than initially expected. It is wise to seek detailed advice on this issue from staff at the local Department of Sustainability and Environment office.

After machinery has been used in a weed infested area, clean it up before moving it into a weed free area. Minimise the amount of soil and vegetation disturbance when carrying out work. Disturbed ground often provides ideal conditions for the germination of weed seeds.

Any weed removal program needs to be coupled with a replacement or revegetation program. This can take the form of revegetation with indigenous native species i.e.: plants native to the local area.

Plant Competition

It is important to grow vigorous plants that out-compete the weeds. A healthy pasture or crop can often suppress weed growth. A good cover of vegetation can prevent weed invasion in areas of natural vegetation.

Cultivation

There are various cultivation implements suitable for weed control. These include disc ploughs, harrows and deep rippers. The deep ripper is advisable for heavy soils with a hard layer. Cultivation can provide very good control of annual plants. The best time to cultivate is before the seed sets. Cultivation is not a good control method for plants with rhizomes (underground stems) and stolons (horizontal stems which root at the nodes) which spread vegetatively.

Small pieces of such plants can usually regenerate (e.g. White Poplar). If you want to use cultivation on perennial plants, be prepared to continue the program for a long time, i.e. up to 5 years.

Mulching

In this method, a layer of material which the weeds cannot penetrate is placed on the ground. The weed seeds are denied access to light and some are unable to germinate. The mulch also provides an impenetrable layer to emerging seedlings. Mulching helps to preserve moisture in the soil for the use of more desirable plants. Many different materials can be used for mulch. Revegetation works in natural areas often employ commercial mulches (Council supplied mulch from other works, weed matting etc). Care should be taken with organic mulches. They are frequently contaminated with weed seeds.

Burning

Fire (Burning)

Fire is mainly used as a follow up to herbicides to clear areas of dried or dead vegetation and to enable access for rehabilitation of the treated area, but is sometimes used before herbicide applications to improve access. If low intensity spring or autumn burns are used to remove the top growth of e.g. healthy blackberry, regrowth from the crown will occur within a short period. High intensity summer fire can kill most weeds and destroy most of the seed in the surface litter; however regrowth from root suckers may rapidly re-establish an infestation (Ivy, White Poplars).

- Check with the SGSC (especially in relation to roadsides) to see what permits are required.
- Check to see whether fire restrictions apply, and inform and involve the local fire brigade.
- Undertake appropriate precautions such as clearing a firebreak and notifying adjoining neighbours.
- Follow up with whatever further treatment is required.

Burning is a control method for use by experienced people. It is a technique employed by the West Gippsland Catchment Management Authority to control weeds of natural ecosystems e.g. Willows/Poplars/Blackberry off cuts. Many natural ecosystems are adapted to regular fires and species diversity will decline unless they are burned.
Fire promotes germination of soil stored seed, so the weeds can be killed once they come up. It also heats the soil to a temperature which destroys soil stored seed. The intensity of the fire determines which seed are stimulated to germinate and which are killed.
Burning can severely deplete reserves of phosphorus in the soil. Ten to twenty years may be required for these reserves to be restored. Extra fertilizer is often required after burning in agricultural situations. In natural ecosystems the burning of accumulated litter recharges the soil with minerals and can lead to a flush of new growth.

Slashing
This should be considered as a short-term control because e.g. blackberry quickly regenerates from the crown and roots, often within a few weeks. However, regular and thorough slashing or mowing (fortnightly or monthly), forces the plant to regrow using up reserves stored in the root system and therefore weakening the plant. Irregular slashing can leave the plant with a strong root system and little top growth, thus reducing the efficacy of any subsequent chemical control. Slashing may also stimulate suckering (Ulmus & Populus sp.).
Slashing is frequently a necessary preparation for treatment of infestations by other means. The slashing of access tracks may be required to enable herbicide spraying. Slashing in the season prior to applications of foliar herbicides is not recommended, as it reduces the leaf area available for absorption and thus the amount of herbicide taken up by the plant, however slashing before an application of granular herbicide (taken up by the roots) can improve results. Summer slashing can enhance the effect of the blackberry rusts (see below), as the regrowth (new leaves) stimulated by the slashing is very susceptible to the rust.

Mechanised weeding
Where extensive areas, dense infestations or vermin infestations are involved, large earthmoving equipment may be necessary both to control blackberry and to destroy vermin harbour. A bulldozer or excavators are generally the best machines for use on large areas with dense infestations. Scalping (removal of all the vegetation and the upper layer of soil) can be very successful on accessible infestations provided sufficient material is removed. Scalping to a depth of 20 to 30 cm is needed to ensure crowns and the majority of roots are removed. A root rake or similar equipment is preferable. Irrespective of the type of earthmoving equipment used, regrowth from crowns, root fragments and seed is inevitable and follow-up control, coupled with revegetation of the site, is essential.
As this will be the preferred method for primary weed removal (Poplar/Ivy/ etc.), check with the Catchment Management Authority to determine that this form of management is appropriate for the particular area. Take steps to

minimise soil erosion potential and problems that may be caused by subsequent erosion.
This can be achieved by:-

- Leaving cut tree stumps ‘in situ’, paint immediately with appropriate herbicide (e.g. glyphosate)
- Mulching where suitable
- Battering of banks to reduce slope
- Rock beaching to stabilise steep banks on bends

Biological Control

Biological control involves the use of one organism to attack and control another. Weed biocontrol agents include bacteria, fungi, insects and other animals. There are several examples of successful programs for the biological control of weeds in Australia. Biological control programs are expensive, but effective programs have a high ratio of benefits to costs.
Biocontrol cannot eradicate a weed but can reduce the spread and density of infestations. In some cases the weed is suppressed to the level where it is no longer of concern and no other control is necessary. More commonly other methods are still required to achieve the desired level of control; however these need not be used so frequently or intensively. Biological control is best suited to large, inaccessible infestations with a low priority for control. Rust fungus is currently being assessed as a control for Blackberry, Refer to Landcare Note LC0143: *Biological control of blackberry with blackberry leaf rust fungus* for further information about the rust. For more detailed information on biological control contact DPI Frankston on (03) 9785 0111.
Grazing animals are one of our most effective biological control agents. Their potential should not be underestimated. However this method is generally not considered suitable for Mossvale Park.

Chemical

There are many chemical herbicides available for weed control. Chemicals which act on plants in a similar way are classified in "mode of action" groups. Triazines and ureas, for example, are grouped with other "inhibitors of photosynthesis". The **label** on the herbicide container will indicate which species are susceptible to the chemical and the application methods which can be used.
Spraying of certain herbicides is prohibited in parts of Victoria called Chemical Control Areas. These have been established in a number of horticultural districts to protect sensitive fruit and vegetable crops.
Herbicides take varying amounts of time to kill weeds, depending on the stage of growth of the weed and the mode of action of the herbicide. Results of chemical control activities may not be assessable for a number of months.

A contact herbicide may be sufficient to control annual weeds. However perennial plants generally need translocated herbicides so that the active chemical moves to all parts of the plant including the roots. Both contact and translocated chemicals should be applied when the weed is actively growing. Herbicides are not efficiently carried within the plant when it is under stress (e.g. when diseased or deprived of water) and control of weeds when they are stressed is not assured. Biennial plants and all thistles should be treated at

the rosette stage to obtain the best kill using the least amount of herbicide. Plants should be treated before flowering and definitely before seed set.

Herbicide spraying should be undertaken on a clear, mild day on which a light breeze is blowing. The breeze allows the direction of any spray drift to be determined. The spraying technique can then be adjusted to guard against off-target effects. For advice about the chemical best suited for a particular situation, or details of regulations related to use of agricultural chemicals, contact your local DSE office.

Herbicides can be applied by:

- spraying
- applying granules
- soil injection

NB Chemical use Legislation

Under Victorian legislation there are controls on various aspects of the uses of agricultural chemicals. It is the responsibility of chemical users to familiarise themselves with these controls. Not all products containing the same active constituent will be registered for the same uses. You should use a product with a label recommendation for the situation in which you wish to use that product.

Legal use of some chemicals requires the user to possess an Agricultural Chemical User Permit (ACUP). Other chemicals have restrictions on their use in Chemical Control Areas (CCAs). Refer to the Agriculture Note: Agricultural chemical user permits (ACUP) and chemical control areas (CCA)

Information on ACUPs, CCAs and other chemical information can be found under Chemical Use in the General Farming section under Agriculture and Food at the website http://www.dpi.vic.gov.au , or ring the Chemical Information Service on (03) 9210 9379.

Consult the manufacturer's recommendations for herbicide application advice.

Spraying near Water Courses

N.B. Choice of herbicide for control of specific weeds is often limited because of their proximity in or near watercourses. To avoid contamination of water and damage to the aquatic environment necessary restrictions apply to the use of herbicides and few herbicides are registered for use in such situations. In general herbicides should be used in such areas only when the water course is dry and extended periods of dry weather can be relied upon, the most selective application technique should be chosen, and spraying should be arranged to ensure that spray drift is negligible.

Granular herbicides require rain to wash the chemical down to the roots of the plant. They can be useful for treatment of plants in areas that are difficult to access with spray equipment and for isolated plants, but should not be used in areas where runoff is likely.

If plants are bearing fruit at the time of spray treatment, the spray should include a persistent colour marker dye and signs should be erected to alert people to the danger of consuming contaminated fruit.

Refer to labels to determine the recommended times for application, application techniques and suitable growth stages of the weed.

Integrated Management
Successful long term weed management programs involve the appropriate combination of a number of control methods. A good strategy is to keep clean areas free of weeds and manage them to prevent weed invasion, clean up lightly infested areas with herbicides and tackle heavier infestations using a variety of methods, or in small parcels, as finances permit. For example, if a farm has a ragwort problem the aim is to prevent any ragwort plants flowering and to slowly deplete soil seed reserves.

One management scenario could be:

- **Chemical**: spray ragwort plants at the rosette stage.
- **Mechanical:** the use of heavy earthmoving equipment to scrape site clear of weeds, batter/modify banks eg Excavator
- **Revegetation**: plant an appropriate indigenous native mix, planting can out compete, shade, starve competing weeds depending on the weed species
- **Plant Competition**: fertilise the soil so that desirable species are advantaged.
- **Grazing**: develop a grazing program with initial heavy stocking with sheep to suppress the weed and prevent seeding. (Bushland section)
- **Follow-Up**: keep the plant in-check with regular grazing and spot spraying of emerging plants.
- **Biological Control**: introduce ragwort flea-beetles or other agents to the worst infestations to provide long term suppression of the weed. (DSE/DPI)
- **Monitoring of Site**: continue to maintain pastures, graze them judiciously, monitor biocontrol and remove any emerging plants.

Follow-up work and inspections are a vital component of a weed control program. Once the weeds are under control a watchful eye will ensure it stays that way!

Further Information
Refer to Agriculture Notes and other Landcare Notes, including the Pest Plant and Biological Control series. Contact the local office of the Department of Sustainability and Environment for more detailed advice on weed management.

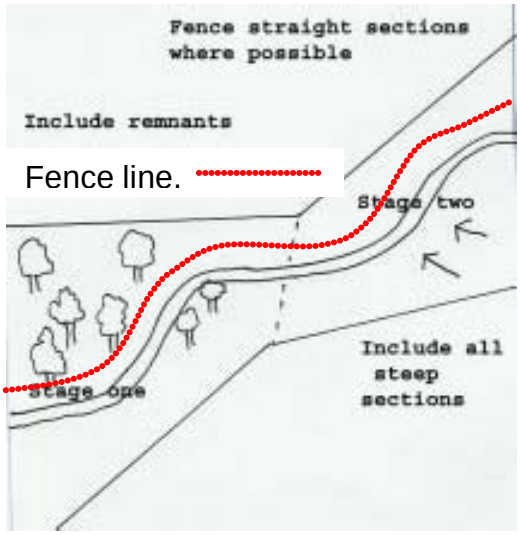
Revegetation

Weed control is often a precursor to revegetation activities, particularly in degraded systems such as many streamside reserves. Where environmental benefits are being sought from these activities, the priority given to the site may be elevated by the significance of the overall outcomes. Generally, the priority for vegetation protection is to protect what remains, enhance existing remnants then restore through revegetation

The Strzelecki Ranges are formed from uplifted sedimentary mudstone. The range attracts high rainfall; therefore many creeks dissect the hills which are actively eroding.
The ranges have the capacity to grow a huge, dense forest –the Great Forest of South Gippsland (refer EVC, 29, 30) which deflected and absorbed the rainfall, slowing fast water movement and therefore the potential for erosion.

The creeks were filled with many ferns, fallen logs and sedges which formed natural sediment traps. With 90% of this vegetation cleared in the last 100 years the erosion has increased. In the last decade many landowners have begun to protect these watercourses with the added benefits of removing stock and machinery from steep, dangerous land. (At least applicable to adjoining farms)
On-ground work which takes into account sound environmental outcomes may be eligible for partial funding through NHT or other funding sources.

Planning- fencing
The stream sides are often high and steep, especially on the side which is actively eroding. Locating the fence where the slope levels out makes construction and maintenance easier, effectively controls stock, and reduces the danger of machinery accidents. This will also include the worst of the erosion.
Allow plenty of space for the large plants which grow in these protected gullies to develop. There is potential for new habitat for native wildlife, particularly birds. Wider sections mean permanent habitat and the corridors allow movement to similar restoration works and existing remnant stands. The benefit of shelter for stock is greatly increased if the vegetation is wide and dense.



Taking these things into account may result in a larger than expected project site but one which is more likely to be sustainable and hence attract funding from a variety of sources into the future. Large projects can be developed in stages if a temporary stock proof / people/vehicle proof fence Star pickets, ringlock) and plain wire) can be erected which can be dismantled and used for the next section

Planning – plant establishment.
Spot spraying and planting tubestock, although time consuming initially, has proven to be very effective. WGCMA indicates that an average of 1200 plants per lineal kilometre is the rule of thumb measurement for this type of riparian revegetation.
Direct seeding a broad cross section of identified species on the river flat areas in Zones 1 & 3 could prove a very effective and efficient method of quickly developing cover. The plants to be reinstated are to be a mix of those species which naturally grew in the gullies before clearing. They are perfectly adapted to the conditions and therefore grow very fast and remain healthy. They quickly fill up the space, shading out pasture and many weed species after five years if maintained and gaps are filled. Weeds, particularly blackberries, still need to be controlled as they would on other areas of the property. A wide area with dense understorey plants results in less light penetration and in time a reduction in weeds such as thistles. Over time the plants naturally regenerate from seed fall as the conditions change to favour vegetation.

Revegetation Species Recommendations

The following species should be used in plantings in the Bushland Area, to re-instate the natural understorey vegetation, once the dominant pasture grasses and weeds are eradicated:

Revegetation Species List: Bushland Area, (refer to appendix 2 EVC 16)

Botanical name	Common Name
Acacia dealbata	Silver Wattle
Acacia melanoxylon	Blackwood
Acacia verticillata ssp. verticillata	Prickly Moses
Bedfordia arborescens	Blanket Leaf (once shelter created)
Carex appressa	Tall Sedge
Coprosma quadrifida	Prickly Currant Bush
Eucalyptus strzeleckii	Strzelecki Gum
Eucalyptus cypellocarpa	Mountain Grey Gum
Eucalyptus viminalis	Manna Gum
Gahnia sieberiana	Red-fruited Saw-sedge
Goodenia ovata	Hop Goodenia
Goodia lotifolia	Golden Tip
Gynatrix pulchella	Austral Hemp Bush
Melicytus dentatus	Tree Violet
Indigofera australis	Austral Indigo
Lepidosperma elatius	Tall Sword-sedge (dominant species -
Leptospermum continentale	Prickly Teatree
Lomandra longifolia ssp. longifolia	Long-leaf Mat-rush
Melaleuca ericifolia	Swamp Paperbark (dominant species
Olearia argophylla	Musk Daisy Bush
Olearia lirata	Showy Daisy Bush
Pimelea axiflora	Bootlace Bush
Pittosporum bicolor	Banyalla
Poa labillardieri	Large Tussock-grass
Polyscias sambucifolius	Elderberry Panax
Pomaderris aspera	Hazel Pomaderris
Prostanthera lasianthos	Victorian Xmas Bush
Rapanea howittiana	Mutton Wood

Solanum aviculare	Red-fruited Kangaroo Apple
Solanum laciniatum	Orange-fruited Kangaroo Apple

Table: Revegetation schedule

STAGE	AREA	WEED REMOVAL TIMING	ORDER PLANT STOCK	REVEGETATE
Stage 1	Zone 1	November 2007	November 2007	Spring 2008
Stage 2	Zone 3	November 2008	November 2008	Spring 2009
Stage 3	Zone 3	November 2009	November 2009	Spring 2010
Stage 4	Zone 4	Integrate into P & G Park maintenance cycles		

The twelve month gap between weed clearing and revegetation allows plenty of time to manage weed regrowth before planting otherwise this may become an issue later.
It also allows plenty of time for seed or cutting stock to be sourced and grown for the optimum planting and growing time the following spring.

Recommended Plant stock suppliers

There are two established and well known Tubestock suppliers in South Gippsland and a Seed bank for direct seeding:-

- **Melaleuca Nursery**
  Pearsalls Rd
  Inverloch
  VIC, 3996
  Contact Details
  Ph: (03) 5674 1014

- **Koorooman Native Flora Nursery**
  390 Leongatha North Rd
  Leongatha North
  VIC, 3953
  Contact Details Ph: (03) 5668 6301

- **Leongatha Seed Bank**
  Contact Details
  Geoff Trease - Manager
  Ph (03) 5662 2453
  Mob 0400746828
  geofft@wgcma.vic.gov.au or WGCMA -Leongatha Office
  Ph (03) 5662 4555

The Leongatha Seedbank also provides an important source of information for the community in areas such as:

- Developing Revegetation Projects.
- Collection of Seed from Indigenous plants.
- Direct Seeding and Revegetation Advice
- The application of improved techniques.

- Community Training Projects.

Zone 1

Length – 213 m
Area – .75 hectares

Zone includes the area form the rear of the playground along the river to the South West Corner of the Park, sometimes referred to as the 'Glade's at the bottom of the hill**:**

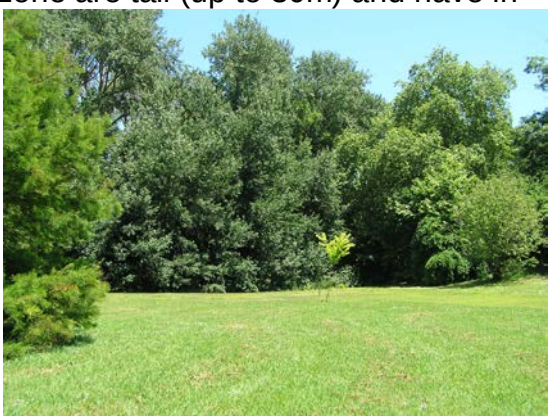
White poplars & Ivy (Glades)

- The river banks
- the 'Glades'

It is proposed that Zone 1 form stage 1 of the WGCMA project. This zone encompasses both SGSC land on freehold title on the park side of the river and Crown land forming the river frontage for which SGSC is the committee of Management.
The vegetation consists predominately of identified weeds species, which have completely dominated the whole site rendering it virtually impenetrable. Some mature exotic trees (Park plantings are interspersed throughout the site and very little if any remnant indigenous vegetation remains. The land is generally flat (river flat) rising to meet the steep sided hill at the rear of the Park.

All trees to remain are to be clearly identified marked by the SGSC Parks & Garden Manager in conjunction with the Project Manager for the WGCMA, to the satisfaction of a MPAC representative prior to any work being undertaken.

- **Windbreak**: It is proposed to leave a ten metre wide (min.) windbreak immediately behind the existing park plantings at the base of the Southern corner of the hill (refer Map Zone 1). An appropriate length and width can be determined at the time of the clearing works. There is concern that by clearing the area to the SW of the existing Park plantings, strong weather changes and the associated strong wind gusts could adversely affect these plantings that up until now have grown in a very sheltered environment. Such a significant weather change may cause windthrow i.e. push the trees over.
- The white poplars throughout this zone are tall (up to 30m) and have in the past presented SGSC with serious management issues due to their instability. Some are leaning over the access road and have fallen in the past, blocking tracks.



- Some white Poplars overhang other significant trees and may require an Arborist /elevated work platform to assist in their removal.
    - Initiate SGSC & WGCMA work safety procedures accordingly.
- Revegetation protection fencing will be required as this area is accessible to the public and possibly their vehicles. Zone 1 used to be a popular fishing spot.
- It is proposed that the large volume of biomass generated by the weed removal will be stockpiled and burnt when dry, this can be carried out 'in-situ', care must be taken to keep stockpiles well away from identified significant trees.

Zone 1 has been recommended as stage 1 because:

- The clearing of this site will provide the greatest benefit to the park users by adding up to 10% to the park area in an out of the way area.
- Generally the works can be easily isolated from day to day park usage.
- The stockpiles can be burnt in relative isolation.
- Clearing this site provides greatest immediate impact due the high density of weed growth.
- Revegetation can easily fenced but still allow limited access to park users. (Opportunity for direct seeding).
- Due to the flat site, a slashing regime can easily be introduced to manage weed regrowth on a flat area.

SW View over the river, note extensive White Poplar thickets downstream

Zone 1, WEEDS

The following list of weed species although not exhaustive, represents those found over several site visits by the author confirming the list identified by Andrew Paget in the Mossvale Park Management Plan 1998.
In the following table, the priority is given considering:-

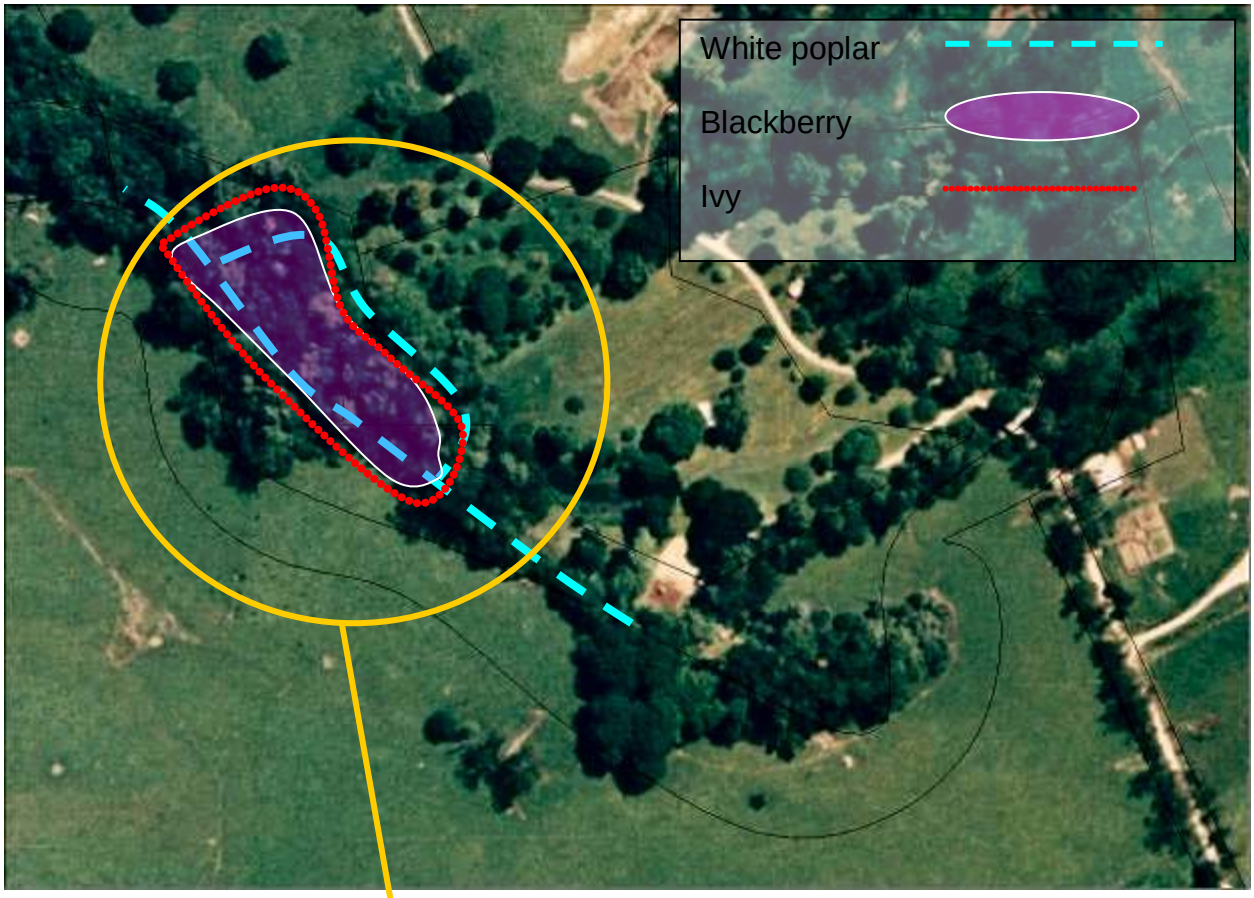
- Declared Status
- Impact on the site
- Existing and future impact outside the Park.

Refer to Appendix 5 for detailed weeds notes
Site assessment, mapping and photo point establishment completed in spring the previous year.

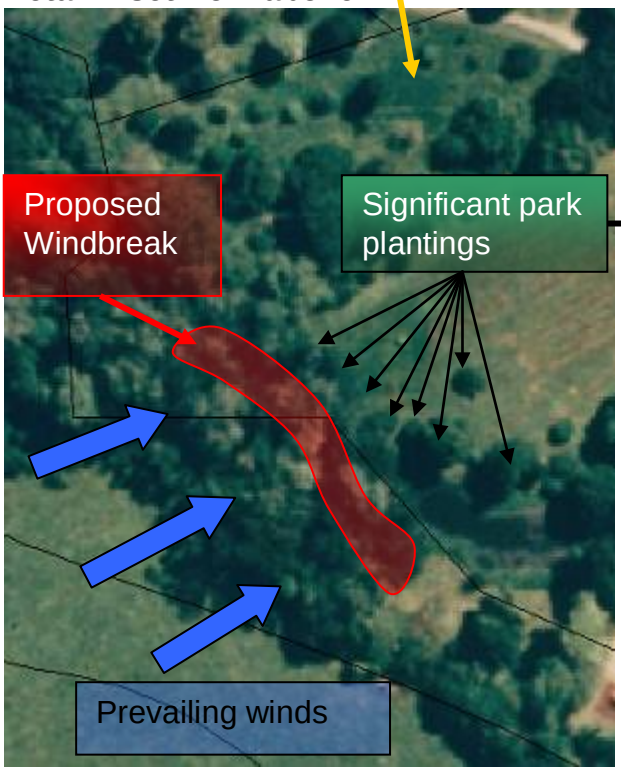
Common Name	Botanical Name	Status	Priority	Control method	Month
Ivy	*Hedera helix*	**E**	**1**	**Cut & paint stems**	**spring**
				Mechanical/Slash/spray regrowth	**Spring**
Tutsan	*Hypericum androsaemum*	**R**	**1**	**Slash**	**Spring**
White Poplar	*Populus alba*	**E**	**1**	**Cut & paint stumps**	**As required**
Blackberry	*Rubus fruticosus* sp. agg.	**R**	**1**	**Mechanical/Spray regrowth**	**summer**
Basket Willow	*Salix alba*	**R**	**2**	**Cut & paint stumps**	**As required**
Common sallow	*Salix cinerea*	**R**	**2**	**Cut & paint stumps**	**As required**
Californian Thistle	*Cirsium arvense*	**C**	**2**	**Spray**	**Late Spring**
Spear Thistle	*Cirsium vulgare*	**C**	**2**	**Spray**	**Late Spring**
Hawthorn	*Crataegus monogyna*	**C**	**2**	**Mechanical/ Cut & paint stems**	**As required Spring**
Wild Plum	*Prunus cerasifera*			**Cut & paint stumps**	**Late spring**
Black Locust	*Robinia pseudoacacia*	**E**	**4**	**Mechanical/ Cut & paint stems**	**As required Spring**
Ragwort	*Senecio jacobaea*	**C**	**2**	**Spray**	**Late spring**
Elm Suckers	*Ulmus* sp.	**E**	**1**	**Cut/slash**	**As required**

Status
The status relates to whether the species has been declared noxious under the CaLP Act (1994). **S**= State Prohibited **P**= Regionally Prohibited **C**= Regionally Controlled **R**= Restricted, **E =** Environmental, **Priority** ,Highest 1 to Lowest 5

Map, Zone 1



Detail inset from above



Zone 2

Length – 375 m
Area – 0.8 hectares

Zone includes the area form the bridge at the entrance of the park, along the river to the rear of playground and includes**:**

- The river banks
- the 'peninsula'
- rear of picnic shelter & playground

White poplars & Ivy (peninsula)

It is proposed that Zone 2 form stage 2 of the WGCMA project. This zone encompasses both SGSC land on freehold title and Crown land forming the river frontage on the park side of the river for which SGSC is the committee of Management.
The vegetation is predominately identified weeds species with some mature exotic trees (Park plantings) and remnant indigenous trees (*Eucalyptus cypellocarpa,* located at the rear of the Picnic shelter and smaller indigenous shrubs (*Coprosma quadrifida)*, scattered along the river banks in the 'peninsula'.

All trees to remain are to be clearly identified and marked clearly by the SGSC Parks & Garden Coordinator in conjunction with the Project Manager for the WGCMA, to the satisfaction of a MPAC representative prior to any work being undertaken.

Issues:

- The success of WGCMA proposal in zone 2 is dependent the adjoining land owner agreeing to the proposed works and subsequent revegetation and management. Without this the WGCMA may not proceed.

- The white poplars throughout this zone are tall (up to 30m) and have in the past presented SGSC with serious management issues due to their instability. Some are leaning in towards the access road and have fallen in the past, blocking the road.

- Some overhang other significant trees and will

require an Arborist /elevated work platform to assist in their removal.

- Revegetation fencing may encroach onto existing car parking areas.
- This area surrounds all the major park facilities such as, Picnic shelter, Children's playground, Toilets, Car parking and is therefore a high use zone. Careful safety management will be required while completing the weed removal in this zone. (refer to Section on OH&S)
- It is proposed that the large volume of biomass generated by the weed removal will be stockpiled and burnt when dry. There is an opportunity for this to be carried out in the 'peninsula' area clear of facilities area.
- Zone 2 has been recommended as stage 2 because of the high visual impact weed removal will create. Success in zone 2 will depend on how Zones 1 is managed i.e.
    - how effectively and efficiently weeds are removed
    - Effect on park usage
    - How effectively & safely the stockpiles are burnt.
    - Community response/reception to the physical & visual impacts made on the park.
    - And ultimately the success of the revegetation programs.

Silver Poplars on left overhanging road to Park Facilities Shelter

Mossvale Weed Management Plan 2007

Zone 2, WEEDS

The following list of weed species although not exhaustive, represents those found over several site visits by the author confirming the list identified by Andrew Paget in the Mossvale Park Management Plan 1998.
In the following table, the priority is given considering:-

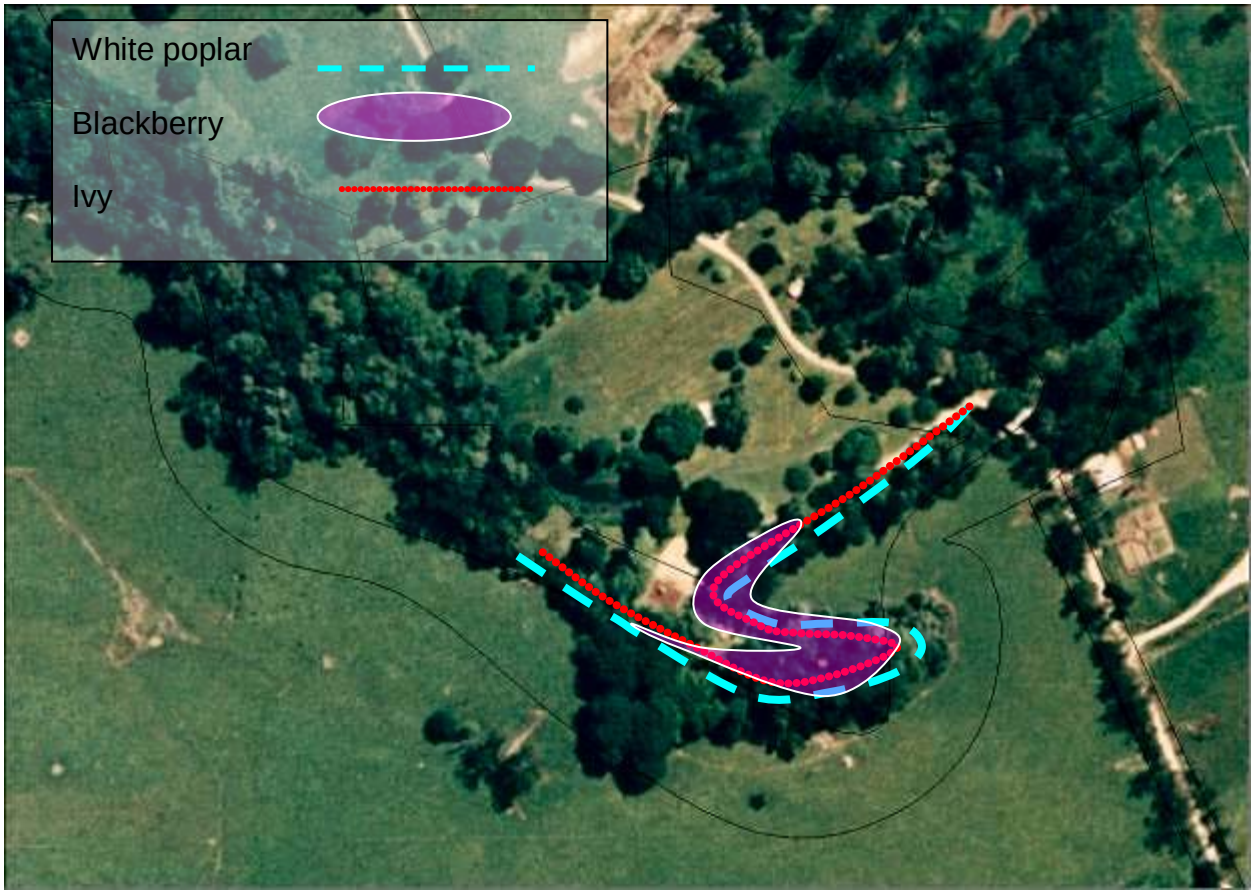
- Declared Status
- Impact on the site
- Existing and future impact outside the Park.

Refer to Appendix 5 for detailed weeds notes
Site assessment, mapping and photo point establishment completed in spring the previous year.

Common Name	Botanical Name	Status	Priority	Control method	Month
Ivy	*Hedera helix*	**E**	**1**	**Cut & paint stems**	**spring**
				Mechanical/Slash/spray regrowth	**Spring**
Tutsan	*Hypericum androsaemum*	**R**	**1**	**Slash**	**Spring**
White Poplar	*Populus alba*	**E**	**1**	**Cut & paint stumps**	**As required**
Blackberry	*Rubus fruticosus* sp. agg.	**R**	**1**	**Mechanical/Spray regrowth**	**summer**
Basket Willow	*Salix alba*	**R**	**2**	**Cut & paint stumps**	**As required**
Common sallow	*Salix cinerea*	**R**	**2**	**Cut & paint stumps**	**As required**
Californian Thistle	*Cirsium arvense*	**C**	**2**	**Spray**	**Late Spring**
Spear Thistle	*Cirsium vulgare*	**C**	**2**	**Spray**	**Late Spring**
Hawthorn	*Crataegus monogyna*	**C**	**2**	**Mechanical/ Cut & paint stems**	**As required Spring**
Wild Plum	*Prunus cerasifera*			**Spray**	**Late spring**
Black Locust	*Robinia pseudoacacia*	**E**	**4**	**Mechanical/ Cut & paint stems**	**As required Spring**
Ragwort	*Senecio jacobaea*	**C**	**2**	**Spray**	**Late spring**
Elm Suckers	*Ulmus* sp.	**E**	**5**	**Cut/slash**	**As required**

Status
The status relates to whether the species has been declared noxious under the CaLP Act (1994). **S**= State Prohibited **P**= Regionally Prohibited **C**= Regionally Controlled **R**= Restricted, **E =** Environmental, **Priority** ,Highest 1 to Lowest 5

Map, Zone 2



The White poplars, Ivy and Blackberry are evident along the river banks including the 'Peninsula' in the Southern corner of the park.
The Ivy and sucker growth from the Poplars has been restricted to the top of the bank by mowing and spraying but left to cascade and grow over and into the river.

River bank rear of Picnic shelter

White Poplars & Ivy Cover River bank

View of 'Peninsula

White Poplars & Ivy in the background

Zone 3

Length – 484 m
Area – 2.9 hectares

Zone includes the area form the NE corner of the park, along the river to the SE corner and includes:

- The “Pony Club area
- the River banks and
- The ‘Bush land’ area

Thistles

It is proposed that Zone 3 form stage3 of the WGCMA project. This zone encompasses both SGSC land on freehold title on either side of the river and Crown land forming the river frontages for which SGSC is the committee of Management.
The vegetation is predominately identified weeds species with some mature and immature exotic trees (Park plantings) and remnant endemic native vegetation.

Apart from the weed removal there is significant opportunity for revegetation (direct seeding) of the not only the riverbanks but also the North East corner of the park which has already been identified as a “Bushland Area”. In the 1998 Management plan, it was proposed that this area be revegetated back to bushland. The plan identified that this area contains vegetation of National Botanical Significance, as it is dominated by the Nationally Endangered (Briggs & Leigh, 1995) Strzelecki Gum (*Eucalyptus strzeleckii*) and is listed ‘Vulnerable’ under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). This species is endemic to South Gippsland and not represented in any conservation reserves. The area of the park dominated by this tree is a good location for the understorey to be rehabilitated to natural vegetation, to conserve a representative sample of this endangered plant community and species.
All trees to remain are to be clearly identified and marked by the SGSC Parks & Garden Manager in conjunction with the Project Manager for the WGCMA, to the satisfaction of a MPAC representative prior to any work being undertaken.

Weeds

The following list of weed species although not exhaustive, represents those found over several site visits by the author confirming the list identified by Andrew Paget in the Mossvale Park Management Plan 1998.

In the following table, the priority is given considering:-

- Declared Status
- Impact on the site
- Existing and future impact outside the Park.

Refer to Appendix 5 for detailed weeds notes

Mossvale Weed Management Plan 2007

Zone 3 WEEDS

Site assessment, mapping and photo point establishment completed in spring the previous year.

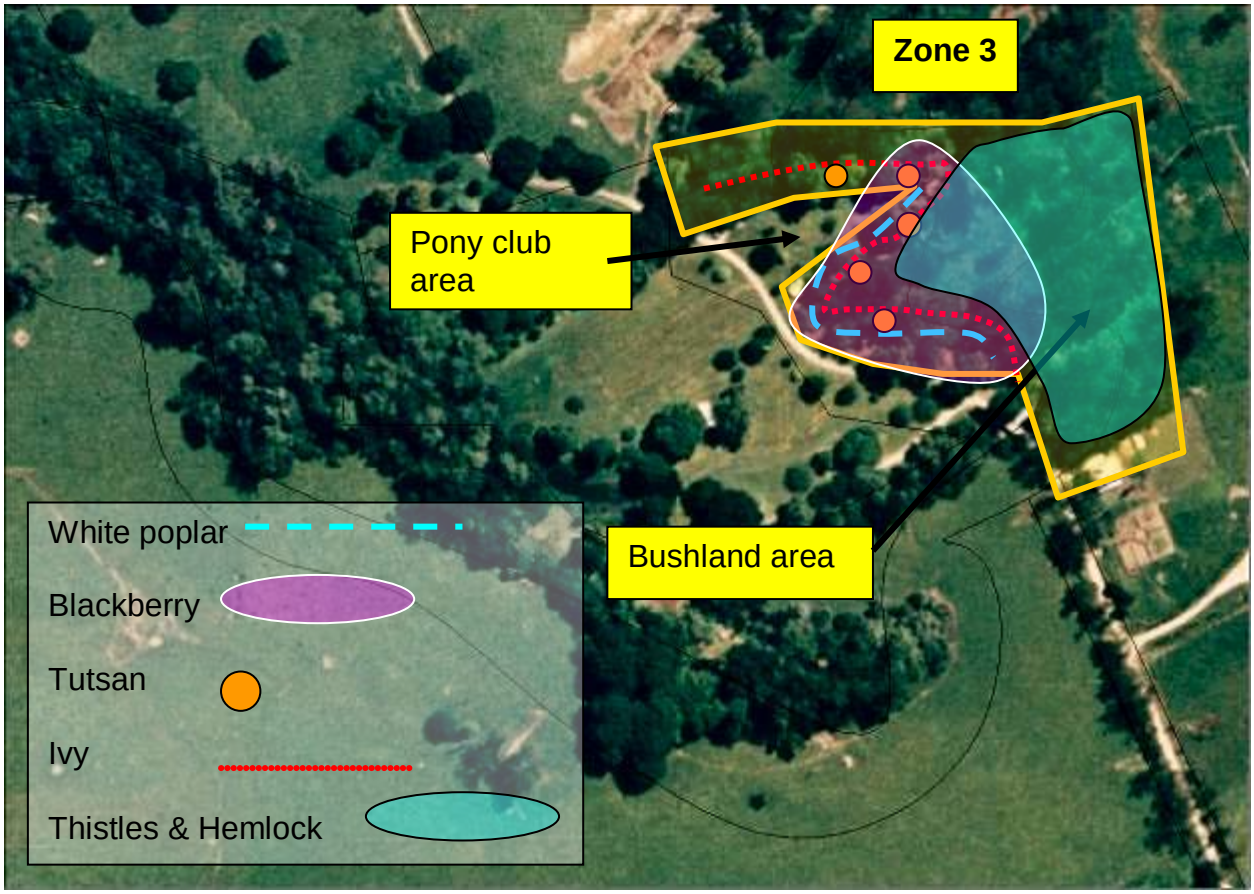
Common Name	Botanical Name	Status	Priority	Control method	Month
Hemlock	*Conium macularum*	**R**	**1**	**Spray**	**April-June**
				Slash	**Spring**
Ivy	*Hedera helix*	**E**	**1**	**Cut & paint stems**	**spring**
				Mechanical/Slash/spray regrowth	**Spring**
Tutsan	*Hypericum androsaemum*	**R**	**1**	**Slash**	**Spring**
Swamp Phalaris	*Phalaris arundinacea*	**E**	**1**	**Spray**	**Late spring**
White Poplar	*Populus alba*	**E**	**1**	**Cut & paint stumps**	**As required**
Creeping Buttercup	*Ranunculus repens*	**E**	**5**	**Spray**	
Blackberry	*Rubus fruticosus* sp. agg.	**R**	**1**	**Mechanical/Spray regrowth**	**summer**
Basket Willow	*Salix alba*	**R**	**2**	**Cut & paint stumps**	**As required**
Common sallow	*Salix cinerea*	**R**	**2**	**Cut & paint stumps**	**As required**
Sycamore	*Acer pseudoplantanus*	**E**	**2**	**Cut & paint stumps**	**As required**
Californian Thistle	*Cirsium arvense*	**C**	**2**	**Spray**	**Late Spring**
Spear Thistle	*Cirsium vulgare*	**C**	**2**	**Spray**	**Late Spring**
Hawthorn	*Crataegus monogyna*	**C**	**2**	**Mechanical/ Cut & paint stems**	**As required Spring**
Panic Veldt-grass	*Ehrharta erecta*	**E**	**5**	**Spray**	**Late spring**
Water Couch	*Paspalum distichum*	**E**	**5**	**Spray**	**Late spring**
Wild Plum	*Prunus cerasifera*			**Spray**	**Late spring**
Wild Radish	*Raphanus raphanistrum*	**E**	**4**	**Spray**	**Late spring**
				Slash	**Spring**
Black Locust	*Robinia pseudoacacia*	**E**	**4**	**Mechanical/ Cut & paint stems**	**As required Spring**
Ragwort	*Senecio jacobaea*	**C**	**2**	**Spray**	**Late spring**
Elm Suckers	*Ulmus* sp.	**E**	**5**	**Cut/slash**	**As required**

Status

The status relates to whether the species has been declared noxious under the CaLP Act (1994). **S**= State Prohibited **P**= Regionally Prohibited **C**= Regionally Controlled **R**= Restricted, **E =** Environmental,

Priority ,Highest 1 to Lowest 5

Map, Zone 3



The White poplars, Willows, Ivy, Blackberry and Tutsan are mainly along the river banks. The Swamp Phalaris pasture grasses, Blackberry, Thistles and Hemlock are dominant in the 'Bushland Area' in the NE corner of the park.

Pony Club Area,

Poplars, Ivy etc in distance, note Ivy blanketing riverbank with large E. cypellocarpa (remnant)

Zone 4

Area – 4.4 hectares EST.

Zone includes the rest of the park. This area is made up of large expanses of mown lawn, interspersed with significant exotic tree plantings. Includes five National Trust listed trees and many trees of significance listed by the SGSC in their 'Significant trees of South Gippsland' publication, and is the most frequented area of the park where weddings, Concerts, parties and picnics are held.
This site is made up of several areas:-

- The Hill
- Sound shell area
- Car park lawns.

This zone consists entirely of SGSC owned land on freehold title.
The weeds are confined to the south west and southern slopes of the hill, where there is a broad cross-section of weed species and very little if any remnant indigenous vegetation. The land is generally flat (river flat) rising to meet the steep sided hill at the rear of the Park.

Sound shell & Shade

The weeds in this section could be managed as part of the South Gippsland Councils' Parks & Gardens maintenance routine with assistance from MPAC.

- Involve the MPAC and perhaps a friends group in the weed eradication.
- Replacement plantings to be suitable exotics selected by the MPAC in conjunction with SGSC Parks & Gardens.
- Removal of some of the dead and poor plant materials in the park, to make way for better replacements on the hill slopes
- Additional specimen exotic trees within the park, to concentrate on additional autumn and year-round colour, and creating colour contrasts.
- Additional plantings proposed for creating enclosure of separate spaces
- Additional plantings proposed for re-introduction of historically relevant plant materials grown by the original Mossmont Nursery.
- Additional plantings proposed to strengthen the sense of enclosure in the park, with more evergreens around the northern park boundary.

Mossvale Weed Management Plan 2007

Zone 4, WEEDS

The following list of weed species although not exhaustive, represents those found over several site visits by the author confirming the list identified by Andrew Paget in the Mossvale Park Management Plan 1998.
In the following table, the priority is given considering:-

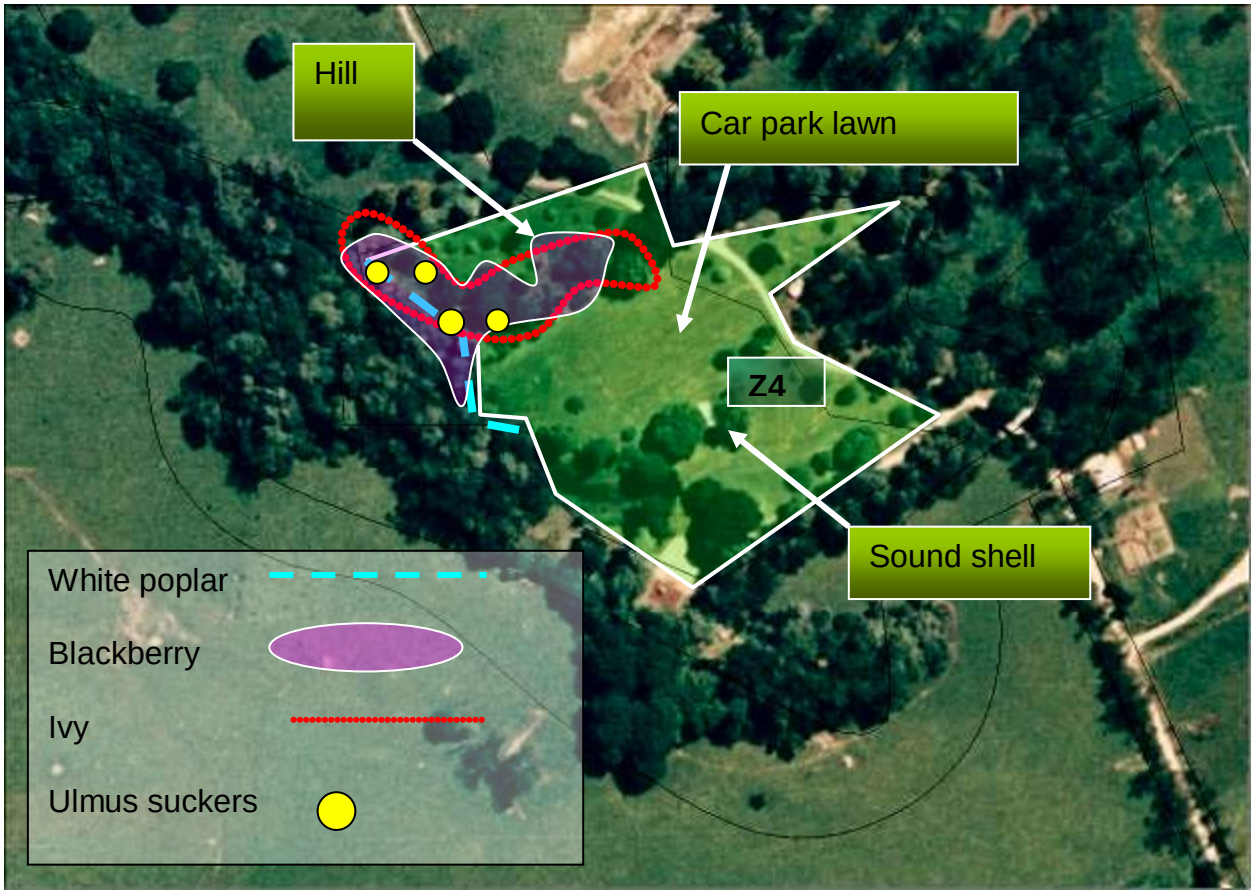
- Declared Status
- Impact on the site
- Existing and future impact outside the Park.

Refer to Appendix 5 for detailed weeds notes
Site assessment, mapping and photo point establishment completed in spring the previous year.

Common Name	Botanical Name	Status	Priority	Control method	Month
Ivy	*Hedera helix*	**E**	**1**	**Cut & paint stems**	**spring**
				Mechanical/Slash/spray regrowth	**Spring**
Tutsan	*Hypericum androsaemum*	**R**	**1**	**Slash**	**Spring**
White Poplar	*Populus alba*	**E**	**1**	**Cut & paint stumps**	**As required**
Blackberry	*Rubus fruticosus* sp. agg.	**R**	**1**	**Mechanical/Spray regrowth**	**summer**
Californian Thistle	*Cirsium arvense*	**C**	**2**	**Spray**	**Late Spring**
Spear Thistle	*Cirsium vulgare*	**C**	**2**	**Spray**	**Late Spring**
Hawthorn	*Crataegus monogyna*	**C**	**2**	**Mechanical/ Cut & paint stems**	**As required Spring**
Wild Plum	*Prunus cerasifera*			**Cut & paint stems**	**Late spring**
Black Locust	*Robinia pseudoacacia (cultivars of this species have been deliberately planted)*	**E**	**4**	**Mechanical/ Cut & paint stems**	**As required Spring**
Ragwort	*Senecio jacobaea*	**C**	**2**	**Spray**	**Late spring**
Elm Suckers	*Ulmus* sp.	**E**	**1**	**Cut/slash**	**As required**

Status
The status relates to whether the species has been declared noxious under the CaLP Act (1994). **S**= State Prohibited
P= Regionally Prohibited **C**= Regionally Controlled **R**= Restricted, **E =** Environmental, **Priority** ,Highest 1 to Lowest 5

Map, Zone 4



Ulmus (Elm) suckers on hill and Black Locust (planted cultivar?)

Ragwort, Thistles, and Elm suckers

Monitoring

Monitoring performance and making changes
Monitoring is often the most neglected area of weed management, yet it is a vital part of the weed management cycle. Monitoring allows you to identify how well control measures are working, the rate of spread of weeds or the establishment of desirable vegetation, new threats to native vegetation, and factors that have arisen that will effect your site restoration. As a result of gathering fresh information, through a monitoring process, your weed management plan can be altered as needed to improve results and respond to changes in the environment.

Monitoring involves:-

- Mapping the site at regular intervals,
- Taking photos at selected photo points and revisiting site information to check if any data that impacts on your management needs to be updated.

Monitoring activity should focus on:

- Changes in the extent of weed populations, i.e. is more or less area covered
- Changes in the density of weed cover
- Occurrences of other weed species
- Unexpected impacts of weed control activity, eg off target damage, erosion or invasion by other species
- Changes in the extent and condition of native vegetation or other desirable vegetation
- Changes in any conditions which will impact on site restoration work.
- Mapping needs to take place at a similar time to that when the original map was done to allow valid comparisons.

By creating another site map and by making a fresh assessment of weed density you will be able to make useful comparisons between areas of native vegetation and weeds and what changes have occurred over time.

Comparisons with photographs previously taken from photo points will also help you to identify changes. Whilst photographs can effectively portray change, the reasons for change may not always be evident in the images. You will need to make observations about seasonal conditions or other factors that may be impacting on the results that you see. For example, if the season that has passed was particularly dry, weed populations may have declined due to water stress rather than weed work. Unexpected site disturbances such as fire and vehicle impacts also need to be considered when monitoring results and setting plans for the following season and beyond. Any of these or other events may result in you needing to revisit your priorities and change your action plans and possibly even your objectives.

Recording
By recording the information that you have gathered during the monitoring process on the map and a fresh site information sheet and by reviewing regular photographs taken at photo points you will be able build a picture of what is happening on the site over time. This will enable informed management decisions to be made. You are then in a good position to review your plan make the necessary changes and commence the cycle again. It might be a good time to have a BBQ!

Community Awareness & Participation

Publicity & Public consultation

Due to the anticipated community concern for the WGCMA proposed works in the Park, in particular issues like, visual amenity and significant tree removal, a strategic approach to community consultation will form the foundation to a successful weed eradication program. If the community are not involved in this process, the West Gippsland Catchment Management Authority may decide to proceed with other equally important works elsewhere.

Emphasis on the environmental benefits to be gained by the community, such as the elimination of an identified weed source which may adversely affect downstream activities, must form part of the strategy.
Activities such as:-

- Farming
- Creating Vegetation links for Native Flora & Fauna (fresh water crayfish & other fish species).
- That the Tarwin supplies drinking water to several towns.

Highlighting the actual legal requirements of the various authorities may not alone prove effective.

Suggested Strategy elements could be:-

- Newspaper Advertisements and articles.
- Community consultation meetings in the park that allows people to see the effects of the weeds.
- Notices in the park clearly identifying proposed works and when, with contact numbers. Located in the picnic shelter perhaps.
- Organise consultation with local groups and committees that have or may have a future interest in the park.

Develop promotional material eg Mossvale Park Pamphlet, To achieve this, a 3-fold A4 brochure could be produced, and distributed to community groups and relevant authority's' offices (also held on-site at the park) to increase public awareness of the facilities available at the rest areas along the trail.

- Advertise expressions of interest for Friends group
- Advertise park activities, eg 'Planting Days'
- Develop and maintain a web site for Mossvale Park.

Friends List

A friends list should be created for the Park consisting of people interested in the park and willing to participate on a voluntary basis in the maintenance of the Park.

- This group should be notified of and involved in regular annual planting activities, and be involved in the testing and selection of plant materials, soliciting donations of appropriate plants for planting, and hunting for historically important material for developing interpretative signage etc in the Park.
- The group can also serve an important role in keeping an eye on the trail and therefore in reducing vandalism.
- The group may also be able to aid in the promotion of the trail by distributing the promotional brochure on a regular basis.

Funding

As with most rural Local Government organisations and State Government Departments funding is scarce. With huge asset bases and limited opportunities to increase funding these organisations are rationalising their assets and as a consequence they are limiting the development of new asset projects which they perceive, quite rightly, a burden on their already taxed budgets. Therefore it is an imperative that Communities actively engage with these authorities in developing a strategic outlook on any new potential asset project. Government agencies may be able to assist with seed funding and from there work with community groups in being innovative to secure funding from a variety of sources, whether they Government of from private enterprise.
Project funding can come from a variety of sources:-

Table Funding Opportunities

Source	Description	Contact	Title
South Gippsland Shire Council	Capital Works	Guy Wilson Brown. Anthony Seabrook. Steven Missen. Chris Rankin	General Manager. Manager Assets. P&G Coordinator Environment Planner.
SGSC	Community Grants & other		Grants officer
SGSC	Discretionary funding	Cr Lewis	Local Councillors
SGSC	From existing recurrent budgets (Maint.)	Senior SGSC Officers??	
West Gippsland CMA	Capital works Maintenance works	Mel Gibson	Project Officer
DSE	Crown Land Comm. Grants	Traralgon Office Peter Merrick	
BushTender Program DSE or WGCMA	BushTender program is designed to pay for landholder services that better manage bush on private land using a bidding/auction process. These services may include fencing, weed and pest control and revegetation		

Source	Description	Contact	Title
Victorian Government	Victorian Volunteer Small Grants		
Victorian Government	Community Support - Strengthening Communities http://www.grants.dvc.vic.gov.au/		
South Gippsland Water	Hills 2 Ocean	SGW Foster office	
Landcare	http://www.landcareonline.com/funding_opportunity_		
Federal Government	http://www.communitywatergrants. gov.au/	Department of the Environment and Heritage	
	http://www.deh.gov.au/coasts/ pollution/cci/index.html	As above	
Envirofund Round 9	www.nht.gov.au/envirofund/ phone 1800 065 823.		

Some details.

Envirofund Round 9
Individuals and community groups across Australia are being encouraged to apply for grants of up to $50,000 for local environmental projects as part of the latest round of the Australian Government Envirofund.

South Gippsland Water Grants
South Gippsland Water offer two grant schemes aimed at improving water quality as well as encouraging water efficiency throughout our region.

H2O, Hills – 2 – Ocean
The H2O program promotes Catchment improvement activities in their area. These grants are available to land and property owners, farmers, special interest groups and educational organisations.
Activities supported by the H2O scheme all relate to improving water quality and preventing contamination in South Gippsland Water's water supply catchments. To date grants have been awarded for projects such as erosion prevention, fencing to protect vegetation and water courses, river rehabilitation and educational and promotional displays.

Grants and other funding opportunities available, (click on links)

Australia Post Community Development Grant

Funding opportunity for Australia Post Community Development Grant

Dilmah Water Quality Funding - Best Tea, Best Water
Freshly brewed grants on offer to help groups and schools improve our water quality

Mitre 10 Junior Landcare Grants Program
Through the Mitre 10 Junior Landcare Grants Program, any school or organisation that would like to involve their students in landcare projects, in conjunction with local landcare groups, can apply for grants to assist them with the cost of their projects.

Westpac Operation Backyard
Westpac Operation Backyard is a Westpac employee grant program which provides funding for environmental projects that Westpac employees are involved in as volunteers.

Threatened Species Grants open
Round 10 of the Threatened Species Network Community Grants Program is now open

Plan Implementation (10yr Plan)

This section deals with how issues identified in the above sections are going to be delivered, who is responsible for implementing the recommendations, and how it is going to be financed - it should be “SMART” - Specific, Measurable, Achievable, Realistic and within a Timeframe.
The proposed table of Capital works and maintenance offer a staged program of works based on prioritised hierarchy of need i.e. priority of works of each zone over three stages. As funding opportunities arise, SGSC and MPAC in partnership with the various community groups and authorities may change the order priority based on funding dollars that fit with the various funding opportunities.

The figures below reflect the estimated costs to South Gippsland Shire Council only.

Tables, Proposed Works Schedules

2007/08, Stage 1 (Zone 1)

Works	Cost	Timing	Responsibility	Funding
Preliminary Arboricultural Works	$3000	Sept-Oct ‘07	SGSC	SGSC, P&G recurrent budget
Weed removal Extra works in Park	$8000	Nov 2007	WGCMA/SGSC	SGSC
Weed maintenance Including Slashing of site	$5,000	2007/08	SGSC/MPAC	SGSC, P&G recurrent budget
Revegetation of extra works	$1500	Spring 2008	SGSC / MPAC/DSE/ Landcare	SGSC / Grant funding
Planting of selected Tree Species	$2000	Spring 2008	SGSC/DSE/ Landcare	SGSC / Grant funding/DSE
Fencing	$3000	Spring 2008	SGSC / MPAC/ Landcare	SGSC / Grant funding/DSE
TOTAL	**$22,500.00**			

2008/09, Stage 2 (Zone 2)

Works	Cost	Timing	Responsibility	Funding
Preliminary Arboricultural Works	$3000	Sept-Oct '07	SGSC	SGSC, P&G recurrent budget
Weed removal Extra works in Park	$8000	Nov 2008	WGCMA/SGSC	SGSC
Weed maintenance Including Slashing of site	$5,000	2008/09	SGSC/MPAC	SGSC, P&G recurrent budget
Revegetation of extra works	$1500	Spring 2009	SGSC / MPAC/DSE/ Landcare	SGSC / Grant funding
Planting of selected Tree Species	$2000	Spring 2009	SGSC/DSE/ Landcare	SGSC / Grant funding/DSE
Fencing	$3000	Spring 2009	SGSC / MPAC/ Landcare	SGSC / Grant funding/DSE
TOTAL	**$22,500.00**			

2009/10, Stage 3 (Zone 3)

Works	Cost	Timing	Responsibility	Funding
Preliminary Arboricultural Works	$3000	Sept-Oct '07	SGSC	SGSC, P&G recurrent budget
Weed removal Extra works in Park	$8000	Nov 2009	WGCMA/SGSC	SGSC
Weed maintenance Including Slashing of site	$1,000	2009/10	SGSC/MPAC	SGSC, P&G recurrent budget
Revegetation of extra works	$500	Spring 2009	SGSC / MPAC/DSE/ Landcare	SGSC / Grant funding
Planting of selected Tree Species	$2000	Spring 2009	SGSC/DSE/ Landcare	SGSC / Grant funding/DSE
Fencing	$3000	Spring 2009	SGSC / MPAC/ Landcare	SGSC / Grant funding/DSE
TOTAL	**$17,500.00**			

2010/2017, Maintenance all Zones

Works	Cost	Timing	Responsibility	Funding
Weed maintenance Including Slashing of site	$5,000	Per annum	SGSC/MPAC	SGSC, P&G recurrent budget
Replacement Revegetation	$1500	Per annum	SGSC / MPAC/DSE/ Landcare	SGSC / Grant funding
Extra & Replacement Planting of selected Tree Species	$2000	Per annum	SGSC/DSE/ Landcare	SGSC / Grant funding/DSE
Fencing	$500	Per annum	SGSC / MPAC/ Landcare	SGSC / Grant funding/DSE
TOTAL / annum	**$9,000.00**			

References

Briggs, J.D. & Leigh, J.H. (1995) "Rare or Threatened Australian Plants" CSIRO, Canberra.

Lyndon, E. (undated) "Mossvale Park" booklet

DSE web site

Landcare Web Site

Parsons, Cuthbertson Noxious Weeds of Australia

AusBotany (Andrew Paget) 1998 Mossvale Park Master Plan and Management Plan

Mary Ellis A history of Gardening in Australia

Appendix 1 South Gippsland Planning Scheme

Description of Zones & Overlays

PCRZ.

Purpose

To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
To protect and conserve the natural environment and natural processes for their historic, scientific, landscape, habitat or cultural values.
To provide facilities which assist in public education and interpretation of the natural environment with minimal degradation of the natural environment or natural processes.
To provide for appropriate resource based uses.

ESO 5

Statement of environmental significance

Erosion is recognised as a land management concern with diverse causes that may affect any property. Therefore it is important to encourage best practices for farming, building and associated land disturbances and to increase awareness of the issues that may exacerbate the process such as earthworks, control of water run-off and removal of vegetation.
The Department of Natural Resources and Environment has mapped certain areas in the Shire as susceptible to erosion. There are other areas within the Shire which have been specifically identified as prone to land slips. Whereas this overlay is applied to the areas susceptible to erosion as identified by the Department of Natural Resources and Environment, the Erosion Management Overlay is applied to the areas specifically identified as prone to land slips.

2.0 Environmental objective to be achieved

'To protect areas prone to erosion by minimising land disturbance and vegetation loss'.
'To prevent increased surface runoff or concentration of surface water runoff leading to erosion or siltation of watercourses.'

ESO6

AREAS SUSCEPTIBLE TO FLOODING

1.0 Statement of environmental significance

Areas susceptible to flooding are recognised as a land management concern with risks to both rural and non-urban areas throughout the municipality. It is necessary to ensure that any development maintains a free passage and temporary storage of floodwater, minimises flood damage, soil erosion, sedimentation, silting and is compatible with local drainage conditions. However, the identification of waterways, major flood paths, drainage depressions and high hazard areas throughout the Shire has not been completed. Therefore, as an interim measure it is necessary to identify those areas throughout the Shire that may be susceptible to flooding, pending the completion of extensive flood path mapping of the entire Shire.

2.0 Environmental objective to be achieved

To identify waterways, major flood paths, drainage depressions and high hazard areas in rural and non-urban areas which have the greatest risk and frequency of being affected by

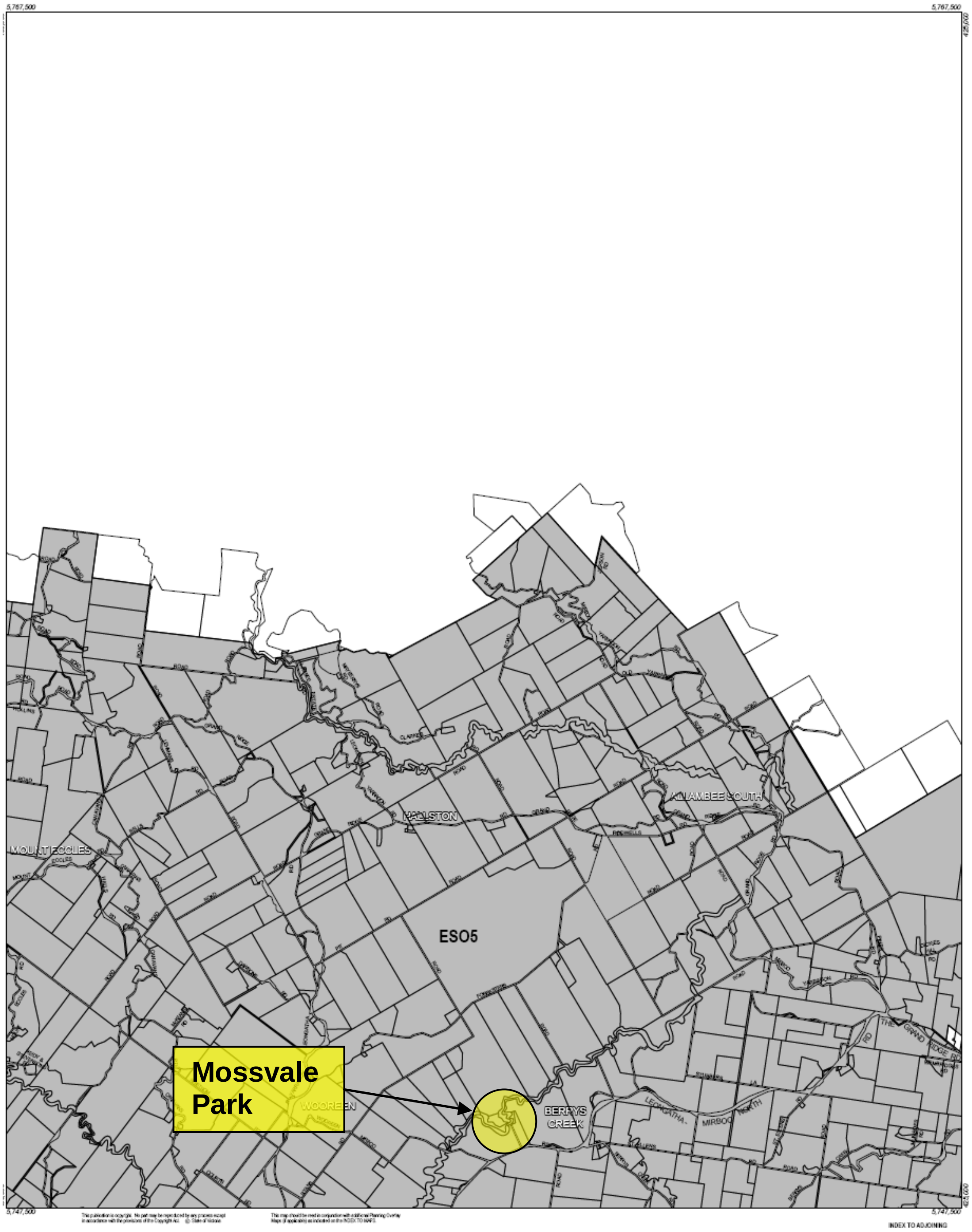
flooding.
To ensure that any development maintains the free passage and temporary storage of floodwater, minimises flood damage, soil erosion, sedimentation, silting and is compatible with local drainage conditions.
To reflect any declarations under Division 4 of Part 10 of the Water Act, 1989, if such have been made.
To protect water quality and waterways as natural resources in accordance with the provisions of relevant State Environment Protection Policies, and particularly in accordance with Clauses 34 and 35 of the State Environment Protection Policy (Waters of Victoria).

HERITAGE OVERLAY
Shown on the planning scheme map as **HO** with a number (if shown).
Purpose
To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
To conserve and enhance heritage places of natural or cultural significance.
To conserve and enhance those elements which contribute to the significance of heritage places.
To ensure that development does not adversely affect the significance of heritage places.
To conserve specifically identified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.
Scope
The requirements of this overlay apply to heritage places specified in the schedule to this overlay. A heritage place includes both the listed heritage item and its associated land. Heritage places may also be shown on the planning scheme map.

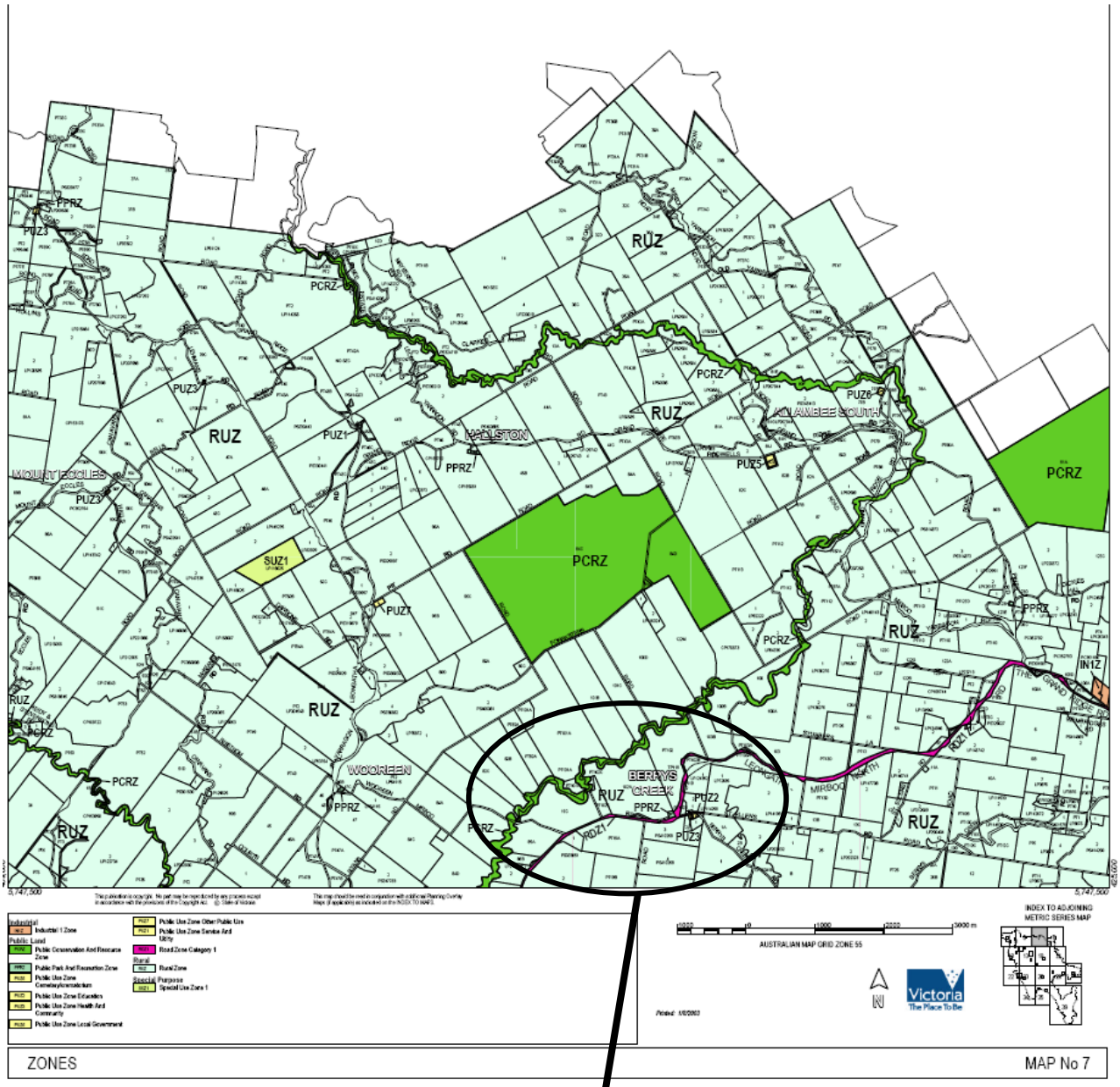
Mossvale Weed Management Plan 2007

ESO 5

SOUTH GIPPSLAND PLANNING SCHEME - LOCAL PROVISION



PCRZ



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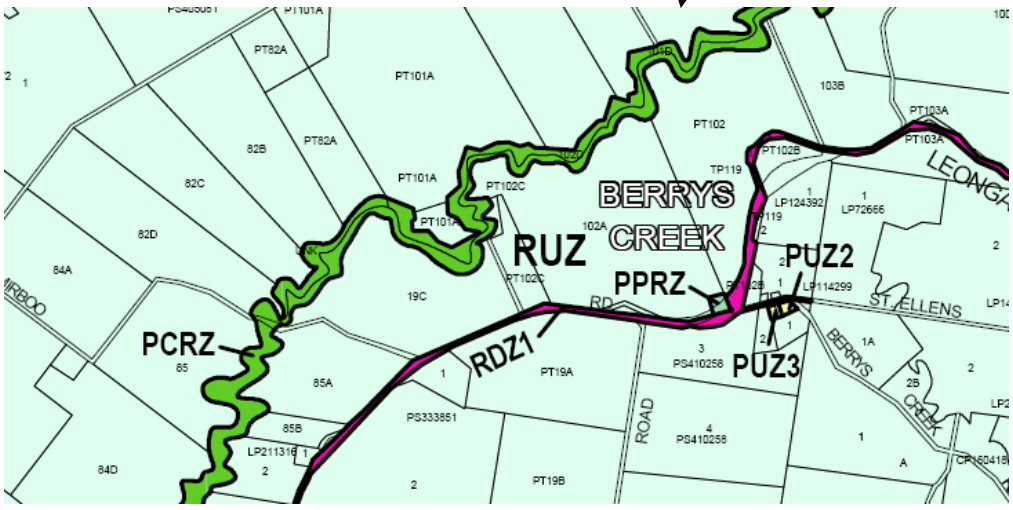
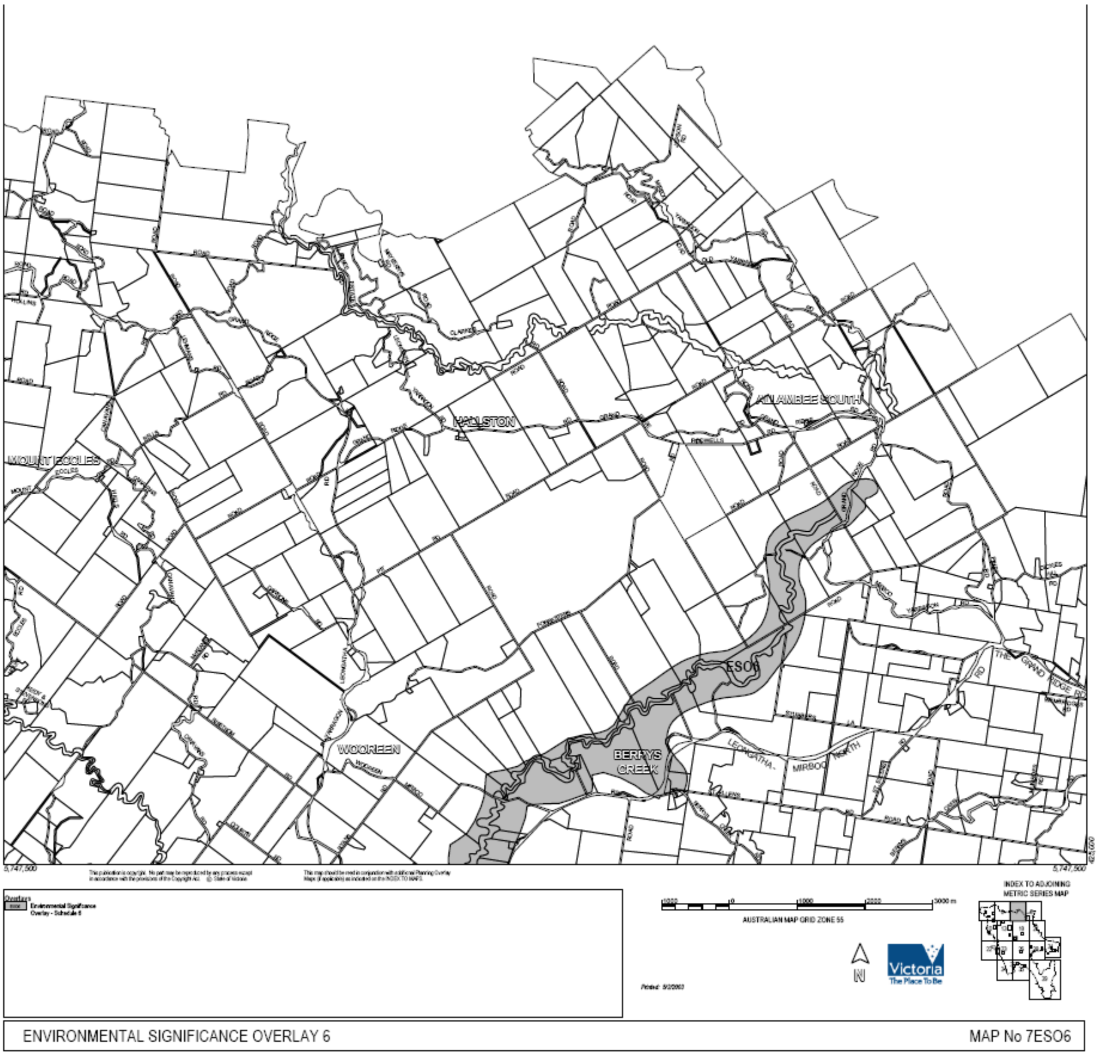


ESO 6


HALLSTON
MOUNT ECCLES
WOOREEN
BERRYS CREEK
ESO6
LEONGATHA
MIRBOO NORTH
AUSTRALIAN MAP GRID ZONE 55
INDEX TO ADJOINING METRIC SERIES MAP
Victoria
The Place To Be
ENVIRONMENTAL SIGNIFICANCE OVERLAY 6
MAP No 7ESO6

Appendix 2 Revegetation Species (EVC's)

EVC descriptions derived from Davies et. al (2001) Ecological Vegetation Class Mapping at 1:25 000 in Gippsland.

EVC 29 Damp Forest

Damp Forest grows on a wide range of fertile parent rock types on a variety of aspects, from sea level to submontane elevations. It is dominated by a tall eucalypt layer over a shrub layer of broad-leaved species typical of wet forest mixed with elements from dry forest types such as prickly or small-leaved shrubs. The ground layer includes forbs and grasses as well as moisture-dependent ferns.

EVC 29: DAMP FOREST

Lifeform	Scientific Name	Common Name
Overstorey Trees	*Eucalyptus obliqua*	Messmate
	Eucalyptus cypellocarpa	Mountain Grey Gum
	Eucalyptus viminalis	Manna Gum
	Eucalyptus radiata s.l.	Narrow-leaf Peppermint
	Eucalyptus muelleriana	Yellow Stringybark
	Eucalyptus globulus ssp. *pseudoglobulus*	Gippsland Blue Gum
Understorey Trees	*Acacia melanoxylon*	Blackwood
	Acacia dealbata	Silver Wattle
Shrubs	*Coprosma quadrifida*	Prickly Currant-bush
	Pomaderris aspera	Hazel Pomaderris
	Ozothamnus ferrugineus	Tree Everlasting
	Olearia phlogopappa	Dusty Daisy-bush
	Goodenia ovata	Hop Goodenia
	Prostanthera lasianthos	Victorian Christmas-bush
	Cassinia aculeata	Common Cassinia
	Sambucus gaudichaudiana	White Elderberry
	Acacia verniciflua	Varnish Wattle
	Acacia verticillata	Prickly Moses
	Lomatia fraseri	Tree Lomatia
	Pimelea axiflora	Bootlace Bush
	Olearia argophylla	Musk Daisy-bush
	Bedfordia arborescens	Blanket-leaf
	Olearia lirata	Snow Daisy-bush
	Pittosporum undulatum	Sweet Pittosporum
	Rubus parvifolius	Small-leaf Bramble
Climbers/	*Clematis aristata*	Mountain Clematis
Vines	*Pandorea pandorana*	Wonga Vine
	Billardiera scandens var. *scandens*	Common Apple-berry
	Glycine clandestina	Twining Glycine
Herbs	*Viola hederacea*	Ivy-leaf Violet
	Acaena novae-zelandiae	Bidgee-widgee
	Geranium potentilloides	Cinquefoil Cranesbill
	Stellaria flaccida	Forest Starwort

Lifeform		Scientific Name	Common Name
		Lagenophora stipitata	Common Bottle-daisy
		Euchiton gymnocephalus	Creeping Cudweed
		Hydrocotyle hirta	Hairy Pennywort
		Dichondra repens	Kidney-weed
		Senecio pinnatifolius	Variable Groundsel
		Plantago debilis	Shade Plantain
		Senecio minimus	Shrubby Fireweed
		Hypericum gramineum	Small St John's Wort
		Luzula meridionalis	Common Woodrush
		Geranium solanderi	Austral Cranesbill
		Veronica calycina	Hairy Speedwell
		Senecio hispidulus	Rough Fireweed
		Senecio linearifolius	Fireweed Groundsel
		Leptinella reptans	Creeping Cotula
		Urtica incisa	Scrub Nettle
		Desmodium gunnii	Southern Tick-trefoil
		Hydrocotyle laxiflora	Stinking Pennywort
Tree-ferns		*Cyathea australis*	Rough Tree-fern
Ferns		*Pteridium esculentum*	Austral Bracken
		Polystichum proliferum	Mother Shield-fern
		Blechnum cartilagineum	Gristle Fern
		Adiantum aethiopicum	Common Maidenhair
		Calochlaena dubia	Common Ground-fern
		Blechnum nudum	Fishbone Water-fern
		Pellaea falcata	Sickle Fern
		Blechnum minus	Soft Water-fern
Grasses		*Tetrarrhena juncea*	Forest Wire-grass
		Microlaena stipoides *var.* stipoides	Weeping Grass
		Poa sp.	Tussock Grass
		Poa tenera	Slender Tussock-grass
		Echinopogon ovatus	Common Hedgehog-grass
Sedges		*Lepidosperma laterale*	Variable Sword-sedge
		Carex appressa	Tall Sedge
		Carex breviculmis	Common Grass-sedge
		Lepidosperma elatius	Tall Sword-sedge
Other		*Lomandra longifolia*	Spiny-headed Mat-rush
Weeds	*	*Rubus vestitus*	Blackberry
	*	*Hypochoeris radicata*	Cat's Ear
	*	*Oxalis corniculata* s.l.	Creeping Wood-sorrel
	*	*Centaurium tenuiflorum*	Branched Centaury
	*	*Holcus lanatus*	Yorkshire Fog
	*	*Senecio jacobaea*	Ragwort
	*	*Prunella vulgaris*	Self-heal
	*	*Anthoxanthum odoratum*	Sweet Vernal-grass
	*	*Cirsium vulgare*	Spear Thistle
	*	*Rubus polyanthemus*	Blackberry
	*	*Anagallis arvensis*	Pimpernel
	*	*Plantago lanceolata*	Ribwort

EVC 16 Lowland Forest
Type 1:
This widespread form is found in West and South Gippsland and is commonly dominated by Messmate *Eucalyptus obliqua* and Narrow-leaf Peppermint *E. radiata.* Other eucalypts that may be present include Yellow Stringybark *E. muelleriana* (in South Gippsland), Mountain Grey Gum *E. cypellocarpa* and Swamp Gum *E. ovata* in the poorest drained areas.

EVC 16: LOWLAND FOREST (Type 1)

Lifeform	Scientific Name	Common Name
Trees	*Eucalyptus obliqua*	Messmate
	Eucalyptus radiata s.l.	Narrow-leaf Peppermint
	Eucalyptus consideniana	Yertchuk
	Eucalyptus cypellocarpa	Mountain Grey Gum
	Eucalyptus ovata	Swamp Gum
Shrubs	*Epacris impressa*	Common Heath
	Acacia mucronata	Narrow-leaf Wattle
	Leptospermum continentale	Prickly Tea-tree
	Pultenaea gunnii	Golden Bush-pea
	Cassinia aculeata	Common Cassinia
	Amperea xiphoclada var. *xiphoclada*	Broom Spurge
	Bauera rubioides	Wiry Bauera
	Goodenia ovata	Hop Goodenia
	Acacia verticillata	Prickly Moses
	Olearia lirata	Snow Daisy-bush
	Dillwynia glaberrima	Smooth Parrot-pea
	Ozothamnus ferrugineus	Tree Everlasting
	Cassinia longifolia	Shiny Cassinia

Lifeform		Scientific Name	Common Name
		Banksia marginata	Silver Banksia
		Rhytidosporum procumbens	White Marianth
		Tetratheca ciliata	Pink-bells
		Olearia phlogopappa	Dusty Daisy-bush
		Banksia spinulosa var. *cunninghamii*	Hairpin Banksia
		Hakea decurrens	Bushy Needlewood
		Pultenaea juniperina	Prickly Bush-pea
		Tetratheca bauerifolia	Heath Pink-bells
		Monotoca scoparia	Prickly Broom-heath
Herbs		*Gonocarpus tetragynus*	Common Raspwort
		Viola hederacea	Ivy-leaf Violet
		Lagenophora stipitata	Common Bottle-daisy
		Drosera peltata ssp. *auriculata*	Tall Sundew
		Hypericum gramineum	Small St John's Wort
		Opercularia varia	Variable Stinkweed
		Goodenia lanata	Trailing Goodenia
		Xanthosia dissecta	Cut-leaf Xanthosia
		Burchardia umbellata	Milkmaids
		Hydrocotyle hirta	Hairy Pennywort
		Poranthera microphylla	Small Poranthera
		Gonocarpus humilis	Shade Raspwort
Ferns		*Pteridium esculentum*	Austral Bracken
		Lindsaea linearis	Screw Fern
Sedges		*Gahnia radula*	Thatch Saw-sedge
		Lepidosperma laterale	Variable Sword-sedge
		Gahnia sieberiana	Red-fruit Saw-sedge
Climbers/Vines		*Billardiera scandens* var. *scandens*	Common Apple-berry
		Cassytha pubescens	Downy Dodder-laurel
		Clematis aristata	Mountain Clematis
		Cassytha glabella	Slender Dodder-laurel
		Amyema pendulum	Drooping Mistletoe
Grasses		*Tetrarrhena juncea*	Forest Wire-grass
		Poa sp.	Tussock Grass
		Microlaena stipoides var. *stipoides*	Weeping Grass
Other		*Lomandra longifolia*	Spiny-headed Mat-rush
		Lomandra filiformis	Wattle Mat-rush
Grass-trees		*Xanthorrhoea minor* ssp. *lutea*	Small Grass-tree
Lilies		*Dianella caerulea*	Paroo Lily
Orchids		*Cryptostylis leptochila*	Small Tongue-orchid
		Pterostylis longifolia	Tall Greenhood
		Chiloglottis valida	Common Bird-orchid
Weeds	*	*Hypochoeris radicata*	Cat's Ear
	*	*Centaurium tenuiflorum*	Branched Centaury

EVC 30 Wet Forest

This EVC occurs on fertile, well-drained loamy soils on a range of parent rock types to sub-montane elevations. Wet Forest is extensive over all aspects in the higher rainfall areas such as the Strzelecki ranges where cloud cover and fog drip increase effective precipitation but is largely restricted to protected gullies and southern aspects in moderate rainfall areas. Wet Forest is characterised by a tall eucalypt overstorey with scattered understorey trees over a tall broad-leaved shrub and tree fern understorey with a moist, shaded, ferny ground layer.

Vegetation: structure/floristics:
Wet Forest is most commonly dominated by Mountain Ash *Eucalyptus regnans.* It may also include Blue Gum *E. globulus* and Messmate *E. obliqua.* In eucalypt-free areas, Blackwood *Acacia melanoxylon* or Silver Wattle *A. dealbata* may be locally dominant. A range of other eucalypt species can be present but tend to be on the periphery of extensive areas dominated by Mountain Ash *E. regnans*. This includes Manna Gum *E. viminalis* ssp. *viminalis* (often occurring along major river flats and associated slopes), Strzelecki Gum *E. strzeleckii* and Gippsland Blue Gum *E. globulus* ssp.
pseudoglobulus. Messmate *E. obliqua* and Mountain Grey Gum *E. cypellocarpa* occur in Damp Forest on the 'drier' edges of stronghold areas of Wet Forest.
Tree-ferns are often present, particularly Rough Tree-fern *Cyathea australis* which can extend up onto drier slopes, Soft Tree-fern *Dicksonia antarctica* along the creek lines as well as some of the "wetferns" such as Mother Shield-fern *Polystichum proliferum* and Hard Water-fern *Blechnum wattsii*. Ray Water-fern *B. fluviatile* is commonly found associated with watercourses and drainage lines within Wet Forest. The epiphytic Kangaroo Fern *Microsorum pustulatum* ssp. *pustulatum* is found in both this EVC and the related Cool Temperate Rainforest.
Common understorey broad-leaved shrubs are Snow Daisy-bush *Olearia lirata*, Musk Daisy-bush *O. argophylla,* Blanket Leaf *Bedfordia arborescens*, Hazel Pomaderris, *Pomaderris aspera,* Cassinia, *Cassinia* ssp., Tree Lomatia *Lomatia fraseri* and Austral Mulberry *Hedycarya angustifolia.* The shrub, Prickly Currant-bush *Coprosma quadrifida,* and the vines Mountain Clematis *Clematis aristata* and Wonga Vine *Pandorea pandorana* are also often found. Other shrubs sometimes present include
Sweet Pittosporum *Pittosporum undulatum*, Stinkwood *Zieria arborescens*, Tree Lomatia *Lomatia fraseri* and Victorian Christmas-bush *Prostanthera lasianthos*. At the drier end of this EVC the shrubby understorey becomes very low in stature (less than 2m) and broad-leaved species except Snow Daisy-bush *Olearia lirata* are notably absent.
The ground cover is depauperate with Shade Nettle *Australina pusilla* ssp. *muelleri* being the main character species.

Comments:
This mapping unit includes a very wide range of structural variation ranging from tall old-growth forest through to regrowth forest and scrub which has the potential to develop into tall forest. It also includes treeless areas dominated by wet scrub and even "old-fields" which were once cleared but are now dominated by native vegetation. These areas are typically dominated by wet forest broad-leaved shrubs such as Snow Daisy-bush *O. lirata*, Hazel Pomaderris *Pomaderris aspera*, Three-nerved Cassinia *Cassinia trinerva* and Musk Daisy-bush *Olearia argophylla.* The native fireweed, Fireweed Groundsel *Senecio linearifolius* is often present. Areas of old-growth Wet Forest are extremely localised in the study area. One large patch was observed immediately west of Traralgon Creek Road in the Strzelecki ranges.
Invasive weeds in this EVC include Tutsan *Hypericum androsaemum* and Blackberry *Rubus fruticosus.*
In the most topographically protected sites within Wet Forest, Cool Temperate Rainforest develops.
As conditions become drier on the margins of Wet Forest, Damp Forest develops.

Appendix 3 Vascular Plant Species List

From AusBotany Mossvale Park Management Plan 1998

Species identified by Andrew N. Paget, 1998. This list is primarily a list of species naturalized in the park, and most of the planted species are not listed and are documented on the key to the park base plan. (Refer appendix 4)

* Denotes naturalized alien species.
@ Denotes cosmopolitan species which may or may not be indigenous.
# Denotes planted species not observed naturalized.
$ Denotes indigenous species to this area which have also been observed naturalized .outside their normal ecological range.
& Denotes species observed spontaneous but not truly naturalized.
sp. agg. Denotes complexes of species which have not been segregated.

Nomenclature follows Ross, J.H. (1997) "Census of Vascular Plants in Victoria" National Herbarium: Melbourne.

FERNS

Dennstaedtiaceae

Pteridium esculentum	Austral Bracken

MONOCOTYLEDONS

Alismataceae

Alisma plantago-aquatica	Water Plantain

Cyperaceae

Carex appressa	Tall Sedge
* *Carex sp*.	Sedge
* *Cyperus eragrostis*	Drain Flat-sedge
Lepidosperma elatius	Tall Sword-sedge

Juncaceae

Juncus spp.	Rushes

Poaceae

* *Agrostis capillaris*	Brown-tope Bent
* *Bromus catharticus*	Prairie Brome
* *Cynodon dactylon*	Couch
* *Dactylis glomerata*	Cocksfoot Grass
* *Ehrharta erecta*	Panic Veldt-grass
* *Holcus lanatus*	Yorkshire Fog
* *Lolium perenne*	Perennial Ryegrass
Microlaena stipoides sp. agg.	Weeping Grass
* *Paspalum dilatatum*	Paspalum
@ *Paspalum distichum*	Water Couch
* *Pennisetum clandestinum*	Kikuyu

* *Phalaris arundinacea*	Swamp Phalaris
* *Poa annua*	Winter Grass
* *Setaria gracilis*	Kneed Setaria
* *Sporobolus indicus* var. *capensis*	Rats-tail Grass
Tetrarrhena juncea	Forest Wiregrass

DICOTYLEDONS

Amaranthaceae

Alternanthera denticulata	Lesser Joyweed
* *Amaranthus* sp.	Amaranth

Apiaceae

* *Conium maculatum*	Hemlock

Asteraceae

* *Arctotheca calendula*	Capeweed
* *Bellis perennis*	English Lawn Daisy
* *Cirsium arvense*	Clifornian Thistle
* *Cirsium vulgare*	Spear Thistle
Euchiton gymnocephalum	Creeping Cudweed
* *Hypochoeris radicata*	Flat Weed
* *Lapsana communis*	Nipplewort
* *Leontodon taraxacoides*	Hairy Hawkbit
Ozothamnus ferrugineus	Tree Everlasting
* *Senecio jacobaea*	Ragwort
* *Sonchus oleraceus*	Sow Thistle
* *Taraxacum officinale* sect. *ruderale*	Dandelion

Boraginaceae

* *Myosotis laxa*	Water Forget-me-not

Brassicaceae

* *Raphanus raphanistrum*	Wild Radish
* *Rorippa palustris*	Yellow Swamp Weed

Caryophyllaceae

* *Polycarpon tetraphyllum*	All Seed

Chenopodiaceae

* *Atriplex hastata*	Hastate Orache

Convolvulaceae

Calystegia marginata	Forest Bindweed

Euphorbiaceae

* *Euphorbia peplus*	Petty Spurge

Fabaceae

* *Lotus* sp.	Trefoil
* *Trifolium repens*	White Clover
Robinia pseudoacacia	Black Locust

Geraniaceae

Geranium solanderi	Cranesbill

Hypericaceae

* *Hypericum androsaemum*	Tutsan

Lamiaceae

* *Mentha pelugium*	Pennyroyal
@ *Prunella vulgaris*	Heal All

Malvaceae

Gynatrix pulchella	Austral Hemp Bush
* *Malva* sp.	Mallow
* *Modiola caroliniana*	Carolina Mallow

Mimosaceae

Acacia melanoxylon	Blackwood

Myrsinaceae

Rapanea howittiana	Mutton Wood

Myrtaceae

Eucalyptus cypellocarpa	Mountain Grey Gum
Eucalyptus obliqua	Messmate Stringybark
Eucalyptus strzeleckii	Strzelecki Gum
Eucalyptus viminalis	Manna Gum

Oxalidaceae

@ *Oxalis corniculata* sp. agg.	Yellow Woodsorrel

Plantaginaceae

* *Plantago coronopus*	Buckshorn Plantain
* *Plantago major*	Greater Plantain

Polygonaceae

* *Persicaria hydropiper*	Water Pepper
* *Polygonum aviculare*	Wireweed
* *Rumex obtusifolius*	Leafy Dock

Portulaccaceae

@ *Portulacca oleracea*	Pigweed

Primulaceae

* *Anagallis arvensis*	Scarlet Pimpernell

Ranunculaceae	
Clematis aristata	Austral Clematis
* *Ranunculus repens*	Creeping Buttercup
Rhamnaceae	
Pomaderris aspera	Hazel Pomaderris
Rosaceae	
Acaena novae-zealandiae	Bidgee-widgee
* *Crataegus monogyna*	Hawthorn
* *Prunus cerasifera*	Wild Plum
* *Rubus fruticosus* sp. agg.	Blackberry
Rubus parvifolius	Native Raspberry
Rubiaceae	
Coprosma quadrifida	Prickly Currant Bush
* *Galium aparine*	Cleavers
Galium ?ciliare	Bedstraw
Salicaceae	
* *Salix alba*	Basket Willow
* *Salix cinerea*	Common sallow
Scrophulariaceae	
@ *Veronica serpyllifolia*	Trailing Speedwell
Solanaceae	
Solanum aviculare	Red-fruit Kangaroo-apple
* *Solanum nigrum*	Deadly Nightshade
* *Solanum pseudocapsicum*	Winter Cherry
Urticaceae	
Urtica incisa	Scrub Nettle
Ulmaceae	
# *Ulmus* sp.	Elm

Appendix 4, Key of Vegetation within Mossvale Park

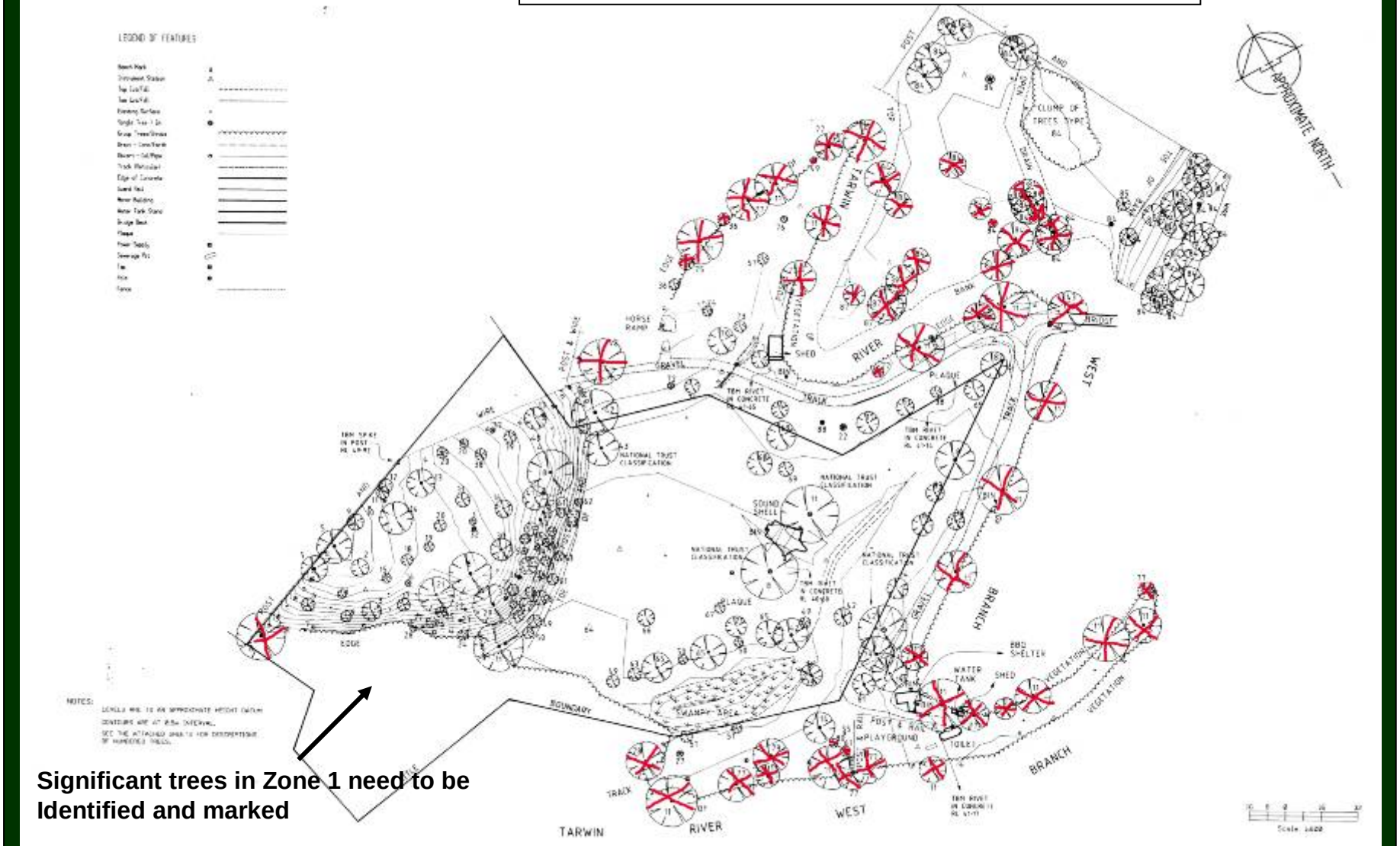
To be used in conjunction with the survey plan prepared by Beveridge Williams &Co – ref 7942 see below

No.	Common Name	*Botanical Name*
1	SILVER BIRCH	(Betula pendula)
2	DEODAR CEDAR	*(Cedrus deodara)*
3	DAIMYO OAK	*(Quercus dentata (seedling)*
4	WHITE ASH	*(Fraxinus americana)*
5	CYPRESS SPECIES	
6	WELLINGTONIA	*(Sequoiadendron giganteum)*
7	JAPANESE BLACK PINE	*(Pinus thunbergii)*
8	ALGERIAN OAK	*(Quercus canariensis)*
9	FIELD OR HEDGE MAPLE	*(Acer campestre)*
10	CHINESE PERSIMMON	*(Diospyros 'Kaki Daidaima'r)*
11	LONDON PLANE	*(Platanus x Acerifolia)*
12	BLACKWOOD	*(Acacia Melanoxylon)*
13	ENGLISH OR COMMON OAK	*(Quercus robur)*
14	VARIEGATED ELM	*(Ulmus carpinifolia 'Variegata')*
15	GOLDEN DEODAR	*(Cedrus Deodara 'Aurea')*
16	GOLDEN WEEPING ASH	*(Fraxinus excelsior' Aurea-Pendula')*
17	WASHINGTON THORN	*(Crataegus phaenopyrum)*
18	SCARLET OAK	*(Quercus coccinea)*
19	INDIAN BEAN TREE	*(Catalpa bignonioides)*
20	EVERGREEN ALDER	*(Alnus jorullensis)*
21	ELM	*(Ulmus Species)*
22	HONEY LOCUST	*(Gleditsia triacanthos 'Elegantissima')*
23	HONEY LOCUST	*(Gleditsia triacanth6s 'Ruby Lace')*
24	OAK	*(Quercus: possibly Canariensis x Dentata)*
25	COMMON WALNUT	*(Juglans regia)*
26	BLACK LOCUST	*(Robinia pseudoacacia 'Bessoniana')*
27	ELM	*(Ulmus minor 'Sarniensis')*
28	MEXICAN PINE	*(Pinus patula)*
29	RED OAK	*(Quercus borealis 'Rubra')*
30	NORFOLK ISLAND PINE	*(Araucaria heterophylla 'Excelsa')*
31	AMERICAN SWEET GUM	*(Liquidamber styraciflua)*
32	ROYAL PAULOWNIA	*(Paulownia tomentosa) ,*
33	PURPLE LEAF CHERRY PLUM	*(Prunus cerasifera 'Nigra')*
34	BOX ELDER MAPLE	*(Acern 'Pink Flamingo')*
35	CRAB APPLE	*(Malus hillieri)*
36	CLARET ASH	*(Fraxinus raywoodi)*
37	ALDER	*(Alnus possibly cordata)*
38	WEEPING SCOTCH ELM	*(Ulmus glabra 'Pendula')*
39	SYCAMORE MAPLE	*(Acer pseudoplatanus)*
40	SYCAMORE MAPLE	*(Acer pseudoplatanus 'Leopoldi')*
41	COMMON LIME OR LINDEN	*(Tilia cordata)*

42	CHESTNUT-LEAF	*(Quercus castaneifolia)*
43	OAK ORIENTAL PLANE	*(Platanus orientalis)*
44	CRAB APPLE	*(Malus 'Gorgeous')*
45	CRAB APPLE	*(Malus floribunda)*
46	CRAB APPLE	*(Malus loensis)*
47	RED FLOWING DOGWOOD	*(Cornus florida Var Rubra)*
48	CHINESE FLOWERING QUINCE	*(Chaenomeles sinensis)*
49	RED MAPLE	*(Acer rubrum)*
50	TUPELO	*(Nyssa sylvatica)*
51	MOSS'S WHITE BIRCH	*(Betula pendula)*
52	PERSIAN WITCH-HAZEL	*(Parrotia persica)*
53	JUDAS TREE	*(Cercis siliquastrum)*
54	JAPANESE FLOWERING CHERRY	*(Prunus serrulata 'Okame')*
55	JAPANESE FLOWERING CHERRY	*(Prunus serrulata Deep Pink)*
56	JAPANESE FLOWERING CHERRY	*(Prunus serrulata 'Tibetica')*
57	MAIDENHAIR TREE	*(Ginkgo biloba)*
58	DOUBLE-ROSE CHERRY-PLUM	*(Prunus x Blireiana)*
59	JAPANESE FLOWERING CHERRY	*(Prunus serrulata 'Shirotae' (Mount Fuji))*
60	COMMON LILAC	*(Syringa vulgaris)*
61	'ELVINS' PRUNUS	*(Prunus 'Elvins')*
62	CHINESE CEDAR	*(Cedreca sinensis)*
63	BLACK LOCUST	*(Robinia pseudoacacia cult.)*
64	GOLDEN ELM	*(Ulmus procera 'Louis-Van Houtte')*
65	PIN OAK	*(Quercus palustris)*
66	SWAMP OR BALD CYPRESS	*(Taxodium distichum)*
67	JAPANESE ZELKOV A	*(Zelkova serrata)*
68	BLUE ATLAS CEDAR	*(Cedrus Atlantica 'Glauca')*
69	TULIP TREE	*(Liriodendron tullipifera)*
70	COPPER BEECH	*(Fagus sylvatica var. 'Purpurea')*
71	GHOST TREE	*(Acer negundo 'Variegatum')*
72	YUNNAN POPLAR	*(Populus yunnanensis)*
73	VARIEGATED ASH	*(Fraxinus species)*
74	RED HORSE-CHESNUT	*(Aesculus x Carnea)*
75	BLACK LOCUST	*(Robinia pseodoacacia 'Frisia')*
76	TRIDENT MAPLE	*(Acer buergeranum)*
77	GOLDEN POPLAR	*(Populus x serotina 'Aurea')*
78	COMMON HORSE-CHESNUT	*(Aesculus hippocastanum)*
79	ENGLISH ELM	*(Ulmus procera)*
80	GREAT WHITE FLOWERING CHERRY	*(Prunus serrulata 'Tai Haku')*
81	NORWAY MAPLE	*(Acer platanoides)*
82	RED OAK	*(Quercus borealis)*
83	CORK OAK	*(Quercus suber)*
84	STRZELECKI GUM	*(Eucalyptus strzeleckii)*
85	MOUNTAIN GREY GUM	*(Eucalyptus cypellocarpa)*
86	MESSMATE	*Eucalyptus obliqua*
87	MANNA GUM	*(Eucalyptus viminalis)*
88	ENGLISH BEECH	*(Fagus sylvatica)*

Map of Existing Significant Trees 1

X Trees to remain.
NB Zones 2&3 significant trees that need to be identified prior to commencing works



Significant trees in Zone 1 need to be Identified and marked