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### LIST of ACRONYMS

CaLP Act 1994 – Catchment and Land Protection Act 1994  
CMA – Catchment Management Authority  
CRC Weeds – Cooperative Research Centre Weeds  
DCC – Darebin City Council  
DPI – Department of Primary Industries  
DSE – Department of Sustainability and Environment  
EVC – Ecological Vegetation Class  
FFG - Flora and Fauna Guarantee Act 1988  
GIS – Geographic Information System  
GPS – Global Positioning System  
IWMS – Integrated Weed Management Strategy  
MAV – Municipal Association Victoria  
MCMC – Merri Creek Management Committee  
NWS – The National Weed Strategy  
PPWCMA – Port Phillip and Westernport Catchment Management Authority  
WAP - Port Phillip and Westernport Catchment Management Authority Weed Action Plan  
ROW's – Right of ways  
SLMO – Sustainable Land Management Officer  
WAP – Weed Action Plan  
WONS – Weeds of National Significance  
VPMF - Victorian Pest Management Framework

## 1 Introduction

The City of Darebin is an inner northern suburb of Melbourne (Figure 1). The area has a diversity of environmental and cultural values. Darebin City Council is dedicated to protecting and enhancing these values. Darebin's Biodiversity Baseline Report (Kern et al 2005) highlights weeds as the major threat to biodiversity values in the City of Darebin. Weed management is also a high priority for maintaining the amenity of the municipality. The response of Darebin City Council was to engage Greening Australia Victoria to prepare an Integrated Weed Management Strategy (IWMS).



Figure 1 The Location of the City of Darebin

The aim of the IWMS is to provide a strategic framework and advise on procedures for effective weed management by Darebin City Council, in conjunction with other land managers and private landowners to:

- manage weeds that threaten sites of biodiversity significance;
  - manage weeds that threaten parklands and sporting facilities and;
  - manage weeds that impact on the amenity of the municipality
- by:
- reducing the introduction of weeds into the municipality
  - minimising the spread and extent of existing weeds in the municipality

### 1.1 What is a Weed?

A weed is a plant that has, or has the potential to have, detrimental effects on environmental, economic or social values (CRC Weeds, 2000). Dependant upon the landscape context almost any plant can be or become a weed. Most weeds in Australia are exotic species. Some natives are also considered weeds and have increased their range and impact due to changes in the environment caused by human activity (eg agriculture, urban development etc).



Why are there weeds in Australia? It is considered that 65% of all weed species in Australia were introduced initially as garden plants. The remaining 35% were commercial plants which have become naturalised or plants that were accidentally introduced (CRC Weeds).

## **1.2 Darebin in the Regional Context**

The City of Darebin covers approximately 53 km<sup>2</sup> of land. It stretches from Melbourne's inner northern suburbs of Northcote and Fairfield out to Reservoir and Bundoora. Darebin is one of the largest and most diverse urban communities in Victoria. It is bounded to the south by the City of Yarra, to the east by Banyule, to the west by Moreland and the north by Whittlesea. The population of Darebin is over 128,000 people and the assets of Darebin City Council include over 600kms of roads, 2,000kms of drains, 300 buildings and over 45,000 street trees - all of which must be managed appropriately.

There is more than 900 hectares of open space within the City of Darebin, about half of which is managed by Darebin City Council. The open space is managed for a diverse range of values (City of Darebin, Open Space Strategy, 2000) including:

- Informal open space (eg. Dalglen St Reserve)
- Conservation parkland, (eg. Darebin and Merri Creek sections)
- Conservation bushland (eg. Cherry St Reserve)
- Links (eg. Merri and Darebin Creeks, Cheddar Rd)
- Formal Parkland (eg. Oldis Gardens)
- Sporting (eg. Hayes Park)
- Landscape Amenity areas (eg. Roadside planting areas)

The parks range in size from small, local parks up to major regional parklands such as All Nations Park in Northcote and Bundoora Park in the north of the municipality.

The Darebin and Merri Creek corridors form most of the east and west boundaries of the municipality. They have important environmental and social values, form key biodiversity corridors and provide a range of active and passive recreational opportunities for residents.

The diverse nature of the area and the highly visible creek corridors make weed management an important issue for the community and local businesses. Environmentally sensitive areas such as the Central Creek Grasslands, the Wildlife Reserve at LaTrobe University and the Leamington Street Wetlands require integrated weed management to protect their values.

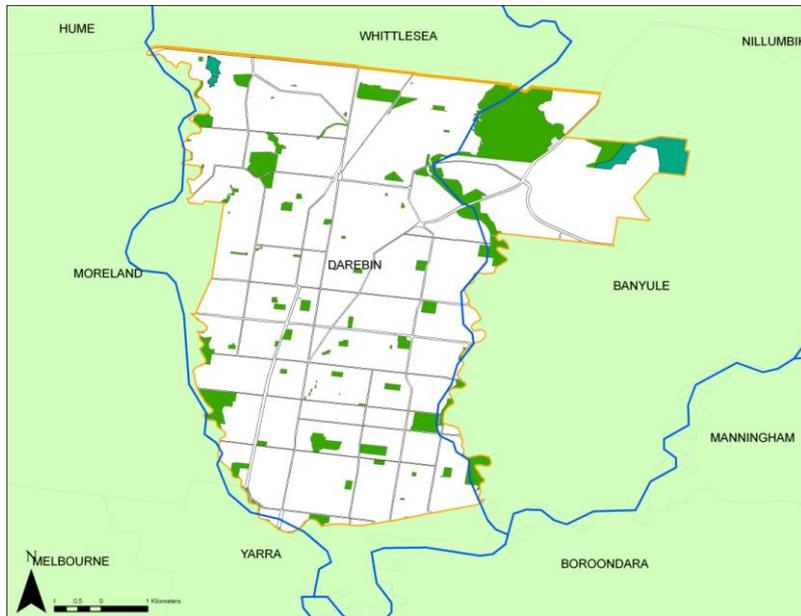


Figure 2 Open Space, Conservation Reserves and Parkland in the City of Darebin

### 1.3 Weeds in the City of Darebin

There are currently 28,000 species of weeds across Australia identified as having been brought to this country over the last 200 years. Of these approximately 2,500 have established themselves to the point of being naturalised within the Australian environment and many cause serious impacts upon economic, aesthetic and environmental values.

There are approximately 180 different weed species listed in the Management Plans of creek and bushland reserves in the City of Darebin including:

- 8 listed Weeds of National Significance
- 19 Regionally Controlled species<sup>a</sup>
- 1 Regionally Prohibited Species<sup>a</sup>
- 4 Restricted Species<sup>a</sup>

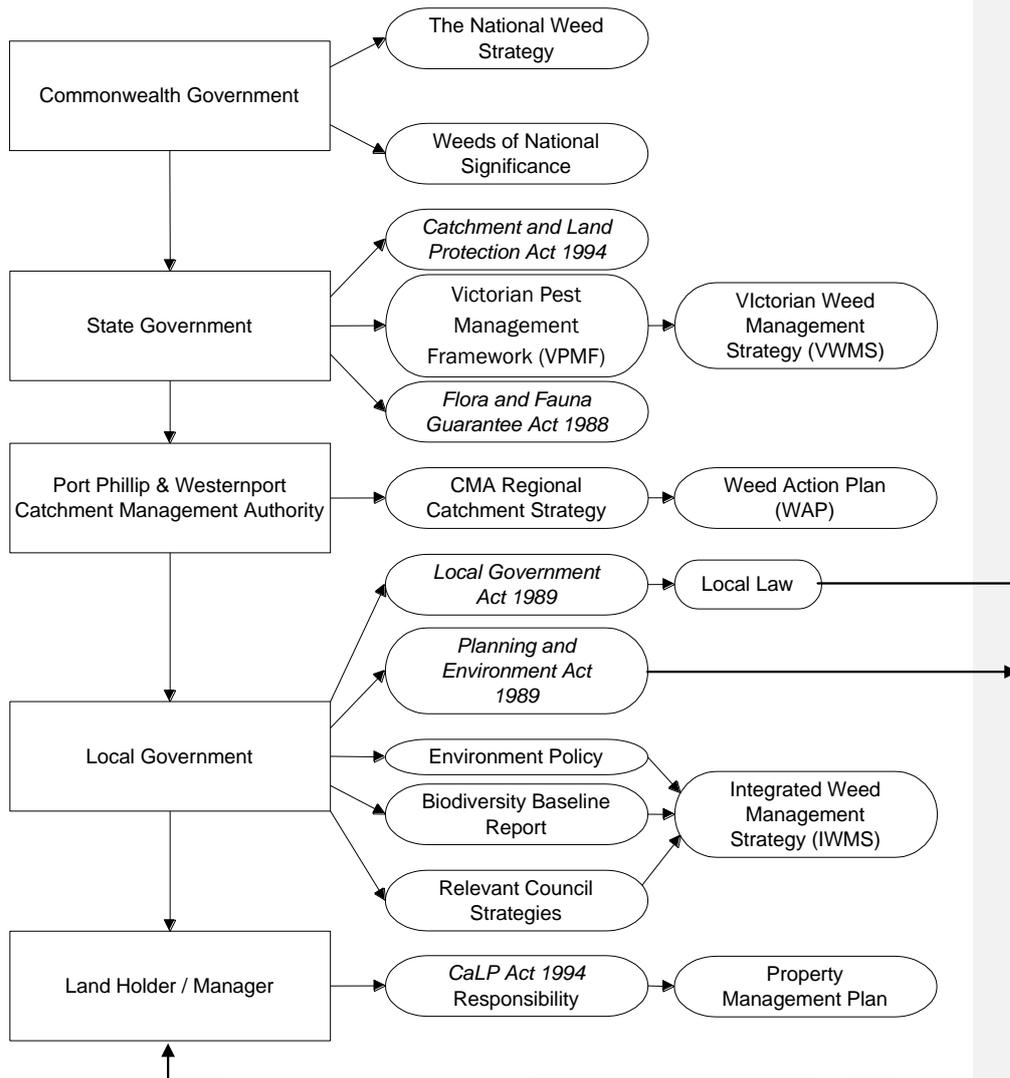
These 180 weed species have been recorded in environmental reserves through the management plans but other weeds are present within the City of Darebin that have not been recorded to date.

(<sup>a</sup> listed under the *Catchment and Land Protection (CaLP) Act 1994*)



## 2 Legislative Framework

There are a number of different laws and policies relating to weed management. Strategic Weed Management Planning is undertaken at a number of levels including: National, State, and Regional. The strategies at different levels of Government are linked to support a consistent and coordinated approach to weed management and provide a framework for DCC to develop and implement this weed strategy.



Weed Management Structure in Australia



## 2.1 The National Weeds Strategy

The National Weeds Strategy (NWS) was produced by the Commonwealth Government and was developed to “reduce the detrimental impact of weeds on the sustainability of Australia’s productive capacity and natural ecosystems” (NWS, 1999). It sets out a strategic approach to weed management problems of national significance.

The Strategy stresses the importance of weeds as factors in both land and water degradation in both developed and natural ecosystems. It recognizes that actions initiated to address these problems must be coordinated and integrated, both between the land managers responsible and across all ecosystems of the bioregions involved. It also emphasizes the commitment of all governments to address weeds of national significance in cooperation with other interested parties. The NWS is based on four key principles:

1. Weed management is an essential and integral part of the sustainable management of natural resources and the environment and requires an integrated, multidisciplinary approach.
2. Prevention and early intervention are the most cost effective techniques that can be deployed against weeds.
3. Successful weed management requires a coordinated national approach which involves all levels of government in establishing appropriate legislative, educational and coordination frameworks in partnership with industry, landholders and the community.
4. The primary responsibility for weed management rests with the landholders/land managers but collective action is necessary where the problem transcends the capacity of the landholder/land manager to address weeds adequately.

The NWS recognizes that Government, industry and community groups have important roles when weed management problems require broad-scale solutions, and identifies that Local Government has a role to:

- Assist with data collection and exchange
- Assist with the coordination of community weed management programs
- Act as a community advocate on weed issues
- Support the activities of local self-help groups to undertake weed management activities
- Develop and apply local weed management strategies
- Exercise statutory responsibilities to encourage responsible weed management
- Manage weed problems on their own land responsibly, in cooperation with other land owners.

## 2.2 Weeds of National Significance

A central component of the National Weeds Strategy was the identification of Weeds of National Significance and the resultant coordinated actions across all States and Territories. Over a two year period and under final endorsement by Ministerial Councils an assessment process was developed, candidate species were nominated and assessed and a ranking of species formulated. The method for determining the Weeds of National Significance comprises four major criteria:

- Invasiveness
- Impacts
- Potential for Spread
- Socioeconomic and Environmental Values.

The process of undertaking a national review of available data on weeds was immense with the need to verify and standardise information from a variety of sources. The resultant List of Weeds of National Significance is based on the most comprehensive data sets and



analysis available. Having been placed on this list, weed species are brought under national management for the purpose of restricting its spread and/or eradicating it from parts of Australia. A full List of Weeds of National Significance is set out in Appendix A – Table 1. The management of these weeds is not always backed up by state legislation, local laws and/or appropriate government action which can often mean that management is not a priority for landowners/land managers.

At the time of this report there are 8 Weeds of National Significance within the City of Darebin. There is an opportunity for Darebin City Council to play a role in implementing strategies and raising awareness of land owners/managers - especially for these weeds.

### 2.3 Victorian Pest Management Framework - Weed Management Strategy

The Victorian Pest Management Framework (VPMF) provides the comprehensive planning framework for pest management within Victoria. It provides the strategic direction and outlines the important strategic actions which need to be taken to adequately deal with pests at a State and Regional (Catchment Management Authority) level.

The Victorian Government identifies weeds as a serious threat to primary production and biodiversity in Victoria, and the Victorian Weed Management Strategy has been developed within the Victorian Pest Management Framework (VPMF) to deal with weed management issues in Victoria. The Strategy identifies that the management of weeds is principally the responsibility of each land and waterway manager and identifies the State Government's role primarily as providing the legislative and policy framework for land and waterway managers to work within.

Similar to the National Weeds Strategy, the Victorian Weed Management Strategy identifies a number of goals of the Strategy with objectives and strategic actions coming from them. The goals of the Weed Management Strategy are:

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

The Weed Management Strategy places a strong emphasis on the importance of establishing effective working partnerships between relevant land management agencies to ensure there is a coordinated and consistent approach to weed management issues across the state.

### 2.4 Catchment and Land Protection (CaLP) Act 1994

The principle legislation relating to weeds in Victoria is the *Catchment and Land Protection Act 1994* (CaLP Act). The CaLP Act provides the legislative framework for the management of land including the control of declared noxious weeds and pest animals. The Act is administered by the Department of Sustainability and Environment and enforced by the Department of Primary Industries. Under the CaLP Act, Victoria is divided into ten catchment regions and a Catchment Management Authority is established for each region. There are nine regions in rural Victoria and the Port Phillip and Westernport Region encompasses the more populated areas surrounding Melbourne.

Declared noxious weeds in Victoria are plants proclaimed under the CaLP Act because they cause environmental or economic harm, or have the potential to cause such harm. Weeds are declared noxious on either a State or Regional (Catchment Management Regions) level depending on their level of threat and current distribution. There are four categories of noxious weeds defined by the Act:



- **State Prohibited Weeds:** These weeds either do not occur in Victoria, but pose a significant threat if they establish, or are present, pose a serious threat and can reasonably be expected to be eradicated. If present, infestations are relatively small and are to be eradicated if possible from within Victoria or excluded from the State. At the time of writing Darebin has 1 State Prohibited Weed present i.e. Alligator Weed.
- **Regionally Prohibited Weeds:** These weeds are not widely distributed in a Region but are capable of spreading further, and it is reasonable to expect they can be eradicated from a Region. Land owners and managers are responsible for control of these weeds on their land. At the time of writing Darebin has 1 Regionally Prohibited Weed present i.e. Scotch Thistle.
- **Regionally Controlled Weeds:** These weeds are usually widespread in a Region, but causing enough impact that preventing their spread is important. To prevent their spread, continuing control measures are required. Land owners and managers have the responsibility to take all reasonable steps to control and prevent the spread and growth of these weeds. At the time of writing Darebin has 19 Regionally Controlled Weeds present.
- **Restricted Weeds:** These weeds present a serious threat to primary production, Crown land, the environment or community health in another State or Territory in Australia. They pose an unacceptable risk of spreading throughout Victoria or to other parts of Australia if they were to be sold or traded (CaLP Act). The control or management of these weeds is not enforceable. This category does prevent the sale of the weeds listed under this category. At the time of writing Darebin has 4 Restricted Weeds present.

The full list of declared weeds can be found on the DPI website and can be downloaded in pdf format.

## 2.5 Flora and Fauna Guarantee Act 1988

The goal of the *Flora and Fauna Guarantee Act 1988* (FFG 1988) is to conserve and manage all Victorian taxa so that they can survive. There are three different listings under the legislation: threatened species, threatened communities and threatening processes. The recommendations for listing pass through an Advisory Scientific Committee. The threatening processes are a list of actions and/or processes which have the capability to threaten the survival, abundance or evolutionary development of any taxon or community of flora or fauna in Victoria. There are three listed threatening processes specific to weed management in the FFG Act and they are:

1. the spread of "environmental weeds" into native vegetation
2. the spread of Blackberry and
3. the spread of Sweet Pittosporum outside its natural distribution

DSE are the responsible agent for this legislation. Currently there are no Action Statements for these Listed Threatening Processes. Action Statements are brief management plans which have been compiled to provide background information and possible mitigation or management measures. It is intended that Action Statements are to be reviewed and updated after three to five years. Under the Act, an Action Statement must be prepared by the Department of Sustainability and Environment for each item following its listing.

## 2.6 Port Philip and Westernport CMA- Weed Action Plan

Under the CaLP Act, the Port Philip and Westernport Catchment Management Authority (PPWCMA) is required to prepare a Weed Action Plan (WAP) for the Region. This plan provides the framework for the PPWCMA to lead and coordinate strategic planning and set priorities for integrated natural resource management across the region. Similar to the Victorian Pest Management Framework Weed Management Strategy, the WAP strives to enhance partnerships and cooperation between agencies and communities involved with weed management. The WAP is based on the following key principles for effective management of weeds:

- Land managers are expected to take responsibility for their own land and prevent weeds on their land invading other properties;



- Prevention and early intervention are the most cost-effective means of dealing with weed invasions;
- The effective management of weeds requires an integrated approach as part of the broader management of land and water resources;
- Effective weed control often depends on working partnerships across all levels of the community including government and industry; and
- The level of Government investment and involvement in weed control is determined by the economic, environmental and social risks posed by weeds and the costs and public benefits of addressing those risks.

The WAP identifies that in Victoria there are a number of established weed species and there is a constant threat of new species being introduced that could have substantial impacts at a regional and state level. For this reason and based on the principles for effective management of weeds, the WAP establishes three categories of weed species that warrant different levels of government investment and service in this region. The PPWCMA recognise that the species put forward as priorities in their WAP are different from the current declared noxious weeds list under the CaLP Act (e.g. Sweet Pittosporum is listed as a high priority established weed in the CMA but is not listed as a declared noxious weed. Refer to Table 4 – Full list of Weeds for the City of Darebin). Some species are listed as both declared noxious weeds and listed within the PPWCMA WAP (e.g. Scotch thistle, Serrated tussock and Bridal creeper). The PPWCMA views the lists as relevant and specific to the Region and the WAP states specific management goals for these categories.

- **New and emerging weeds** - New weeds are weeds that do not currently occur in the region but have the potential to be introduced and would have significant impacts on productive and/or natural systems. Emerging weeds are those assessed as threatening and have been found in the region but only in isolated instances or in small areas and have not become widely established. The goal is to have a zero tolerance to new and emerging weed species because it is acknowledged that preventing the introduction of new weeds and eradicating infestations of emerging weeds immediately is the most cost effective long-term weed management strategy. At the time of writing Darebin has 1 New and emerging weed present (i.e. Alligator Weed).
- **High priority established weeds** - These weeds are established in the region and in some cases are widespread. Eradication of these weeds is generally not feasible. The goal is to contain and reduce the infestations and impacts of these species through the adoption of best management practices by all land managers. At the time of writing Darebin has 6 High priority established weeds present - See Table 4).
- **Other established weeds** - These weeds are common and widespread within the region and it is generally acknowledged that eradication of these species is generally not feasible. The goal is to contain and reduce the impacts of these species through the adoption of best management practices by land managers. At the time of writing Darebin has 47 other established weeds present - See Table 4).

The WAP states that where appropriate Local Government is to develop and implement local laws to complement weed control programs for High Priority and Other established weeds.

### 2.7 Local Government Act 1989

The *Local Government Act 1989* gives councils the power to create local laws concerning weed control within their municipalities. These laws cannot duplicate or be inconsistent with existing legislation such as the CaLP Act 1994. Local councils can enact a local law to enforce the control of priority environmental weeds on private properties through this legislation. The City of Darebin currently has no local laws directly relating to the control of environmental weeds.



Local Government can also enforce the control of weeds or vegetation where it poses a fire hazard under the *Local Government Act 1989*. Section 11.1 of Darebin City Council's General Local Law No.1 2005 is about the control of weeds in direct relation to maintaining the condition of land so it's not detrimental to the visual amenity of the neighbourhood. Section 11.2 indicates that owners abutting unmade right of ways have a responsibility to maintain the area from litter and obstruction.

The Moorabool and Golden Plains Shire Councils have been funded by the Victorian Government to conduct a review of Local Laws in relation to weed control across the state. A draft local law has been developed and this was distributed through the Municipal Association of Victoria (MAV) to all Local Councils within Victoria in June 2006. The final document will allow Local Councils to develop an effective and enforceable local law that is specific to weed control. The Final Draft of this report is included as Appendix B.

### **2.8 Planning and Environment Act 1987**

Local Government Planning Schemes allow Councils to set out policies and requirements for the use, development and protection of land. Local Government can therefore influence weed control through its statutory planning responsibilities. Through the Planning Scheme, a local council can:

- Stipulate in landscape plans that no environmental weeds are planted.
- Make weed management compulsory as part of a planning permit.
- Inspect property as part of the permitting process
- Ensure all property owners/managers are actively managing the twenty priority weeds in Darebin (Appendix A, Table 2).

### **2.9 Legislative responsibility according to land type**

The responsibility of landowners to control weeds under the *Catchment and Land Protection Act 1994* differs according to the land type.

#### **Rail Reserves**

All rail reserves in Victoria are owned and managed by VicTrack. VicTrack is responsible for the control of Regionally Prohibited and Regionally Controlled weeds in railway reserves. DPI is responsible for the control of State Prohibited weeds in rail reserves.

#### **Private Land**

Landowners are responsible for the control of Regionally Prohibited and Regionally Controlled weeds on their land. They are responsible for taking steps to control and prevent spread and growth of Regionally Controlled weeds along roadside that adjoin their land. They are not responsible for the control of Regionally Prohibited weeds along roadsides as this is the responsibility of the State (depending on the class of the road: DPI, VicRoads or Municipality).

#### **Council Land**

Council is responsible for the control of Regionally Prohibited and Regionally Controlled weeds on all council managed/owned land. The State is responsible for the control of State Prohibited weeds in all public/council-owned land.

#### **Crown Land**

Responsibility for weed control on Crown land predominantly resides with the established Committees of Management for the reserve. DSE and DPI is responsible for the control of State Prohibited weeds on all Crown Land. Where reserves are managed by local councils as Committees of Management, they are responsible for the control of Regionally Prohibited and Regionally Controlled weeds on that Crown land.

#### **Waterways**



The Catchment and Land Protection Act defines land as including the soil, water, vegetation and fauna on the land. Melbourne Water is the statutory land manager/owner of the waterways in Port Phillip and is therefore responsible for the control of Regionally Prohibited and Regionally Controlled weeds along river banks and river beds. In the context of the City of Darebin that includes the Merri Creek, Darebin Creek, Edgar's Creek and Central Creek.

### **Roadsides**

Roadsides account for 7% of public owned land in Victoria (MAV 2003). It is therefore important to manage the occurrence of weeds along roads. The responsibility of roadside weed control is determined by the status of the road and the type of weed present.

- VicRoads (or the Council as its agent) are responsible for the removal and/or control of Regionally Controlled Noxious Weeds along main (declared) roads.
- DPI is responsible for the control of Regionally Prohibited weeds along main (declared) roads.
- The adjoining landowner is responsible for the control of Regionally Controlled and all other weeds.

It is important to note that the City of Darebin is an urban environment and these areas usually have the owner/resident manage the area in front of their property with regular mowing/trimming.

### **Legislation and Policy of Darebin City Council**

Provisions for weed management are incorporated into numerous Darebin City Council strategies and legislation:

- City of Darebin Environment Policy
  - No direct mention of weed management, but can be inferred from:
    - Aim for its own operations to be ecologically, socially and economically sustainable
- Environmental Management Strategy
  - Weed management is referred to in the section entitled: Biodiversity and Ecosystems:
    - Objective: Protect and increase areas of special value for natural heritage, habitat or for maintenance of ecological processes
    - Target: Control all noxious (and high priority environmental) weeds in open space by 2010
- Darebin Open Space Strategy (2000)
  - Visions and Objectives for Darebin's Open Space System section:
    - To eradicate or control environmental weeds and ensure species planted are appropriate to the site
  - Strategic Directions section entitled Conservation and Ecological Sustainability:
    - Species that are known environmental weeds should not be planted in Darebin's open space
    - Information should be made available to developers and residents to encourage the removal, and strongly discourage the planting of environmental weeds on private property, particularly in the vicinity of Conservation Bushland areas.
- Darebin City Council Green Streets Strategy
  - Identifies environmental weeds as invasive species that reduce the survival and regeneration potential of indigenous vegetation. No planting of potential environmental weeds should occur within any of the bushland/parkland zones or the waterways in Darebin
- Darebin Planning Scheme
  - 21.05-7: Natural Environment
    - Objective 1: Strategies: Work with the community to raise awareness of 'garden escapee' environmental weeds



- Objective 2: Strategies: Reduce the impact of environmental weeds by delivering educational programs and 'remove and replace' programs for residents
- Objective 3: Strategies: Reduce the amount of resources used in maintaining open spaces and landscapes, particularly water and herbicides. Eradicate, where possible, the incidence of weeds
- A condition of some planning permits and most multi-dwelling housing developments a Landscape Plan will be required: The use of noxious weeds in Darebin is not acceptable- see "Landscape guidelines for residential, commercial and industrial development within the City of Darebin"

### 3 Current Weed Management

Weed management in the City of Darebin is a complex management issue. Darebin City Council is one of many different agencies with responsibility to manage weeds. Other groups with management responsibility are VicRoads, DSE and Melbourne Water. The responsibility for the management of weeds falls over the range of land types and tenures in Darebin. These land types include:

- Council Owned and/or Managed Land
- Other Crown Land (Departments of Education, Sustainability and Environment, Human Services)
- Melbourne Water Land
- Rail Reserve (VicTrack Land)
- Private Land

#### 3.1 Council Owned and Managed Land

The current weed management in Darebin City Council is the responsibility of a number of different Departments depending upon the land use and context. Darebin City Council manages weeds in a variety of land types, including:

- Environmental reserves (conservation parklands and conservation bushland)
- Sports and Recreation Reserves
- Formal and informal parkland
- Roadways and street trees
- Right of Ways

These land types are managed for a range of values including recreation and public use, amenity, safety, asset management and conservation. The relevant Departments/Branches/Units across DCC that are involved in planning and management of these land types are:

- Open Space Planning have prepared the Open Space Strategy and the Green Streets strategy and are responsible for park and street tree planning
- Darebin Parks Open Space Unit manage Sports and Recreation Reserves, formal and informal parkland, some roadways,
- Darebin Parks Arboriculture unit manages trees in streets and parks
- Darebin Parks Bushland Management Unit manage environmental reserves
- Street Cleaning manage weeds in Right of Ways, some roadways
- Darebin City Council also co-manage some land with other organisations, and these include Bundoora Park, Darebin Parklands and Northcote Golf Course

Other branches and units across Council also have influence and impact on weed management in the City of Darebin. These include Engineering Design, Community Health and Safety and Urban Development.

The average annual expenditure on weed management is estimated to be over \$800,000 (in 2006 \$dollars) across Darebin City Council. This value includes salaries, equipment, contractors and consumables.



#### Information and Resource Gaps

- Develop a Weed Policy for Planners regarding priority weed species and new developments. Provide a training program for staff in the Urban Development Branch about the development of the policy and why it is important
- Identify all weed species in the City of Darebin - not just the ones in Environmental Reserves.
- Dedicated Weed Officer or SLMO employed to act as a liaison for all stakeholders (i.e. business groups, government agencies and the community)
- Developing new position descriptions for some jobs with more environmental awareness as a long term strategy to improve internal knowledge (ie street cleaner)
- Darebin City Council is responsible for management of Council owned land and land vested in Council in the waterway corridors
- Development and acceptance of an Herbicide Policy for Darebin City Council including training in herbicide and alternative weed control techniques for that policy
- Provide a leading role in driving and implementing the regional strategy for weed management
- Continue education process regarding the importance of weed control

#### 3.1.1 Environmental Reserves Management

There are 71 environmentally significant sites which have been identified within the City of Darebin (Practical Ecology, 2005). The environmental reserves within the City of Darebin contain remnants of ten different Ecological Vegetation Classes (EVCs) (Practical Ecology Kern, 2005). All of these EVCs are endangered communities and are threatened by a number of different weed species regularly found in the City of Darebin.

In Darebin's urban setting, environmental reserves are generally small or linear in nature and bounded by other land uses (residential, commercial, industrial). Lack of management of weeds and other environmental factors affecting weeds in these properties (stormwater, dumping, and disturbance) threatens the values of environmental reserves. Some significant sites may consist of a whole reserve (eg Greswell Hill) but many of these sites are small management areas within a larger open space context, for example there are 20 sites of significance identified along the Merri Creek and 22 along the Darebin Creek. Forty-one of the significant sites are considered to be under high threat from weeds (Kern 2005).

Environmentally significant land is managed not only by Darebin City Council but also by Committees of Management, Friends Groups and other agencies such as Melbourne Water and contractors of Victrack. This can create communication gaps if regular correspondence is not entered into between Council and the relevant land managers.

Council managed environmental reserves are managed by the Bushland Management Unit, but some work is contracted to the Merri Creek Management Committee (MCMC) and other contractors. This shared responsibility has created a challenging environment for integrated weed management. MCMC and private contractors are engaged to carry out site management including weed control at specific sites. This does not include formal surveying, mapping and monitoring weed occurrences.

Management Plans for some Environmental Reserves exist (e.g. Cherry Street Reserve, Bundoora Park and Central Creek Grassland). These include a list of weed species found on individual sites, their locations, density and recommendations for weed management. The other Environmental Reserves managed by the Bushland Management Team have had weed species presence/absence surveys completed. In total, 180 different weed species have been recorded within the Environmental Reserves of the City of Darebin.



Annual and monthly works plans have been developed and implemented for all the significant bushland sites indicating the weed species, the timing for works and in some cases an appropriate control technique (e.g. burning, spraying or hand removal). To date some of the high priority environmental weeds have been monitored and mapped (e.g. serrated tussock) in order to keep records of their distribution through the City of Darebin.

**Information and Resource Gaps**

- Wash down units for vehicles
- Development of management plans for each area of environmentally significant land
- Update plans for all environmental reserves – set actions including when weed management and/or monitoring should occur (most weeds are active during the spring but make a list of weeds that are not and monitor just those species at the appropriate time of year)
- Map all Priority Weed Species in the City of Darebin in Environmental Reserves
- Map areas of responsibility for the Bushland Management Unit
- Review herbicide use and develop Herbicide Policy
- Adopt Herbicide Policy

**3.1.2 Parks and Reserves Management**

This section focuses on the parks and reserves (excluding environmental reserves). These parks and reserves provide passive and active recreational opportunities and are found throughout the City of Darebin. They include formal gardens and sporting fields. The goals for Darebin City Council in managing these parks and reserves are to:

- provide safe and effective playing fields and surfaces
- maintain the visual aesthetic and amenity
- manage weeds

From the ongoing and long term works it has been noted that in the sporting grounds and formal public open space the most consistent weed issues are the broadleaf weeds. These weeds destroy the turf areas and reduce the aesthetics of the reserves. Instances of broadleaf weeds are reported to be increasing in the reserves and they have been noted to survive better with less water than the turf species.

Some of the parks and reserves have occurrences of declared noxious grasses such as Chilean Needle Grass and Serrated Tussock. Without weed identification training and proper procedures in place the staff mowing the reserves could be unknowingly spreading the seeds of Chilean Needle Grass and Serrated Tussock in their machinery. This disperses the declared noxious weeds around Council reserves and roads.

Current weed management of the parks and reserves involves inspections of the reserves which are carried out by staff. Residents and sporting groups may also contact council if they have concerns regarding weeds on ovals they use.

Darebin City Council has three tractors and ten ride-on mowers that cut the grass. Council keeps a record of which mowers have worked in which reserves. The mowing regime for these areas is determined by the status of the reserve (e.g. sporting open space, formal open space, informal open space, linkage open space or undeveloped open space).

**Table 1 – Mowing Regime**

Type of Reserve	Cuts per Year
Formal Open Space	18 cuts/visits
Undeveloped Open Space	16 cuts/visits
Sporting Oval	16 cuts/visits
Informal Open Space	16 cuts/visits
Linkage Open Space	14 cuts/visit



There is a broadleaf spraying program which involves selective herbicide application conducted twice per year or as required. The records kept are spray record sheets and these indicate the works that are completed. A follow-up inspection is usually carried out within one month to determine the effectiveness of the application. The actions taken are usually reactive and notified to the council. Many of the staff responsible for the management of parks and reserves have completed farm chemical user's course.

**Information and Resource Gaps – parks and reserves**

- Provide wash-down units for equipment
- Develop wash-down procedure with policy and guidelines for Staff and contractors
- Access to weed identification skills to facilitate regular information to SLMO and the GIS database as to which weeds are present
- Coordination of management for interface areas between Bushland Management Unit and Parks and Open Space Planning
- Ensure all staff have appropriate level of training in weed management
- Review herbicide use and develop Herbicide Policy
- Adopt Herbicide Policy
- Survey parks and reserves for environmental weeds, plan and implement a remove and replace program to install sustainable replacement plants

**3.1.3 Street Tree Management**

The City of Darebin has over 45,000 Street Trees across the municipality and in 1996 DCC developed a “Green Streets Policy” to be used as a guide in the development of the public streetscape. The Green Streets Policy indicated that no environmental weeds are to be planted within the environs of the creek or environmental significant reserves. The policy is still in use and is undergoing further review and development including an assessment about the potential weed species listed as possible street trees or plants. The Parks and Open Space Group are responsible for the policy development and direction of street trees within Darebin City Council. The policy is under review.

The “Green Streets Policy” identified a number of trees that have the potential to be weed species including Desert Ash (*Fraxinus angustifolia subsp angustifolia*). Desert Ash is a highly invasive species that is recognised as a significant threat to the environmental reserves (creeks and bushland). There are sterile/non invasive hybrids of the Ash species and other species such as Olives. Research into sterile/non fruiting street tree and planting options is an important part of the management process and is currently undertaken by Darebin City Council Open Space Planning Group.

Other factors relating to the planting of street trees and the avoidance of weed impacts are:

- the location of the trees
- tree health
- Community health and safety
- community perceptions
- heritage values

The location, environmental and social value of any tree can be considered prior to any recommendation for removal. For example a Weeping Willow (*Salix babylonica*) in a historic park within Darebin's central area should be considered for retention as the tree may pose minimal threat to sites of environmental significance. Darebin City Council has not conducted removal of healthy trees within the landscape but rather they are developing an opportunistic removal or replacement strategy. There is currently an opportunistic removal program for Desert Ash trees (*Fraxinus angustifolia subsp angustifolia*) within the City of



Darebin and no Desert Ash are being planted within the council boundary. There is also the potential for the staged removal of Agapanthus (and other plants) which have been widely planted along streetscapes including median strips and roundabouts largely because they are visually appealing plants and do not require a lot of maintenance. They can cause problems by expanding and growing over footpaths making them unsafe. The staged removal of them from the streetscapes along with certain street trees is currently being investigated for those reasons rather than the species being weeds. In certain areas the community have a cultural attachment to certain species that are or may become weeds in the environment. These plants include olives, prickly pear and loquat. Darebin City Council has set up community garden patches where olives are grown and harvested by the community. If the practice of harvesting ceases to occur then the plants should be removed because olives have the potential to spread via birds and animals - increasing the distance that they can disperse.

The following table is a list of tree species that are considered weeds/inappropriate for planting by the Open Space Planning and Management Group.

**Street Tree Weed List for Darebin's Weed Strategy**

Botanical Name	Common Name	Strategic Decision for not planting
<b>A. No planting/removal required</b>		
<i>Ligustrum undulatum</i>	Privet	Environmental Weed
<i>Ligustrum lucidum</i>		
<i>Coprosma repens</i>	Mirror bush	Environmental Weed
<i>Pittosporum undulatum</i>	Sweet pittosporum	Environmental Weed
<i>Salix babylonica</i>	Weeping willow	
<i>Crataegus monogyna</i>	Hawthorn	Sharp spikes unsuitable for streetscapes.
<i>Cotoneaster franchettii</i> or <i>glaucophyllus</i>	Cotoneaster	Environmental Weed
<i>Eriobotrya japonica</i>	loquat	Could be retained if resident guaranteed fruit harvest
<b>B. No new planting/current removal program in place</b>		
<i>Prunus cerasifera/ cerasifera 'nigra'</i>	Plum tree	Environmental Weed
<b>C. No new planting/removal program to be considered</b>		
<i>Fraxinus angustifolia</i> subsp. <i>Angustifolia</i>	Ash Tree	Serious Environmental Weed especially near waterways – Hybrid cultivars used as alternatives
<i>Nerium oleander</i>	Oleander	Environmental Weed
<b>D. no new planting/no removal program required</b>		
<i>Pheonix canneriensis</i>	Date Palm	Seasonal seed removal should be considered to limit seed dispersal. Transplanting could be advocated for design intent.
<i>Schinus molle</i>	Pepper Tree	Existing stands have historic significance
<i>Ulmus procera</i>	English Elm	Existing stands have historic significance
<i>Ulmus holandica</i>	Dutch Elm	Existing stands have historic significance
<i>Alnus jorullensis</i>	Evergreen Alder	Environmental Weed



<i>Hakea salicifolia</i>	Willow leaf Hakea	Environmental Weed
<i>Acacia baileyana</i>	Wattle	Environmental Weed
<i>Acer negundo</i>	Box elder	Environmental Weed

Note: All Trees listed should be considered for removal within 100m of an ESO and within all submitted planning applications to council.

It has been noted that the retention of environmental weeds in street plantings sends a conflicting message to the community about the importance of sustainable gardening. The council has made efforts to encourage alternative species to these weedy plants however the Genus of a plant does not automatically include all species or varieties of that Genus as weeds. Many new hybrids (e.g. Fraxinus species, non fruiting Olive) are non invasive. Making the information available to the public about the choices of species made by Darebin City Council may help change this perception.

Managing the street trees and open space gardens is the job of the Open Space Planning Branch, Darebin Parks Open Space Unit and Arboriculture Unit. Open Space Planning manage the planning and strategy of planting the trees across Darebin and are responsible for the choice of trees and plants in public open space and for deciding on removal and/or relocation of trees where appropriate. Open Space Planning also provide information to the Urban Development Branch regarding planning applications and proposed planting regimes for developments. This work consists of reviewing the lists of proposed plants and assessing the appropriate nature of the planting. The Arboriculture Unit is responsible for the day to day management of the trees and plants in parks, gardens and streetscapes for example:

- Tree removal
- Tree replacement
- Assessment of tree health
- Assessment of public safety

#### Information and Resource Gaps

- The development of a street tree database set up that will provide information on all street trees in DCC including heritage values, health and works schedule.
- Strategic replacement of environmental weeds planted in the streets with appropriate replacements
- Improve weed knowledge within council staff
- Education about the nature of certain tree species that may be perceived as weeds
- Reliance of Urban Development on Open Space Planning regarding plants used in planning developments
- Understorey plants can be removed and replaced using native alternatives such as *Dianella* sp.

### 3.1.4 Made Right of Ways Management

The Street Cleansing Unit and Darebin Parks Open Space Unit manage weed control in made Right of Ways and control weeds along the road edges, gutters and drains. Successful weed management in the streets and made right of ways is for:

- people to be able to safely drive without visual impediment
- weed species not to impact upon the roads and drains in the City of Darebin
- managing the visual amenity for neighbouring properties
- managing health and safety risks

Private or Unmade Right of Ways are privately managed unless the area becomes a fire hazard. If this happens Council will clean the area and bill the owner.



Currently there are no records of which weed species are being managed. There is no knowledge about the presence or frequency of New and Emerging, High Priority or Established Weeds within the City of Darebin from the Street Sweeping Group. The Street Cleansing Unit currently uses non-residual herbicide to manage the weeds in the Right of Ways and along the road verges because it breaks down and the proximity of Right of Ways to the stormwater drains.

Records are kept about whether the weeds are being managed efficiently and effectively. The actions taken by this group are reactive and measured by the number of work requests per month by residents.

**Information and Resource Gaps**

- There needs to be an herbicide policy for Darebin City Council that is accepted by all working groups.
- It is also recommended that there be a change in the position descriptions/training of staff to increase the environmental knowledge of the employees.
- The aging workforce for this group also means that important knowledge about the street environment might be lost as the current employees retire.
- The ability for staff to record where weed control is occurring along the Right of Ways would be valuable for the management strategy.
- Review herbicide use and develop Herbicide Policy
- Adopt Herbicide Policy

**3.2 Land Managed by Other Agencies**

Weed management is also an issue on land managed by other groups within the City of Darebin.

**3.2.1 Other Crown Land (Departments of Education, Sustainability and Environment, Human Services)**

The Crown Land within the City of Darebin includes conservation areas and asset property including schools. The government departments have the responsibility to manage the land in regard to all noxious weeds. At this time there is a lack of weed management on some types of government owned land and this is considered a big threat to overall weed management within Darebin City Council. There is some land that receives low level works/maintenance that is Department of Sustainability and Environment owned for which no management agreements exist (e.g. Merri Creek west of High St, Northcote). The Department of Education is responsible for existing schools and some undeveloped property across the state. In the City of Darebin each school in the region should have maintenance staff/contractors with a weed management plan prepared and implemented. The understanding of weed management may vary but regarding legislated weeds (CaLP Act) there is a consistent policy of removal and control. The information about the Darebin High priority/environmental weeds could be introduced into the schools.

**Information and Resource Gaps**

- Limited communication between Darebin City Council and appropriate representatives of government agencies is a threat to the appropriate management of the Crown Land.
- Formalise management agreements with State Government Agencies to manage land and include as part of that agreement appropriate management resources
- Communicate with other agencies to incorporate agreements regarding land management and weed control.
- Introduce information about the 20 priority weeds to schools



### **3.2.2 Melbourne Water**

Melbourne Water is responsible for management of waterway bed and banks – plus land they own in the waterway corridors. Darebin City Council (Parks - Bushland Management Team) manages land owned by Melbourne Water. Melbourne Water is responsible for maintaining the waterways as per their statutory brief. Some Melbourne Water owned land needs more appropriate management regimes (i.e. planned recurrent weed control) and there has been negotiation between Darebin City Council and Melbourne Water regarding the appropriate level of management and resources. Liaison with Melbourne Water to coordinate weed removal and management will be a key aspect and a key outcome of the IWMS.



**Information and Resource Gaps**

- Limited communication between Darebin City Council and appropriate representatives of Melbourne Water
- Land perceived to be owned and managed by Darebin City Council by residents
- Weed control does not occur in some Melbourne Water owned properties

### 3.2.3 Rail Reserve (VicTrack Land)

Darebin City Council has conducted low-level weed management in the rail reserves up until 2003 when this stopped. Darebin City Council may be able to negotiate agreement from VicTrack (Connex) that appropriate management and weed control on the VicTrack land is planned and occurring. The land is mostly exotic vegetation but there are at least two areas of native vegetation within the reserves. Lack of weed management and the potential loss of native vegetation within rail reserves are threats to Darebin City Council weed management. The other issue that the railway brings is the potential spread of weed seeds by the trains.

**Information and Resource Gaps**

- Limited communication between Darebin City Council and appropriate representatives of VicTrack
- Agreement with VicTrack for appropriate level of weed management

### 3.2.4 Private Land

Weeds on private land are the responsibility of the owner or the land manager. There are over 128,000 residents within the City of Darebin as well as large number of businesses. As with any population some residents and business managers are conscious of the impacts that weed species have upon the environment but some are not so well informed or conscious of the weed legislation. The current Local Government Act 1989 allows Darebin City Council to enforce weed control in a property that may be considered a fire risk. The Department of Primary Industries would be the responsible body for enforcing management of listed weeds from private property at present but this does not occur in the urban setting. There is need for resources and education about the control of listed weeds on private land in the City of Darebin.

**Information and Resource Gaps**

- There is no ability for Council to enforce weed control of environmental weeds under the existing Local Law so there is the need to revise the Local Law under the Local Government Act to facilitate weed management, enforcement and compliance.
- The Department of Primary Industries do not carry our enforcement regarding the listed weeds within the City of Darebin on private property
- Mainstream education and information program (not just in the environmental newsletter) is recommended to inform residents about weed management in the City of Darebin
- Community awareness through the development of community weed education programs (e.g. "What does your garden grow" program – CRC Weed Management)
- Resources for the monitoring of listed weeds on private property

## 3.3 Weed Mapping

Mapping is a highly valuable tool in weed management. Properly used and maintained weed mapping information can be an invaluable aid to data collection, developing the weed management strategies required, identifying works and actions required, setting



priorities, observing trends and monitoring effectiveness of control. There are many councils and government agencies that have been utilising GIS for many years now to manage not only property, but also physical assets and environmental values. A GIS can be a highly valuable source of information.

The weed data is stored in unlinked Microsoft excel tables and on MapInfo data tables rather than as a GIS Layer. The mapping of individual weedy locations and individual weed species has occurred in priority environmental reserves such as Cherry Street Reserve. It has not occurred throughout many of the Environmental Reserves or in the Parks and Open Space. It is a time consuming, often costly and difficult task to map weed infestation sites however the information from such an endeavour would provide DCC with a more complete overview of weeds than what currently exists.

The Geographic Information System (GIS) used by Darebin City Council is MapInfo 8.0 and is one of the two major GIS packages available commercially. The GIS of Darebin City Council is geared to provide information about rates, property boundaries and planning schemes. The Bushland Management Team has mapped the areas of high biodiversity significance and there is also some individual weed location data for areas such as Cherry Street Reserve. Darebin Creek has had some threat mapping carried out along the northern area regarding weed threats and rubbish dumping risks. Prior to this report there has been an assessment of information technology needs of the Bushland Management Team.

#### Information and Resource Gaps

- The areas of native vegetation need to be mapped separately if they do not include the whole property.
- The implementation of a Weed Mapping System and the allocation of adequate resources to have the data updated would be an effective management tool
- The information on weeds needs to be collected in a consistent and repeatable manner. If the data is not collected in a consistent manner, if it is not upgraded after works or does not contain information in a useable format then the system can be considered useless for anything. This is certainly true for weed management and control. Collecting information for the sake of collecting something is a serious problem and Darebin City Council need to consider carefully what information they need. Why do they need the data and what will it be used for.
- Darebin City Council need to undertake a full audit and mapping exercise of the land that they are responsible for managing as historically Darebin City Council has undertaken weed management on property that it does not own.
- There is an improvement needed in the storage of the data. A good database design can make the system more effective and efficient. The design of the work plans can be developed to be compatible with the structure of the database.
- Training for data entry and map production for relevant staff members once data systems have been developed will be very valuable to ensure use of the GIS/asset management system.
- There is very little information in the system about the coverage of environmentally significant land outside of the dedicated reserves. There are patches of native grassland that Darebin City Council are obligated to make reasonable attempts to protect (as the responsible planning authority) which do not have their location and extent mapped.
- The Parks/Open Space Planning teams need to map the locations of all inappropriate tree species and develop and implement the tree removal and replacement program. If this is carried out with updates occurring to the data then in a few years time they will have a comprehensive inventory of the trees across the City of Darebin.
- To make weed mapping effective for all work units involved with weed



management within Darebin City Council there is a need for staff to have access to the weed map data layers - to access the information that they need and to be able to input and update the information as required.

- Limited Mapping of remnant vegetation along water ways

## 4 Integrated Weed Management System

The Integrated Weed Management System (IWMS) will provide a strategic approach for effective management by Darebin City Council of the weeds found within the council boundary. The management objectives of the IWMS are:

- To manage weeds that occur in environmental reserves and sites of biodiversity significance
- To manage weeds that threaten parkland
- To manage weeds that affect the amenity of the City of Darebin
- To manage weeds that affect the health and safety of Darebin residents

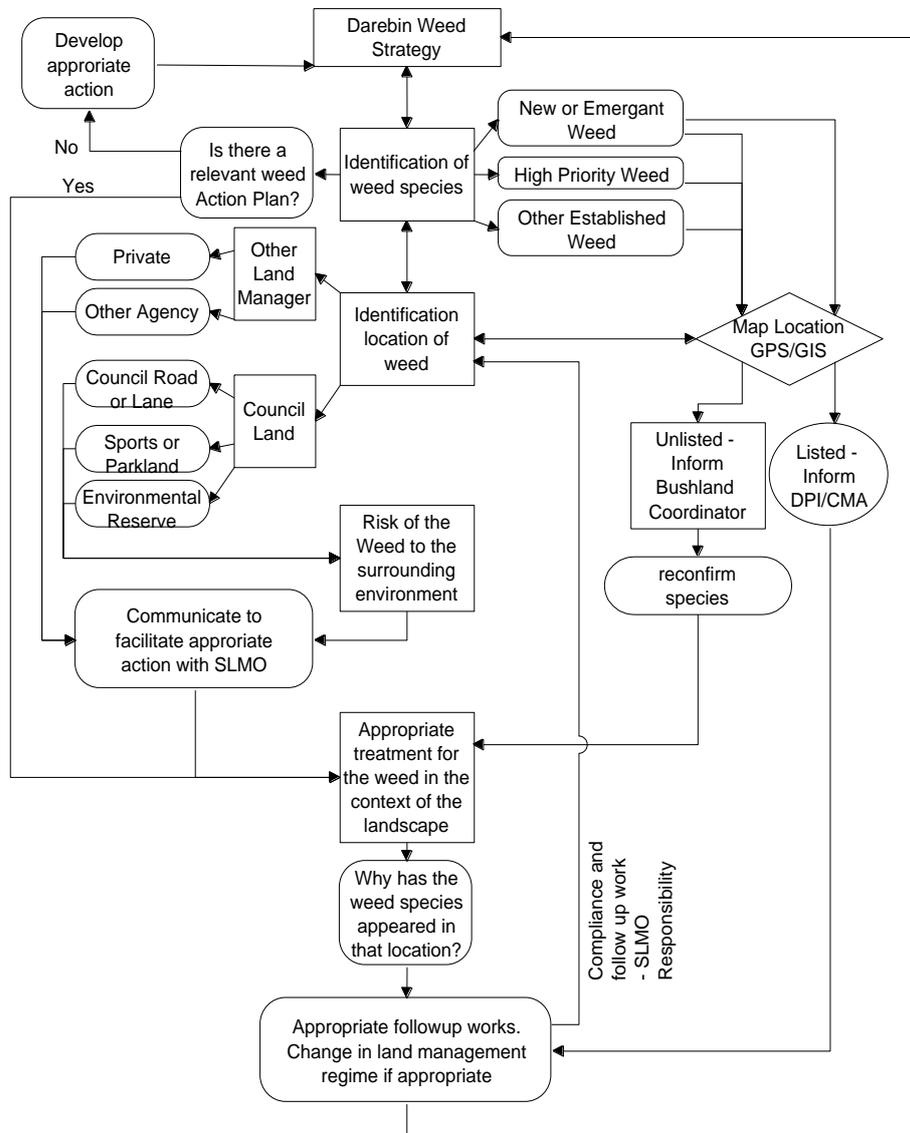
There are also recommendations for the development of weed management processes for private property and land managed by government agencies, as well as advice on the best practice methods for Darebin City Council including:

- Management of the weeds present on different land types/ tenures
- A process for the approval of planning processes involving applications with weed species
- Mapping Protocols

The outcomes of the IWMS will be to minimise the introduction of new and emerging weeds and the spread and occurrence of existing weeds in the City of Darebin within the above mentioned land contexts. To accomplish this task the resources for weed management Darebin City Council has available include:

- Existing Staff
- Contractors
- Community groups
- Individual community members who have an interest in the environment
- DPI
- DSE
- DHS
- VicTrack

A Sustainable Land Management Officer would be a critical resource for Darebin City Council to implement this Strategy. This role would enable a single point of contact for all staff, residents and agencies regarding weed management issues. The position could be responsible for public and staff education regarding weeds, the collation of weed information from Weed Spotters and as an internal resource for Darebin City Council Staff. This type of role has proven effective in other local governments in managing weed issues (Hume, Whittlesea, Banyule, Nillumbik amongst others).



**Overview of Darebin Integrated Weed Strategy Process**

**4.1 Weed Strategy Process**

To achieve good weed management a process has been developed for Darebin City Council to utilise. The process has been developed to identify the species, the location, the responsible agent, management and follow up monitoring.

**Identification of Weeds Species**

The identification of the weed is very important as it then leads to the type of category the weed will fall into and the appropriate level of response by Darebin City Council. Weed species within the council will either fall into the categories of:

- New weed within the City of Darebin
- New weed within in a reserve



- Not new weed species

Darebin City Council has classified the weed species using the PPWCMA WAP framework:

- New and Emerging
- High Priority Weeds
- Other Established Weeds

A list of twenty species have been classified as High Priority Weeds within the City of Darebin (see Appendix A - Table 2). Fact sheets have been developed that provide detailed technical information about them for council and for local residents (Appendix C Figures 1-20).

To aid in weed identification the management plans and works plans for the environmental reserves in the City of Darebin contain the information about the weed species in each reserve.

If any of the 25 weed species listed as State Prohibited are found within the City of Darebin they should be reported to DPI immediately regardless of location. DPI will then respond to treat that weed.

It is not practical for the Street Sweeping Unit to identify the weeds that they treat but there needs to be some regular survey of what species they are treating. The reasons for this are to:

- Make sure that there are no serious listed weeds in the Made Right of Ways and along the streets
- Make sure that the herbicide (or other treatments) used are appropriate.

#### Identification of Location and Land Owner/Manager

There are three different options for the type of land where weeds are growing:

- Council Owned/Managed Land which fall into the divisions of:
  - Streets and Made Right of Ways
  - Parks and Reserves
  - Native vegetation Reserves
- Private Owned Land
- Land Owned/Managed by other agencies

Darebin City Council need to identify in which of these land types the weed problem is occurring and respond in an appropriate manner. The land managed by Council will have appropriate responses for the weed - based upon the Open Space Strategy land classification (i.e. formal parkland, informal, Conservation Bushland etc). It is not always appropriate to treat a weed in the same way if it is in different Open Space types (e.g. in a bushland setting compared with along an urban road). The bushland reserves will have management plans that will indicate appropriate ways of treating weeds. This weed management may be different to treating the same weed on urban roads.

If the land is owned and/or managed by an agency then it is the role of the Sustainable Land Management Officer (SLMO) to facilitate the response by that agency. Communication should be maintained by the SLMO on a regular basis and the appropriate contacts for the following agencies should be communicated with on a regular basis to inform and facilitate integrated weed management in the City of Darebin:

- Melbourne Water
- Connex/VicTrack
- SPI AusNet
- DHS
- DSE/DPI



On private land (which is the largest percentage of land within the City of Darebin) the property owners have the obligation under the CaLP Act 1994 to control and prevent the spread of noxious weeds on their property. In order to promote effective weed management Darebin City Council is encouraged to revise its local law under the *Local Government Act 1989* and provide a system of enforcement/compliance for land owners/managers regarding weed management.

Weed locations should be recorded and mapped in the GIS using either GPS or a mobile mapping system. The current technology is good enough to provide data collection within 5m of the actual location. It is also important that a GIS database is updated regularly when weed infestations are found, controlled or removed.

#### **Risk Analysis of Species in the Location**

Weeds have the potential to spread not just through the vectors of wind and water but also via human interactions in the environment such as the moving of soil, machinery and animals. Once a weed species and location has been identified the risk of that weed to the environment needs to be assessed. To ascertain the risk the following factors are considered important:

- Legislation covering that weed
- Seed and propagule dispersal method (wind, water etc)
- Environmental requirements (rainfall, soil etc)
- Extent of infestation
- Proximity to nearby biodiversity site(s)
- Size of nearby biodiversity site(s)

#### **Appropriate Weed Treatment**

To effectively manage the weed species present on council managed land the management needs to be regularly monitored, reviewed and possibly revised. It may be that mowing is occurring too late in the year or that there is no replacement of plants once weeds have been controlled.

It is important for reviews of the weed management to occur but there must be an appropriate timeframe for review and change (i.e. there are some weeds which can take many years of continuous treatment to control and manage e.g. Chilean Needle Grass has a seed viability of approximately 5 years). The management and treatment strategy needs to include follow-up monitoring including weed mapping (possibly using GIS/computer technology) to ensure the success of the management carried out.

On private land and land managed by other agencies it is recommended that the Sustainable Land Management Officer is the primary point of contact when negotiating weed management options.

An effective strategy for Darebin City Council is to have in place some form of incentive scheme to encourage private weed management. In conjunction with a revised local law an effective weed control incentive scheme can be developed (e.g. Whittlesea, Nillumbik, Hume etc). The implementation of a Local Law regarding environmental weeds would provide an effective framework and process to address the recalcitrant and reluctant property owners and managers. Weed management incentive schemes complement the Local Laws regarding weed management in other cities. The incentive schemes provide a financial incentive to property owners to comply with the Local Laws and carry out recurrent integrated weed management at strategic times during each and every year.

#### **Weed Mapping**

The ability to map the location of weed species within the City of Darebin is a very important tool for managers. Survey and recording the occurrence and distribution of weed species can help set management goals and outcomes. There are many ways that weed



mapping can occur and it is important that the information collected is both relevant and usable by Darebin City Council. The goal is effective Weed Mapping and Data Management and to set up an effective GIS and data management system the following information should be understood:

- What is the problem?
- What information is needed?
- How should the information be collected?
- How often should the information be collected?
- How should the information be stored?
- Data detail and scale Vs Cost of Collection

The GIS weed mapping issue for Darebin City Council is primarily about having a process and system (hardware and software) to record and monitor the location of the weed species. This applies whether the weeds are in the urban, parkland or environmental reserves within City of Darebin. This information needs to be linked to work plans, implementation and recording of actions, revision and implementation of the work plans.

#### Method for GIS Data Collection

- The location of identified weeds will be recorded with the aid of a Global Positioning System (GPS) and appropriate GIS hardware and software for input into the GIS.
- If it is a weed location reported by community members then the details of the record can be taken by the customer service staff, forwarded to Parks staff and the information verified by Parks staff.
- Information received (from the Weeds Spotters Network and/or council staff) must be entered into the weed mapping system. There needs to be a system developed that will flag new data and indicate the land use context so that the appropriate response follows.
- Mobile mapping systems allow for information to be collected while in the field on preset up tables.
- Staff must use the same methodology to achieve comparable results and outcomes
- Once weed control work is carried out follow up mapping should occur to monitor effectiveness of treatment
- When collecting information it is important to be able to update and review the information.

Refer to "Guidelines to Mapping the Distribution of Weeds in Remnant Bushland – Kate Blood June 1999" (Appendix D).

## 5 Best Practice Weed Management

To implement the weed strategy Darebin City Council need to have a number of strategic processes in place. These include:

- Ability to identify and react to New Weeds within the City of Darebin
- Best Practice Land Management for Council Owned/Managed Land
- Appropriate Weed Control techniques
- Mapping and data storage

Darebin City Council is responsible for the removal and/or control of all listed Regionally Controlled weeds on Council owned and managed land. Darebin City Council also has an obligation to report all State Prohibited and Regionally Prohibited weeds that it finds present within the municipality to the Department of Primary Industries.

### 5.1 Identification Process for New Weeds

Weeds, like all plants, follow a pattern of population growth that involves arrival, establishment, colonisation and naturalisation (Macedon Ranges Weed Strategy: 2004). Preventing weeds passing through this cycle will reduce the development of new weed problems. The ideal management for new weeds is to prevent them from arriving in an area in the first place. This however is not always possible as weed seeds and propagules



may arrive at a site through a variety of means (wind, water and transported in the gut of animals and voided). The challenge then becomes how best to respond to and manage these new weeds to prevent them from creating larger weed problems. The failure by land managers to notice new weeds when infestations are small and/or take action when weeds first arrive is a key reason why new weeds become large problems. About ten new plants naturalise in Australia each year because of a failure to control these plants when they are at the establishment phase (Weed Proofing Australia: WWF).

The identification of new weeds within the City of Darebin is of primary importance as it is economically beneficial to identify and manage weed infestations in their early stage rather than after the species has established in the local environment. The State Government has estimated that investment in the early detection and intervention in weed species management over the longer term can directly save up to \$17 dollars for every \$1 invested over a 30 year program. That includes education, control and enforcement in an effectively and consistently developed strategy.

To tackle new regional weeds the PPWCMA WAP highlights 27 weed species as New and Emerging Weeds across the Port Philip Region. There is currently only one of the species on the list found within the city of Darebin and that is Alligator Weed (*Alternanthera philoxeroides*). It is currently found along Merri, Edgars and Darebin Creeks and is managed by DPI twice each year. The other 26 weeds have been included in the Darebin High Risk Weeds and should be monitored for regularly (Appendix A, Table 3).

The CMA listing of New and Emerging Weeds is made up of weeds that are considered to be significant threats to biodiversity, primary production, social and environmental health. The goal is for Darebin City Council to maintain an environment free of further establishment of these weeds by:

- Appropriate weed monitoring of all Darebin environs (Bushland, Road verges and informal Gardens can be prime locations for such infestations to develop)
- Weed Identification Skills and knowledge of the CMA list by appropriate Darebin City Council staff
- Weed Hygiene measures including soil movement and vehicle wash down procedures
- Having a good awareness of which of these weeds may be present in adjacent councils - especially near the boundaries
- Continued monitoring of Alligator Weed (*Alternanthera philoxeroides*) along the Creeks

New weed species in the City of Darebin fall into three major categories:

- the introduction of New and Emerging Weeds listed under the CMA WAP
- weed species which occur in neighbouring municipalities becoming established in Darebin
- a species that is new to Victoria.

In line with the WAP, DPI will provide a Rapid Response Plan, on ground assistance, community education, enforcement/incentives, research and information about control techniques for these listed weeds.

The Department of Primary Industries has developed a Weed Alert Rapid Response program which aims to prevent new weeds establishing in Victoria through increased awareness, surveillance, collection, identification and a rapid response to potential, new and emerging weeds. This program identifies that the community has an important role to play in the detection of new and establishing weed infestations and a key aspect of this program is to increase community awareness and involvement in weed issues. It is important for Darebin City Council to involve the community with the identification of new weed incursions as this is a cost effective approach that will help identify priority sites for



management. Darebin City Council could adopt this program because it allows for the early detection of new weed species and new infestations through the Weed Spotter Network.

Weeds which occur in neighbouring municipalities are possibly the biggest immediate threat to the land in the City of Darebin. This is because the geographic proximity increases the chance of seed spread through wind, water, human or animal movement. As an example, St John's Wort (*Hypericum perforatum*) is a Regionally Controlled (DPI) and High Priority (CMA) weed species which is found in an adjacent municipality but has not been identified within City of Darebin. Cooperative management between Darebin City Council and other agencies/councils is important for the effective management and control of weeds. The role of a SLMO would be to facilitate the existing relationships and to foster new relationships with the stakeholders. The position would provide a point for weed information and communication with internal and external groups.

### 5.1.1 Process for Identification of New Weeds in Darebin

This system has been developed for Darebin City Council and it will allow for the early detection, the reporting of new weed infestations and will ensure a rapid response to eradicate the weed problems. The benefits of this will include:

- Prevention of larger infestations of the new weed
- Reduce costs involved in the ongoing weed management of that species
- Increase the chance of local eradication of the weed, as opposed to "controlling" a weed problem
- Promote community engagement in weed management
- Utilise external resources such as regional, state and federal government grants and expertise with weed management

In order to achieve the outcomes of early detection and intervention:

- Darebin City Council staff and local community groups to utilise the list of high threat weed species that are not currently in Darebin as an initial Weed Alert List. This list includes weed species from the PPWCMA WAP and from weed species listed in surrounding localities that have a high potential for dispersal and a high threat to the land (Appendix A, Table 3).
- Implement the Weed Alert Rapid Response program for the City of Darebin including the development of a Weed Spotters Program for community groups and a reporting system for community
- Improve weed identification skills of the appropriate staff within Darebin City Council and train them to recognise the species on the Weed Alert List and to monitor during work actions across all land tenures.
- SLMO to monitor incoming information to obtain an inclusive picture of weed management, success and gaps within the City of Darebin.
- Make sure that adequate resources are available for responding to new weed threats within the Council Budget
- Review list of weed threats when strategy is reviewed
- SLMO needs to develop communication with adjacent Councils and share information effectively about the extent and locations of high threat weeds not found in the City of Darebin

If a potential new species is found the recommended procedure for the reporting of new weeds is:

1. Record location of the suspect weed either by GPS or by description so that it can be found again to be verified.
2. Ensure the correct identification of the plant as a new weed on the City of Darebin Alert List. For weeds difficult to identify utilise DPI or Melbourne Herbarium to identify correctly.
3. If possible identify how the weed got to the site and identify any distribution patterns, e.g. along the side of a trail, drainage lines, garden refuse behind houses.



4. Gather relevant information relating to the size of the infestations, number of plants, attempt to determine if plants are of varying age in the population- therefore indicating recruitment is occurring and other relevant information
5. Contact the appropriate contact person depending on the type of weed:
  - State Prohibited - DPI
  - New weed other than State Prohibited – DPI & Darebin City Council SLMO

In addition to the process Darebin City Council should make information about the new and emerging weeds, high priority weeds and important local weed species readily accessible to the public via the Council website in a similar way that the Wellington Shire Council has a number of informative web pages dedicated to the Weed Alert Rapid Response program. A good web page should outline the program, provide information on how to become involved as a weed spotter, provide images of the priority weeds to be on the lookout for and provide links to organisations in the weed management field so that interested people can access more information easily. Further information about Weed Spotters Network has been included in Appendix D.

### *5.2 Regional Strategy for Weed Management*

A recommendation of this report is for Darebin City Council to initiate and schedule regular discussions with neighbouring Councils and management groups to implement regional control of priority weed species. Weed management does not end at council boundaries but should be considered as a regional issue as mentioned in the PPWCMA WAP. This is illustrated through the weed movement down the Darebin and Merri Creeks. The City of Darebin is the southern section of the Darebin and Merri Creeks and their tributaries and has been affected by the influx of weed species from further up stream.

It is also important to note that 142 (79%) of the weeds listed within Darebin environmental reserves also occur in the City of Banyule (Practical Ecology, 2006) and many of the high threat weeds such as Chilean Needle Grass, Serrated Tussock and Gorse are significant threats to land in the neighbouring Cities of Whittlesea, Moreland and Hume making a regional focus not only desirable but also more cost effective. A regional strategy would focus on communication, strategic works planning and coordination targeting specific weeds.

### *5.3 Control Methods*

There are many different controls that are available to manage weeds. The integration of a range of control techniques (chemical and non-chemical) will provide the best long-term control of weeds. This will require long-term planning, knowledge of the weed's biology and life cycle and the selection and use of appropriate weed control methods.

Herbicide is the major method of weed control used by Darebin City Council because it is the most effective weed control method in most situations. Members of the community have raised concerns around the environmental and health impacts of herbicide use. Non-chemical alternatives are discussed below. Alternatives to herbicide for weed control have not reached a stage where they can be used as the primary replacement for herbicide use. They can however be integrated into some management practices to improve the effectiveness of and reduce herbicide use.

Darebin City Council adopted a Weed Management and Herbicide policy in 1999. The policy had the aim to:

- enhance the environment
- fit with best practice weed management
- provide optimal safety standards
- reduce Darebin City Council's dependence upon chemicals as the primary weed control method.



The Weed Management and Herbicide policy (1999) does not provide a process for assessing potential and/or new herbicides prior to their purchase and use. An effective process needs to be developed so that weed management practices remain best practice. For example, Darebin City Council uses the residual herbicides Banvel and Dicamba to control broadleaf weeds but there are a number of other residual herbicides available that require less frequent applications and provide pre-emergent control (eg simazine).

### Non Chemical Weed Control Methods

- **Physical/Heat Treatment:** The use of hot water treatments for selected municipal areas close to residences, playgrounds, environmentally sensitive areas and schools where annual weed growth in kerbs, channels and pedestrian areas is accessible and can be frequently treated. Hot water application or steaming is a relatively new weed control method and is still in the developmental and promotional stage. The process has been trialled by some city councils in NSW with mixed results on its effectiveness as there seems to be regrowth approximately 2 weeks after initial application. There are 2 companies that have developed the technology for this method (Ensby 2001).
- **Fire Treatment:** The treatment of weeds with fire can be effective in environmental reserves and parks. An ecological burn can reduce vegetation cover, provide access to target weeds and reduce the seed bank of weeds in native ecosystems. In parks, a gas gun can be used to burn annual weeds and prevent or minimise weed species seeding.
- **Mechanical Edging Equipment:** Utilisation of mechanical edging equipment attached to vehicles such as tractors and street cleaning equipment where kerb and channel areas are accessible on a regular basis should be considered and investigated.
- **Solarisation:** Involves covering weeds with plastic sheets to kill them with the heat generated. This method may be a viable option and alternative to herbicides for limited use during summer in areas such as garden beds in parkland areas, or streetscapes prior to planting.
- **Grass Cutting (slashing, mowing or brush cutting):** is a widely accepted method for weed control. Grass cutting alone is not an effective method of weed control, however well timed grass cutting may prevent seed production to a desired level and/or prevent further spread into high quality vegetation. Weed management can be achieved through the prevention of flowering, removal of flowers and/or the removal of seed heads prior to seed set. Grass cutting can increase the production of weed seeds if mis-timed or if follow-up weed control is not adequate.
- **Smothering:** This option is a way of managing plant growth in an area by denying the plants light. It is good for small to medium sized areas (eg up to ~2,000m<sup>2</sup> and depending on available resources) to kill weeds that are there before native revegetation takes place. Smothering (i.e. with jute mat) can also provide temporary erosion control benefits. It is not appropriate or practical for large areas of land.
- **Biological Control:** the use of biological organisms for weed management is of limited value and is managed by the Department of Primary Industries in Victoria. The figures from around the world indicated that only 24% of all species released for biological control have been successful and there are often significant risks



associated with their use. It is often a slow and expensive program but the latest and current biological control programs are available from DPI.

Of these non-chemical controls Darebin City Council currently uses fire treatment, grass cutting, smothering and has trialled biological control on bridal creeper.

Recommendations for weed control for Darebin City Council are to:

- Develop a process for assessing new herbicides for use in the municipality
- Consider new technology and non-chemical weed control techniques as well as herbicide treatment
- Monitor effectiveness of herbicide and other control measures used in the City of Darebin
- Ensure that all herbicides are applied by staff trained in weed control and identification in line with safety and environmental standards
- Ensure staff applying non-chemical weed control measures are adequately trained
- Investigate biological control opportunities with DPI and nearby councils regularly
- Provide information to the general public about weed control methods

## 5.4 Environmental Reserves

### Primary Responsible Group at Darebin City Council– Bushland Management Team

Weed management is important for protecting and improving the quality of the remnant native vegetation. Darebin's Biodiversity Baseline Report (Practical Ecology, 2004) identified weeds as the most pressing threat to the integrity of native vegetation in the City of Darebin. Some of Darebin's environmental reserves are biosites of state significance and all are locally significant – all of the Ecological Vegetation Classes in Darebin are endangered in the state of Victoria.

The priority for managing reserves with environmental importance is to protect and enhance:

1. existing remnants
2. sites linking remnants and high quality revegetation sites
3. other revegetation sites

The priority for managing environmental weeds within these sites is:

1. New and Emerging weeds
2. High Priority weeds
3. Other Established weeds

The environmental reserves within the City of Darebin are managed by La Trobe University, Merri Creek Management Committee, Darebin Creek Management Committee, Melbourne Water and Darebin's Bushland Management Team.

Darebin's Bushland Management Team is responsible for the following tasks in environmental reserves managed by council:

- Maintenance of the biodiversity and the long term viability of the remnant native vegetation
- Development and implementation of management plans for each site (including weed management)
- Monitoring of all sites at regular intervals (at least 4 times per year).

The Bushland Management Team communicates and works in partnership with other land managers and community groups to facilitate sustainable management of environmental reserves for which Darebin City Council is not the land manager.



### **New and Emerging Weeds**

It is a high priority to manage New and Emerging Weeds in the environmental reserves of Darebin.

New and emerging weeds in the bushland context usually initially occur in small and isolated outbreaks. It is important environmentally and economically to treat outbreaks as soon as they are identified. Small infestations are easier and cheaper to remove immediately rather than letting the new weed establish and spread.



### **The Best Practice Management for New and Emerging Weeds in Environmental Reserves**

The Best Practice Management for New and Emerging Weeds in Environmental Reserves is to:

- Utilise local knowledge to identify weeds classified as 'New and Emerging' and report suspected occurrences to the Darebin City Council S.L.M.O. and DPI. The process is:
  1. Darebin City Council together with local community to report new weeds to DPI that have not been reported in the City of Darebin previously.
  2. The Darebin Bushland Management Team to use their knowledge of sites to identify and record New and Emerging Weeds in reserves.
  3. Darebin City Council to facilitate and support owners and land managers to identify and record New and Emerging weeds and potentially serious species present on land within the City of Darebin.
  4. Communicating with adjacent Councils regarding new weeds (this is an opportunity for Darebin City Council to take the lead in setting up a weed network)
    - Determine how the weed arrived at the location (i.e. wind, water, animal and human interaction such as green waste dumping, dropped from machinery or soil moving)
    - Monitor areas where further infestations are likely to start to occur depending on dispersal method
    - Map the location of the weed
    - Form an effective strategy to remove the identified weed species.

### **High Priority Weeds**

The management of High Priority weeds in Environmental Reserves is of critical importance. These weeds are often highly invasive and have a large adverse impact upon the quality of the reserves. The primary goal for the management of High Priority weeds is to contain and reduce the infestations and impacts of these species in the Environmental Reserves of the City of Darebin. The High Priority Weeds include those listed by the PPWCMA in the WAP and those 20 weeds listed in Appendix A – Table 2 as High Priority Darebin Weeds.

### **The Best Practice Management for High Priority Weeds in Environmental Reserves is to:**

- Identify, record and map the cover and location of the weeds within the reserve and update this annually
- Implement weed management works starting from the areas of high quality native vegetation and working through to areas of lesser native vegetation quality as resources allow
- Implement follow up treatment and a long term reduction strategy
- Utilise any existing Environmental Management Plans for Reserves and update them as work occurs and/or as plans become redundant
- Monitor areas for further infestations

### **Other Established Weeds**

The PPWCMA WAP indicates that Other Established Weeds are common and widespread within the region and that eradication is generally not a feasible option. Within the Environmental Reserves the goal is to contain and reduce the impacts and biomass of these species through the adoption of best management practices by land managers.

Established Weeds in the Environmental Reserves are often not managed in a consistent and effective manner. Reasons for this include:

- Limited Resources
- Volume of Biomass



- Difficulty in removal
- Minimal impact to vegetation especially compared to other weed species

**The Best Practice Management for Other Established Weeds in the Environmental Reserves is:**

- Minimise disturbance to areas where weeds are present
- Understand the weed lifecycle and plan management actions to occur before seed set
- Work on small infestations and areas of high quality native vegetation as a priority
- Replacement of weeds with appropriate native species and/or encourage recruitment of existing species.
- Monitor areas for further infestations
- Provide an education program for the community showing impacts of established weeds in native vegetation and aim to minimise the presence of other established weeds in private land



## 5.4 Parks and Reserves

### Primary Responsible Groups at Darebin City Council – Open Space Planning Branch and Darebin Parks Branch

It is important to manage weeds in the parks and reserves of Darebin from a number of perspectives (i.e. aesthetics, environmental and turf and grounds maintenance). The broad goals are to:

- manage priority (CaLP, PPWCMA and DCC) listed weeds
- control priority weed species so that they do not spread into sensitive environmental areas
- maintain visual amenity
- maintain parks and reserves so they are suitable for safe use

The Parks Branch manages over 100 parks and reserves throughout the City of Darebin. Responsibilities include grass cutting, weed management, litter removal, mulching and vegetation management.

Many of these parks and reserves are in close proximity to environmental reserves and the Parks Unit play a role in managing the interface areas between the two types of reserves. It is important that Parks Unit staff have an awareness and understanding of the weed management issues in the surrounding environmental reserves. This is to ensure a coordinated approach is developed for the interface areas.

### New and Emerging Weeds

The identification of New and Emerging Weeds within Parks and Reserves is a priority as reducing infestations when they are small will reduce the ongoing costs of weed management and reduce new weed problems from establishing. Instances of new and emerging weeds in parks and reserves are not likely to be common, however highly invasive species such as *Nassella* (needle grasses) may invade Parks and Reserves. These species may also spread to Environmental Reserves .

A list of potential serious weeds has also been included which do not occur within the City of Darebin. It will be important to monitor for these weeds, identify and respond quickly to any infestation (Appendix A – Table 3).

### The Best Practice Management for New and Emerging Weeds in Parks and Reserves is:

- Parks staff and community to be trained to identify New and Emerging Weeds (including potential serious weeds listed in Appendix A – Table 3) and report suspected new weeds to the Parks Co-ordinators and/or the Sustainable Land Management Officer.
- Parks Co-ordinators to investigate weed occurrence and distribution (including mapping if the species and/or its distribution are significant)
- Determine how the weed may have arrived at the location (i.e. wind, water, animal and human interaction such as green waste dumping, dropped from machinery or soil moving)
- Monitor areas where further infestations are likely to start to occur depending on dispersal method.
- Form an effective strategy to manage the identified weed species.

### High Priority Weeds



The management of High Priority weeds in parks and reserves is of critical importance. These weeds are often highly invasive and have a large adverse impact upon the quality of the reserves. The primary goal for the management of High Priority weeds is to contain and reduce the infestations and impacts of these species. The High Priority Weeds include those listed by the PPWCMA in the WAP and those 20 weeds listed in Appendix A – Table 2 as High Priority Darebin Weeds.

High Priority Weeds such as Serrated Tussock and Chilean needle grass infest parks and reserves and any occurrence should be eradicated if possible (or more realistically - controlled). They are highly dominant and competitive species that may appear similar to other grasses especially when not in flower. These weeds pose a significant risk to parks and reserves and occurrences of them have already been recorded in a number of Parks and Reserves within City of Darebin (e.g. Cotchin, B.T. Connor, Barling and Sullivan Reserves). Due to the difficulties in eradicating these species (Chilean Needle Grass and Serrated Tussock) management needs to focus on reducing their spread to clean areas (areas that do not contain these species). This would include reducing the seed being produced by the grasses (e.g. grass cutting prior to seed production) and reducing the spread of this seed (e.g. vehicle hygiene procedure).

**The Best Practice Management for High Priority Weeds in Parks and Reserves is:**

- To understand the impact of the management techniques used
- To adjust mowing regimes to cut grass before these high priority weeds flower and set seed
- To develop hygiene protocols to reduce the spread of weed seed from infested sites to clean sites
- To commit to follow up treatment and a long term reduction strategy
- Parks staff and community to identify High Priority Weeds (including Darebin High Priority Weeds Appendix A – Table 2) and report infestations to the Parks Co-ordinators and/or the Sustainable Land Management Officer.
- Parks Co-ordinators to investigate weed occurrence and distribution (including mapping if the species and/or its distribution are significant)
- To determine how the weed may have arrived at the location (i.e. wind, water, animal and human interaction such as green waste dumping, dropped from machinery or soil moving)
- To monitor areas where further infestations are likely to start to occur depending on dispersal method and form an effective strategy to manage the identified weed species

**Other Established Weeds**

Other Established Weeds such as broadleaf weeds are the major impacts on parks and reserves. They affect the quality of turf on sporting ovals and in parks. High use sporting ovals are where the weed management resources have generally been allocated by the Parks Open Space Management Unit. These weeds are generally common and widespread and the PPWCMA WAP identifies that eradication of them is generally not feasible.

**The Best Practice Management for Other Established Weeds in the Parks and Reserves is:**

- Parks staff and community to identify Other Established Weeds and report infestations to the Parks Co-ordinators and/or the Sustainable Land Management Officer.
- Parks Co-ordinators to investigate weed occurrence and distribution (including mapping if the species and/or its distribution are significant)
- Determine how the weed may have arrived at the location (i.e. wind, water, animal and human interaction such as green waste dumping, dropped from machinery or soil moving)



- Monitor areas where further infestations are likely to start to occur depending on dispersal method
- Form an effective strategy to manage the identified weed species

## 5.5 Streetscape Management

### Responsible Group - Open Space Planning Branch and Parks Arboriculture Unit

The trees and plants that line streets are important to the City of Darebin in aesthetic, environmental, health and safety contexts. Darebin City Council is responsible for selecting, installing and maintaining streetscapes on residential roads and at some VicRoads sites.

Street trees and roadside amenity plantings are subject to a number of decisions before they are chosen and planted. This is decided with the aid of the *Green Streets Strategy - 1995* and currently that document is being updated by Darebin City Council. It will reflect the changing attitudes to street trees and the environmental values. The important issues for considering which street plants to use are:

- Dispersal methods
- Propagation methods
- Invasiveness of the species
- Potential risks to safety and health

The decision to introduce new species into the City of Darebin as a streetscape planting is taken seriously and Darebin City Council staff research the potential impact of any new species on the environment. This is to avoid the planting of invasive species. Plants chosen for street planting can easily be invasive when the reproductive material is transferred to another location by a range of means (e.g. wind, water, animals, equipment) and the right conditions for the weedy species growth are present.

Locally indigenous native species are not always available or appropriate in the modern urban setting. The responsibility of the Open Space Planning Branch is to ensure that:

- appropriate species are being chosen for streetscapes
- environmental weed species are removed where there is likely to be significant impact upon the environment (i.e. ash seeds entering waterways) or where management to reduce impact can not be taken
- the health and safety of the street trees are monitored
- visual amenity is maintained in the streetscapes

Areas close to waterways and environmentally significant remnants should ideally remain clear of weeds planted/existing in the streetscapes. Planting native species (where appropriate) or exotic species like non-fruiting olives can give the street the same appearance without the environmental risks of invasive weeds.

### New and Emerging Weeds

No species listed as New and Emerging under the *CaLP Act* should be planted within the City of Darebin as street trees/plants. If New and Emerging weeds have been planted in the past then immediate removal and replacement is recommended. The list of New and Emerging Weeds can be found in the PPWCMA WAP.

A list of potential serious weeds has also been included which do not occur within the City of Darebin. It will be important to monitor for these weeds, identify and respond quickly to any infestation (Appendix A, Table 3).



**The Best Practice Management for New and Emerging Weeds in Streetscape Management is:**

- Map Location of any New and Emerging weed species
- Remove New and Emerging weed species once identified
- Update Mapping once removal has occurred
- Contact DSE/DPI for any related material on chosen species as weed species
- Replace removed plants with species selected from the Green Streets Strategy

**High Priority Weeds**

In the past Desert Ash trees were planted in the streetscape as well as other recognised weed species such as Agapanthus, Olive and Spotted Gum. These plants can be managed appropriately but are not preferred choices. The review of the Darebin City Council Green Streets Policy will potentially identify strategies and actions to remove all High Priority environmental weed species from the streetscapes. Darebin City Council is already implementing the opportunistic removal of unhealthy Desert Ash trees (*Fraxinus sp*) that have been planted along streets and replacing them with more appropriate species such as sterile Ash.

**The Best Practice Management for High Priority Weeds in Streetscape Management is:**

- Map Location of weedy plants listed as High Priority including the High Priority Darebin Weeds (Appendix A, Table 2)
- Develop a staged removal plan for weedy plants once identified
- Update Mapping once removal has occurred
- Manage High Priority weed species to minimise environmental risks once identified if removal is difficult so that the weeds do not spread i.e. removal of female sweet pittosporums while retaining male individuals
- Replant with either appropriate native species or non weedy exotic species

**Other Established Weeds**

The species of other established weeds that are established in the area of streets include exotic grasses used as lawn. These are mainly of the broadleaf variety and are removed for the aesthetic and health and safety reasons. Other established weeds in streetscapes are Cootamundra wattles, cotoneasters, olives (privately planted) pine trees and willows. Further survey is required to identify the total other established weeds in streetscapes.

**The Best Practice Management for Other Established Weeds in Streetscape Management is:**

- Survey streetscapes to identify and map Other Established Weeds
- Investigate a staged removal and replacement program for Other Established Weeds in streetscapes
- Utilise non-invasive species for planting streetscapes
- Manage grassed areas so that there is minimal spread of exotic species into other areas
- Assessments of the invasive capabilities of plants should be determined before they are used in landscape plantings
- Examine previous experiences by other groups using chosen species in street plantings
- Look at the lifecycle of non indigenous species and manage appropriately so that it does not spread/reproduce outside of its planted context

**5.6 Council Right of Ways**

Responsible Group – Street Sweeping & Parks Branches

The management of Council Right of Ways is important from an aesthetic, environmental weed management and health and safety perspective. The success of the job is dependant upon a high level of removal and management of weeds. Identification of the weeds that



are treated is required on a day to day basis at the operations level and operations staff need to be made aware of how their role plays a part in the overall management of new and emerging weeds within the Council.

There must be some awareness at the management level of the weeds present and requiring treatment in the ROW's. There is no distinction made between the different weeds treated in the ROW's however weed identification can be carried out by the SLMO or a staff member proficient at advanced weed identification to ensure New and Emerging weeds are not present in the ROW's.

#### **Best Practice Management for Weeds in Council Managed Right of Ways**

- Training of Staff in use of herbicide in a consistent manner
- Report location of treatments on GIS including the requests made by residents for cleaning of Made Right of Ways
- SLMO/staff member proficient at advanced weed identification to identify weed species treated in ROW's regularly and include them in Council Weed List.
- Ensuring existing and all new staff members have an appropriate level of environmental/weed management awareness

A list of potential serious weeds has also been included which do not occur within the City of Darebin. It will be important to monitor for these weeds, identify and respond quickly to any infestation (Appendix A – Table 3).

### **5.7 Weed Management Procedure**

Weeds follow a pattern of population growth that involves: arrival, establishment, colonisation and naturalisation (Macedon Ranges Weed Strategy: 2004). Preventing weeds passing through this cycle will reduce the development of new weed problems. The ideal management for new weeds is to prevent them from arriving in an area in the first place. The management techniques for prevention include quarantine and implementing equipment weed hygiene processes and practices. Prevention however is not always possible as weed seeds and propagules may arrive at a site through a variety of means, including: wind, water and transported in the gut of animals.

The challenge then becomes how best to respond to and manage these new weeds to prevent them from creating larger weed problems. The failure by land managers to take action when weeds are first noticed and infestations are small is the main reason new weed problems arise, with about ten new plants naturalising in Australia each year because of a failure to control these plants when they are at the establishment phase (Glanz 2006: WWF). To effectively manage weeds DCC require a system for weed management that will:

- Minimise/prevent new weed problems
- Minimise larger infestations of the weeds
- Inform and be informed of weed outbreaks especially listed weed species and New and Emerging Weed Species
- Allow for the early detection and reporting of new weed infestations
- Have a rapid response to eradicate weeds when they occur
- Reduce costs involved in weed management
- Increase the chance of local eradication of the weed, as opposed to merely controlling a weed problem
- Share information with other organisations and municipalities about weeds and weed management
- Use appropriate weed management techniques
- Reduce the impact of weeds upon the environment



The Pest Plant and Noxious Weed Review developed jointly by DPI and the CRC for Australian Weed Management have developed a Risk Assessment Procedure for assessing weeds of high risk. It is based upon assessing the biology of the individual species including how fast it will spread (invasiveness), potential to spread and risk to the environment, community and business (such as Agriculture).

### *5.8 Enforcement or Incentives in Weed Management*

Local Government has broad powers in relation to environmental management and more specifically in weed management (MAV 2003) through the Statutory Planning process. Local Council should be seen by the community as a strategic planner and priority setter, community educator, advocate and as a coordinator of community weed management programs. Engaging the community to take a more active role in weed management may involve the use of enforcement and incentive tools.

The Local Government Planning Schemes allow Councils to set out policies and requirements for the use, development and protection of land. Permits are necessary for some new uses and development of land and these permits must adhere to the provisions set out in the Council Planning Schemes. Council can therefore enforce weed control measures through the Planning Scheme. These permits can be used as a tool to educate and enforce environmentally responsible behaviour. Council has the power to declare certain plants (e.g. environmental weeds, potential garden escapees) not be planted in new developments and can develop a list of weeds that are not to be used in any new plantings. Once these weeds are declared it is then enforceable and developers/new home owners using these plants can be prosecuted under the Planning and Environment Act 1987. Provisions of weed control and removal can also be incorporated into all new planning permits and this would greatly reduce the risk of weed invasions and reduce weed abundance in the long-term.

Local Laws are another tool that local governments can use to enforce weed management on private land. Under the Local Government Act 1989, Local Council can create a Local Law relating to weed management. Some councils currently use a local law to enforce the control of declared weeds on properties that are not a priority for DSE (generally properties that are two hectares or less in size) (MAV 2003). Other councils have expressed concern at the use of a local law relating to weed management due to the:

- Limited resources of council to follow through on compliance checks and enforcement
- The return from penalties being too low to justify the expenditure of the resources required
- Desired outcomes being rarely achieved because landholders pay the fine which is considerably lower than the cost to the landholder for control
- Wording not being accurate enough to enforce (MAV 2003)

It is clear that for Darebin City Council to develop a local law directly relating to weed control the following considerations would need to be taken into account:

- The wording of the Local Law is clear, not ambiguous and cannot be misinterpreted
- Sufficient resources are allocated to ensure the Local Law can be enforced
- Penalties to landholders are severe enough to discourage non-compliance of the Local Law

There should be a focus on educating the community with regard to weeds and their management and it should be recognised that enforcing a local law may be difficult and should be used only when education is ineffective. A rationale needs to be developed to determine the priorities for the enforcement of this Local Law with resources being directed towards:

- Landholders who have serious breaches that undermine the efforts of others in the community



- Landholders who adjoin environmentally significant reserves where the impact of weeds will cause the greatest impact

Local Government can also improve local weed management through providing grants, incentives and rate rebates to landowners. These can be successful tools in raising awareness of land management issues in a positive and supportive way. Grants are identified as being the most popular incentive mechanism used by councils to progress weed management (MAV 2003). The grants can be made available to landowners, community groups and school groups to assist these groups to undertake weed control projects that will provide positive outcomes on council managed land. Incentives can also take the form of a rate rebate, which offers a discount on the landowner's Council rates as a means of engaging the community in weed management practices. Incentive programs generally take 5-7 years to become well established and for the target stakeholders in the community to be aware of the program. Incentive programs provide the following benefits:

- Increased landowner awareness of their role as a land manager
- Increased capacity of landowner to manage their property in a sustainable way
- Cost of land management shared
- Local Councils can show support for weed management on private land without taking responsibility for doing it

A copy of the draft local law developed in consultation with Golden Plains Shire, Mooroolbawn Shire and DPI is included as Appendix B. It has been designed for use by any municipality in Victoria.



## 6 Review of Strategy

Weed management is an ongoing issue with practices that should continuously be under review and improvement. As this is the first report and strategy it should provide Darebin City Council with a baseline of information on weeds and weed management within the council boundary that will be built upon each time there is a review. The timeframe for review of this strategy will be 3 - 5 years from implementation. The review will include looking at the current list of recommendations. It will be important to know what actions have been or are being achieved from the list. To aid in this endeavour the actions have been prioritised:

1. High
2. Medium High
3. Medium
4. Medium Low
5. Low

The success of the Strategy relies upon the endorsement and implementation of the Recommended Actions by Darebin City Council. It is recommended that Darebin City Council should record the number of Actions that have been addressed from this initial Integrated Weed Management Strategy. The Actions of priority 1 (High) and 2 (Medium High) are key to weed management within the urban environment of Darebin City Council and should be addressed as such. It is not expected however that Darebin City Council will have the resources to implement all of the Actions immediately but it is expected that the Highest Priority Actions will have been achieved within the timeframe of this document. The High Priority Actions and corresponding recommendations have been included separately on the next page and are considered to be key factors in the overall management of weeds within Darebin City Council. They should be considered for action during the first financial year after the strategy is adopted by Council. The full Recommendations List is found in Appendix C.

It is recommended that Darebin City Council allocate appropriate resources for the implementation of High and Medium High Priority Actions within the time frame of this document. This is because Weed Management has to be considered as a long term and ongoing commitment for success to be achieved. The development of this Integrated Weed Management Strategy has placed Darebin City Council in a position where they will be able to respond to the challenges of weed management within the Port Phillip CMA.



## HIGH PRIORITY ACTIONS FOR DAREBIN CITY COUNCIL

RECOMMENDATION	ACTION
To effectively manage existing weeds in the City of Darebin	DCC should develop and adopt a program aimed at reducing the spread of weeds by vehicles managed by contractors, service providers and government agencies such as the "Weedstop" program develop with DPI
DCC to utilise appropriate weed management systems	DCC to review, complete and adopt a herbicide policy to guide the use of herbicides within the council boundary including where herbicide is used and how often
To identify and eradicate quickly and effectively any new and / or emerging weed species in the City of Darebin	Use provisions in CaLP Act to ensure quick action and eradication and to enforce land owners to comply with weed management
	Inform DPI if new and emerging weed species are detected and take action as appropriate for the species and risk category
Continue to develop the most effective techniques for weed management in Bushland Remnants occurring on Council land	Map the actual extents of areas of biodiversity significance on council land
	Map the areas of responsibility in larger reserves which are not entirely managed by a single business unit within DCC
Continue to develop the most cost effective techniques for weed management in parks, road reserves and rights of way	Investigate the potential use of residual herbicides within DCC for treatment of rights of ways, laneways and road reserves
Education of Darebin City Council Staff and contractors about weed management	Develop best practice vehicular hygiene guidelines, including establishment of wash down stations within DCC and portable wash down stations
Consultation and coordination with other key stakeholders to develop regionally complementary Weed Strategies	Liaise with surrounding local councils (Banyule, Moreland, Hume, Yarra and Whittlesea) to develop complementary Weed Strategies to coordinate weed management along boundaries
	Identify the land that DCC is responsible for managing and the land where other agencies are responsible



	DCC to inform owners, local business and other stakeholder groups of their responsibilities for weed management
Develop regulations and processes to best address High Priority Weeds and CaLP Act Weeds within the City of Darebin	Amend DCC Local Laws to require property weed clean up of listed weed species as a condition of sale and development of land
	DCC to develop a compliance scheme under the CaLP Act and the Local Government Act to enforce weed removal
Integrated monitoring and information management	Ensure the mapping technique is compatible with the DPI Pest Management System
	Identify and map intact areas of high quality native vegetation and monitor for weed infestations
Ensure effective implementation of the Integrated Weed Management Strategy	Appoint full time Sustainable Land Management Officer (S.L.M.O) to manage and coordinate weed strategy within Darebin City Council across all the groups



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- Randwick City Council Weed Page  
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## 2. APPENDICES

- A. Darebin Weed Lists including:
  - 1. Weeds of National Significance
  - 2. Darebin Priority Weeds
  - 3. Potential New High Threat Weeds in Darebin City Council
  - 4. Full Darebin Weed List
- B. Draft Local Law
- C. Darebin Weed Management Recommendations
- D. Kate Blood GIS Document
- E. Weed Spotters Network
- F. Weed Maps
- G. Weed Legislation and Policy Fact Sheet
- H. Weed Management Techniques Fact Sheet



**Appendix A**  
**Table 1 - List of Weeds of National Significance**

<b>Botanical Name</b>	<b>Common Name</b>
<i>Alternanthera philoxeroides</i>	Alligator weed
<i>Acacia nilotica ssp.indica</i>	Prickly acacia
<i>Annona glabra</i>	Pond apple
<i>Asparagus asparagoides</i>	Bridal creeper
<i>Cabomba caroliniana</i>	Cabomba
<i>Chrysanthmoides monolifera</i>	Bitou bush / boneseed
<i>Cryptostegia grandiflora</i>	Rubber vine
<i>Hymenachne amplexicaulis</i>	Hymenachne
<i>Lantana camara</i>	Lantana
<i>Mimosa pigra</i>	Mimosa
<i>Nassella neesiana</i>	Chilean Needle grass
<i>Nassella trichotoma</i>	Serrated tussock
<i>Parkinsonia aculeate</i>	Parkinsonia
<i>Parthenium hysterophorus</i>	Parthenium weed
<i>Prosopis spp.</i>	Mesquite
<i>Rubus fruticosus agg.</i>	Blackberry
<i>Salix spp. (except S.babylonica, S.x calodendron and S.x reichardtiji)</i>	Willow (except weeping willows, pussy willow and sterile pussy willow)
<i>Salvinia molesta</i>	Salvinia
<i>Tamarix aphylla</i>	Athel pine
<i>Ulex europaeus</i>	Gorse

Weed list developed by Cooperative Research Centre for Australian Weeds  
 The species were chosen because of their potential to expand the current range, the environmental impact and the economic impact.



Table 2 - Priority Weeds in the City of Darebin

Botanical Name	Common Name	National Listing	DSE Listing	CMA Listing	Management Priority
<i>Alternanthera philoxeroides</i>	Alligator weed	WONS	SP	NE	1
<i>Asparagus asparagoides</i>	Bridal creeper	WONS	RES	HPE	1
<i>Chrysanthemoides monilifera</i>	Boneseed / Bitou Bush	WONS	RC	OE	2
<i>Conium maculatum</i>	Hemlock		RC	OE	3
<i>Crataegus monogyna</i>	Hawthorn		RC	OE	3
<i>Cynara cardunculus</i>	Artichoke thistle		RC	OE	2
<i>Cytisus scoparius</i> subsp. <i>scoparius</i>	English Broom		RC	OE	3
<i>Echium plantagineum</i>	Patterson's curse		RC	OE	3
<i>Ehrharta erecta</i>	Panic veldt-grass			OE	3
<i>Fraxinus angustifolia</i>	Desert Ash				2
<i>Genista monspessulana</i>	Cape Broom		RC	OE	3
<i>Lycium ferocissimum</i>	African Boxthorn		RC		3
<i>Nassella neesiana</i>	Chilean Needlegrass	WONS	RES	HPE	1
<i>Nassella trichotoma</i>	Serrated tussock	WONS	RC	HPE	1
<i>Onopordum acanthium</i>	Scotch thistle		RP	HPE	1
<i>Pittosporum undulatum</i>	Sweet Pittosporum			HPE	3
<i>Rosa rubiginosa</i>	Sweet Briar		RC	OE	3
<i>Rubus fruticosus</i> spp. agg.	Blackberry	WONS	RC	OE	1
<i>Salix</i> spp.	Willows	WONS			1
<i>Ulex europaeus</i>	Gorse	WONS	RC	OE	2
<i>Watsonia meriana</i> var. <i>bulbillifera</i>	Wild watsonia		RC	OE	3

- SP State Prohibited
- RP Regionally Prohibited
- RC Regionally Controlled
- RES Restricted
- WONS Weed Of National Significance
- NE New and Emerging Weed
- HPE High Priority Established Weed
- OE Other Established Weed



**Table 3 – High Risk Weeds not recorded in the City of Darebin**

Scientific Name	Common Name	Status	Location
<i>Acacia elata</i>	Cedar wattle	OE	Banyule
<i>Acacia Saligna</i>	Golden Wreath Wattle	Other High Risk Weeds	Banyule
<i>Acer negundo</i>	Box Elder Maple	Other High Risk Weeds	Moreland
<i>Ailanthus altissima</i>	Tree of heaven	OE / RC	
<i>Araujia sericifera</i>	Cruel Vine	Other High Risk Weeds	Moreland
<i>Calicotome spinosa</i>	Spiny broom	OE / RC	
<i>Carduus pycnocephalu</i> and <i>C. tenuiflorus</i>	Slender thistles	OE / RC	Banyule
<i>Carthamus lanatus</i>	Saffron thistle	OE / RC	Banyule, Moreland
<i>Chondrilla juncea</i>	Skeleton weed	NE	
<i>Cirsium arvanse</i>	Californian thistle	OE / RC	
<i>Crocosmia x</i> <i>crocosmiiflora</i>	Montbretia	OE	Banyule, Moreland
<i>Datura</i> spp.	Thorn-apple	OE / RC	
<i>Diploaxis tenuifolia</i>	Sand rocket	OE / RC	
<i>Dipsacus fullonum</i>	Wild Teasel	OE	
<i>Dittrichia graveolens</i>	Stinkwort	OE / RC	
<i>Eragrostis curvula</i>	African love-grass	NE	
<i>Erica lusitanica</i>	Spanish heath	OE	Banyule
<i>Hypericum</i> <i>tetrapterum</i>	St Peter's wort	NE	
<i>Juncus acutus</i>	Spiny rush	OE / RC	
<i>Juncus articulatus</i>	Jointed rush	OE	Banyule
<i>Lantana camara</i>	Lantana	OE / WONS / RES	
<i>Lavandula stoechas</i>	Topped lavender	EO / RC	
<i>Lepidium draba</i>	Hoary cress	OE / RC	
<i>Marrubium vulgare</i>	Horehound	OE / RP	Banyule
<i>Moraea flaccida /</i> <i>miniata</i>	Cape tulip (one & two leaf)	NE	Moreland
<i>Oxalis latifolia</i>	Large-leafwood-sorrel	OE	
<i>Pennisetum</i> <i>macrourum</i>	African feather-grass	NE	
<i>Physalis viscosa</i>	Prairie ground-cherry	OE / RC	
<i>Pinus pinaster</i>	Cluster pine	OE	
<i>Polygala</i> non native spp.	Milkworts	OE	
<i>Reseda luteola</i>	Wild mignonette	OE	Banyule
<i>Scolymus hispanicus</i>	Golden thistle	OE / RC	
<i>Senecio jacobaea</i>	Ragwort	NE	
<i>Senecio pterophorus</i>	South African daisy	OE	



<i>Silybum marianum</i>	Variegated thistle	OE / RC	Banyule
<i>Solanum elaeagnifolium</i>	Silver leaf nightshade	NE	
<i>Solanum linnaeanum</i>	Apple of Sodom	OE / RC	Hume
<i>Solanum pseudocapsicum</i>	Jerusalem cherry	OE	
<i>Spartina x townsendii</i>	Cord grass	OE	
<i>Verbascum thapsus</i>	Great mullein	OE	
<i>Xanthium spinosum</i>	Bathurst burr	OE / RP	Banyule

- SP State Prohibited
- RP Regionally Prohibited
- RC Regionally Controlled
- RES Restricted
- WONS Weed Of National Significance
- NE New and Emerging Weed
- HPE High Priority Established Weed
- OE Other Established Weed



Table 4 – Full List of Weeds for the City of Darebin

Botanical Name	Common Name	Rating
<i>Acacia baileyana</i>	Cootamundra wattle	OE
<i>Acacia floribunda</i>	White Sallow Wattle	-
<i>Acacia longifolia</i> var. <i>longifolia</i>	Sallow Wattle	
<i>Acetosella vulgaris</i>	Sheep Sorrel	
<i>Agapanthus praecox</i>	Agapanthus	
<i>Agrostis capillaris</i>	Brown top bent	OE
<i>Aira cupaniana</i>	Quicksilver Grass	
<i>Allium triquetrum</i>	Angled Onion	RC / OE
<i>Allium vineale</i>	Crow Garlic	OE
<i>Alternanthera philoxeroides</i>	Alligator Weed (seasonal)	WONS / SP
<i>Anagallis arvensis</i>	Pimpernal	
<i>Anredera cordifolia</i>	Maderia Vine	
<i>Anthoxanthum odoratum</i>	Sweet Vernal grass	OE
<i>Arbutus unedo</i>	Irish Strawberry Tree	
<i>Arctotheca calendula</i>	Cape Weed	
<i>Aria caryophyllea</i>	Silvery Hair-grass	
<i>Artemisia verlotorum</i>	Chinese Wormwood	
<i>Asparagus aethiopicus</i>	Asparagus fern	
<i>Asparagus asparagoides</i>	Bridal Creeper	WONS / RES/ HPE
<i>Aster subulatus</i>	Aster-weed	
<i>Avena barbata</i>	Bearded Oat	
<i>Avena fatua</i>	Wild Oats	
<i>Bambusa</i> sp.	Bamboo	
<i>Brachychiton acerifolius</i>	Kurrajong	
<i>Brassica tournefortii</i>	Wild turnip	
<i>Briza maxima</i>	Large quaking grass	OE
<i>Briza minor</i>	Lesser quaking grass	
<i>Bromus catharticus</i>	Prairie Grass	
<i>Bromus diandrus</i>	Great Brome	
<i>Bromus hordeaceus</i>	Soft Brome	
<i>Bromus madritensis</i>	Compact Brome	
<i>Calendula officinalis</i>	Garden Marigold	
<i>Callitriche stagnalis</i>	Water Starwort	
<i>Calystegia soldanella</i>	Great Bindweed	
<i>Canna x generalis</i>	Canna Lily	
<i>Centarium erythraea</i>	Common centaury	
<i>Centaurium tenuiflorum</i>	Centaury	
<i>Cerastium glomeratum</i>	Common Mouse-eared Chickweed	
<i>Chamaecytisus proliferus</i>	Tree Lucerne	
<i>Chenopodium album</i>	Fat Hen	
<i>Chlorophytum comosum</i>	Spider Plant	
<i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	Boneseed	WONS / RC/OE
<i>Cicendia quadrangularis</i>	Square Cicendia	
<i>Cichorium intybus</i>	Chicory	
<i>Cirsium vulgare</i>	Spear Thistle	RC/OE
<i>Conium maculatum</i>	Hemlock	RC/OE
<i>Conyza bonariensis</i>	Fleabane	
<i>Coprosma repens</i>	Mirror Bush	
<i>Cortaderia selloana</i>	Pampas Grass	



<i>Corymbia maculata</i>	Spotted Gum	
<i>Cotoneaster sp</i>	Cotoneaster	OE
<i>Cotula coronopifolia</i>	Water Buttons	
<i>Crassula multicaeva</i>	Heart-shaped Crassula	
<i>Crataegus monogyna</i>	Hawthorn	RC/OE
<i>Cuscuta epithimum</i>	Common Dodder	
<i>Cynara cardunculus</i>	Artichoke thistle	RC/ OE
<i>Cynodon dactylon</i>	Couch	
<i>Cynosurus echinatus</i>	Rough Dog's Tail	
<i>Cyperus eragrostis</i>	Drain Flat-sedge	OE
<i>Cyperus tenellus</i>	Tiny flat-sedge	
<i>Cytisus scoparius ssp. Scoparius</i>	English Broom	RC/OE
<i>Dactylis glomerata</i>	Cocksfoot	
<i>Delairea odorata</i>	Cape Ivy	OE
<i>Drosanthemum candens</i>	Rodondo Creeper	
<i>Echium plantagineum</i>	Patterson's Curse	RC/OE
<i>Ehrharta erecta</i>	Panic veldt grass	OE
<i>Ehrharta longifolia</i>	Annual Veldt-grass	
<i>Epilobium ciliatum</i>	Glandular Willow-herb	
<i>Erica lusitanica</i>	Spanish Heath	OE
<i>Eucalyptus cladocalyx</i>	Sugar gum	
<i>Euphorbia lathyris</i>	Caper Spurge	
<i>Euphorbia peplus</i>	Petty Spurge	
<i>Festuca arundinacea</i>	Tall Fescue	
<i>Ficus Carica</i>	Fig	
<i>Foeniculum vulgare</i>	Fennel	RC/OE
<i>Fraxinus angustifolia</i>	Desert Ash	
<i>Freesia hybrid</i>	Freesia	
<i>Galenia pubescens</i>	Galenia	OE
<i>Galium aparine</i>	Cleavers	
<i>Gamochaeta purpurea</i>	Purple Cudweed	
<i>Gaudinia fragilis</i>	Fragile Oat	
<i>Genista linifolia</i>	Flax-leafed broom	OE
<i>Genista monspessulana</i>	Cape/Montpellier Broom	RC/OE
<i>Geranium sp.</i>	Geranium	
<i>Gladiolus sp.</i>	Gladiolus	
<i>Grevillea rosmarinifolia</i>	Rosemary Grevillea	
<i>Hakea salicifolia</i>	Willow-leaf Hakea	
<i>Hedera helix</i>	English Ivy	OE
<i>Helminthotheca echioides</i>	Ox-tounge	
<i>Holcus lanatus</i>	Yorkshire fog	
<i>Hypericum androsaemum</i>	Tutsan	RC/OE
<i>Hypericum perforatum</i>	St. John's wort	RC/HPE
<i>Hypochoeris radicata</i>	Cat's ear	
<i>Ipomoea sp.</i>	Morning Glory	
<i>Iris sp.</i>	Iris	
<i>Isolepis hystrix</i>	Awed Club-sedge	
<i>Juncus amabilis</i>	Jointed Rush	
<i>Juncus capitatus</i>	Capitate Rush	
<i>Lactuca serriola</i>	Prickly Lettuce	
<i>Leontodon taraxacoides subsp.</i>		
<i>Taraxacoides</i>	Hairy Hawkbit	
<i>Ligustrum sp.</i>	Privet	
<i>Linum trigynum</i>	French Flax	



<i>Lolium perenne</i>	Perennial Rye-grass	
<i>Lolium rigidum</i>	Wimmera Rye-grass	
<i>Lonicera japonica</i>	Japanese Honeysuckle	OE
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	
<i>Lycium ferocissimum</i>	African Boxthorn	RC
<i>Malva parviflora</i>	Small-flowered Mallow	
<i>Medicago polymorpha</i>	Burr Medic	
<i>Melaleuca armillaris</i>	Giant Honey Myrte	
<i>Melaleuca hypericifolia</i>	Hillock Bush	
<i>Modiola caroliniana</i>	Carolina Mallow	
<i>Narcissus sp.</i>	Daffodil	
<i>Nassella leucotricha</i>	Pale Needle-grass	OE
<i>Nassella neesiana</i>	Chilean Needle grass	WONS / RES/ HPE
<i>Nassella trichotoma</i>	Serrated Tussock	WONS / RC/ HPE
<i>Onopordum acanthium</i>	Scotch Thistle	RP /HPE
<i>Opuntia spp.</i>	Prickly Pear	OE
<i>Opuntia stricta</i>	Erect Prickly Pear	OE
<i>Opuntia vulgaris</i>	Drooping Prickly Pear	OE
<i>Oxalis pes-caprae</i>	Soursob	OE
<i>Parentucellia latifolia</i>	Red Bartsia	
<i>Paspalum dilatatum</i>	Paspalum	
<i>Paspalum distichum</i>	Water Couch	OE
<i>Pennisetum clandestinum</i>	Kikuyu	OE
<i>Pennisetum setaceum</i>	Fountain Grass	
<i>Phalaris aquatica</i>	Toowoomba Canary-grass	
<i>Phoenix canariensis</i>	Canary Island Date Palm	
<i>Picris eoides</i>		
<i>Pinus radiata</i>	Radiata Pine	OE
<i>Piptatherum miliaceum</i>	Rice Millet	
<i>Pitiosporum undulatum</i>	Sweet Pittosporum	HPE
<i>Plagiobothrys canescens</i>	Valley Popcorn Flower	
<i>Plantago coronopus</i>	Buck's horn Plantain	
<i>Plantago lanceolata</i>	Ribwort	
<i>Poa annua</i>	Winter Grass	
<i>Polypogon monspeliensis</i>	Annual Beard-grass	
<i>Populus alba</i>	White Poplar	
<i>Prunus cerasifera</i>	Cherry-Prum	
<i>Purietaria judaica</i>	Pellitory	
<i>Pyracantha spp.</i>	Firethorns	
<i>Quercus ssp.</i>	Oak	
<i>Ranunculus muricatus</i>	Sharp Buttercup	
<i>Ranunculus repens</i>	Creeping Buttercup	OE
<i>Raphanus raphanistrum</i>	Wild radish	
<i>Rapistrum rugosum</i>	Giant Mustard	
<i>Romulea rosea</i>	Onion Grass	
<i>Rorippa nasturtium-aquaticum</i>	Two-row Bitter-cress	
<i>Rosa rubiginosa</i>	Briar Rose	RC/OE
<i>Rubus fruticosus spp. agg.</i>	Blackberry	RC/ OE
<i>Rumex conglomeratus</i>	Clustered Dock	
<i>Rumex crispus</i>	Curled Dock	
<i>Rumex pulcher</i>	Fiddle Dock	
<i>Salix spp</i>	Weeping willow	RES
<i>Salix alba X fragila</i> <i>Salix spp</i>	Crack Willow	WONS / RES/OE
<i>Salix x rubens</i>	Hybrid Crack Willow,	WONS / RES/OE



	Basket Willow	
<i>Salpichroa origanifolia</i>	Pampus Lily of the Valley	OE
<i>Schinus molle</i>	Peppercorn	OE
<i>Setaria parviflora</i>	Slender Pidgeon Grass	
<i>Silene gallica</i>	French Catchfly	
<i>Silene vulgaris</i>	Bladder campion	
<i>Silybum marianum</i>	Variegated Thistle	RC/OE
<i>Sisyrinchium iridifolium</i>	Striped Rush-leaf	
<i>Solanum mauritianum</i>	Wild Tobacco	
<i>Solanum nigrum</i>	Black nightshade	
<i>Solanum pseudocapsicum</i>	Jerusalem Cherry	OE
<i>Sollya heterophylla</i>	Bluebell creeper	
<i>Sonchus oleraceus</i>	Common sow-thistle	
<i>Sporobolus africanus</i>	Rat-tail grass	OE
<i>Tradescantia fluminensis</i>	Tradescantia	OE
<i>Tragopogon porrifolius</i>	Salsify	
<i>Tribolium acutiflorum</i>	Plagiachloa	
<i>Trifolium angustifolium</i> var. <i>angustifolium</i>	narrow-leaf clover	
<i>Trifolium campestre</i> var. <i>campestre</i>	hop clover	
<i>Trifolium dubium</i>	suckling clover	
<i>Trifolium repens</i> var. <i>repens</i>	white clover	
<i>Trifolium striatum</i>	Knotted Clover	
<i>Tritonia lineata</i>	Lined Tritonia	
<i>Typha domingensis</i>	Cumbungi	
<i>Ulex europeus</i>	Gorse	WONS / RC/OE
<i>Ulmus procera</i>	English Elm	
<i>Verbascum thapsus</i>	Blanket Weed	
<i>Verbena bonariensis</i>	Purple Top	
<i>Vicia sativa</i>	Common Vetch	
<i>Vinca major</i>	Blue periwinkle	OE
<i>Viola odorata</i>	Violet	
<i>Vulpia bromoides</i>	Squirrel-tail Fescue	
<i>Watsonia meriana</i> var. <i>bulbillifera</i>	Bulbil Watsonia	RC/OE
<i>Zantedeschia aethiopica</i>	White Arum Lily	

- SP State Prohibited
- RP Regionally Prohibited
- RC Regionally Controlled
- RES Restricted
- WONS Weed Of National Significance
- NE New and Emerging Weed
- HPE High Priority Established Weed
- OE Other Established Weed