Rural Living

WOLLONDILLY SHIRE WEED MANAGEMENT STRATEGY

May 07

WOLLONDILLY SHIRE COUNCIL

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Introduction

Citation

This proposed Local Government Weeds Management Strategy may be cited as the "Wollondilly Shire Weed Management Strategy" (the Strategy).

Contents of this Strategy

The Strategy has three parts;

- Part 1 introduces Local Government Weeds Management and the issues faced.
- Part 2 lists each weeds management activity direction and action, and how these will be addressed by the different stakeholders.
- Part 3 contains cost allocation, funding and administrative information.

An Operational Plan accompanies this strategy, it contains

- An annual operations plan for the period 2007 – 2010 (3 years)
- Noxious Weed List and relevant control measures
- Weed Control Plans

PART 1

Purpose

The purpose of this Strategy is to provide for the efficient and effective assessment, management and/or eradication of plant pests within the Wollondilly Local Government Area (LGA) with the aim to:-

1. Avoid the introduction or dispersal of new weed or potential weed species.

2. Minimise any further dispersal of established declared noxious weeds species.

3. Minimise the adverse effects of weed species upon the environment.

4. Undertake weeds management operations in an integrated manner.

5. Undertake weed management operations on a catchment basis.

6. Establish priorities in Weed Management activities and target species

7. Link Weed Management activities to the resources available in the community and Council.

Under this Strategy, Wollondilly Shire Council is intending to exercise its statutory role to impose legal obligations upon the resident and manage declared noxious weeds upon lands and road reserves under its control.

Wollondilly Shire Council will:-

1. Implement the provisions of the Noxious Weeds Act, 1993 as they apply to Council as a regulator and land owner/ manager;

2. Incorporate weed reduction measures within its land use planning activities;

3. Implement its Roadside Management Strategy to protect vegetation and minimise weed spread within road reserves;

4. Provide technical information to landowners and occupiers.

5. Implement weed management in conjunction with the Wollondilly Biodiversity Strategy

6. Actively participate in Regional, State and National Weed management strategies and plans where appropriate.

7. Actively promote and facilitate the development and maintenance of Community Landcare and Bushcare Groups which Control or manage weeds as part of their activities.

Scope

The Strategy relates to the whole of the Wollondilly Local Government Area (LGA) and applies to the management of weeds activities administered by Council under the Noxious Weeds Act 1993.

The scope of this strategy does not address nor seek to duplicate legislation administered by the National Parks and Wildlife Service, New South Wales Department of Primary Industries, Sydney Catchment Authority and the Department of Environment and Climate Change.

Description of Wollondilly LGA

Wollondilly LGA is located 75 kilometres south west of the Sydney CBD. The LGA has an area of 2560.9km^2 with 727 hectares of open spaces, reserves and national parks.

The Local Government Area has a population of approximately **39,000 (2001 census**) residing in small towns and villages within a rural setting.

The LGA has a number of environmental features which impact on weed management. These include water catchment characteristics which place the LGA in three major river catchments, the Wollondilly, Georges and the Nepean. There are five dams including Warragamba each with their associated Special Protection Areas.

A number of native Vegetation communities exist within the LGA and these include significant remnant stands of threatened Ecological Communities of the Cumberland Plain Woodland as well as individual species recognised under the Threatened Species Schedule under the Threatened Species Conservation Act 1999.

These natural attribute of the Wollondilly Shire increase the need to protect its biodiversity from weed invasion and practices that elude to weed establishment.

The soils of the Wollondilly Shire provide good conditions for weed growth and the soils are highly reactive and erode when exposed. Extractive Industries, exploiting the geology of the LGA are an important part of its economy.

The LGA plays a significant role in the agricultural and horticultural industries in the Sydney Basin, providing much of the fresh food for the city. The recent changes in land use have seen the larger agricultural industries such as dairying, grazing and cropping being progressively replaced by hobby farms and Rural Residential development. The change in social demographics associated with this change in land use, has seen a reduction in of weed management skills and knowledge in the community.

Weed Management Issues and Wollondilly Vision 2025

This weed strategy aligns with the Wollondilly Vision 2025 by setting down a framework which endeavours to achieve a strategic approach to weed management. The diversity and rural nature of Wollondilly Shire endeavours to be protected by strategies such as these to achieve the outcomes of the Vision. Below are four of the main Visions that can benefit from a weeds strategy;

Vision1 A Wealth of Native Flora and Fauna.

Key Strategies are:

- S1.1 – Implement Biodiversity Strategies
- S1.2 – Implement planning controls, guidelines and management systems to protect and enhance native vegetation, remnant bushland and ridgelines
- S1.3 – Support landowners to manage, restore and protect native vegetation and investigate incentive programs
- S1.4 – Promote and enhance vegetation management through community involvement and partnerships between landowners, landcare groups etc
- S1.5 – Implement strategies to manage weeds and feral animals

The strategy prioritises works which are around areas of high conservation value and endeavours to enhance these areas by reducing weeds in these areas.

Vision 2: Healthy Waterways.

Key Strategies are:

- S2.1 – Implement Biodiversity Strategies
- S2.2 – Implement planning controls, guidelines and management systems to protect creek and river corridors
- S2.6 – Promote and enhance water management and conservation through community involvement and partnerships between landowners, landcare groups etc

The strategy prioritises aquatic weeds and the need to manage biodiversity near waterways.

Vision 3: Protected Rural Character and Environmental Heritage.

Key Strategies are:

- S3.1 – Implement planning controls and guidelines to……protect water catchment, national parks etc
- S3.2 – Retain the rural setting by promoting working productive farms to retain rural areas between towns
- S3.5 – Implement a strategy for Wollondilly's heritage which protects Aboriginal and non aboriginal heritage items
- S3.8 – Define criteria and locations for rural residential development that retains the existing rural character

The strategy intends to encourage residents on rural lands to reduce infestations of weeds to maintain the rural character of area.

Vision 4: Sustainable Farms.

Key Strategies are:

- S4.2 – Retain and encourage sustainable agricultural production and a diversity of agricultural and rural enterprises on rural lands
- S4.3 – Implement planning guidelines and controls that encourage diversity of agricultural activities, ensure new agriculture enterprises are environmentally sound and ensure sustainable land and water management practices are adopted.
- S4.4 – Encourage and support sustainable agricultural and land management practices to address …….weed infestation, land degradation etc through community education.

Encouraging the community to reduce weeds can reduce the accumulative impacts on farmer's costs.

Wollondilly Biodiversity Strategy

The Wollondilly Biodiversity Strategy was developed in 2004 and adopted by Council in 2005. The aim of this Strategy was to define and manage the Shires unique flora and fauna. Weed impacts are a major key threatening process to the habitat and ecosystems of both flora and fauna. Weed invasion can compete with other plants, change soil structure, shade out and suppress native vegetation and therefore limit food sources and habitat for fauna. Weed infestation is a sign of impacts and change in a landscape.

Biodiversity Strategy Visions and Sub Strategies that relate to this Weed Management Strategy include;

Biodiversity Vision Strategy 1: Implement planning controls and management systems to protect and enhance native vegetation areas and links across private and public lands, remnant bushland and other lands of high ecological value.

Biodiversity Vision Strategy 2: Support landowners to manage, restore and protect native vegetation, investigate incentive programs.

Biodiversity Vision Strategy 3: Implement planning controls, guidelines and management systems to protect and enhance native vegetation areas and links across private and public lands, remnant bushland and other lands of high ecological value.

Biodiversity Vision Strategy 4: Provide protection for significant remnant vegetation communities and associations, with a focus on maintaining and building connections between threatened communities.

Biodiversity Vision Strategy 5: Promote and enhance vegetation management through community involvement and partnerships between land owners, Landcare groups and 'friends groups, schools, trusts, local business, Council, Tharawal Aboriginal Land Council, other community organisations and government agencies.

Biodiversity Vision Strategy 6: Implement strategies to manage weeds and feral animals.

Biodiversity Vision Strategy 7: Implement planning controls, guidelines and management systems to protect and enhance creek and river corridors, establish riparian buffers along all creeks rivers and tributaries and encourage and zone appropriate uses for land adjacent to creek and river corridors and tributaries.

Wollondilly Weed Management Issues

Many of the LGA's natural and physical resources and many economically important activities can be adversely affected by plant pests or by inadequate plant pest management. Plant pests are usually competitive and adaptable - they can threaten natural ecosystems and commercial crops. The adverse impacts of plant pests include:-

- Deterioration of natural ecosystems, through competition with indigenous flora;
- Adverse effects on soil and water quality through contamination and aquatic weeds,
- Reduced rural productivity through the competition with commercial plants;
- Adverse effects upon human health and enjoyment through poisonous or irritating plants;
- Adverse effects on public infrastructure through deterioration of roadways, transport corridors and waterways;
- Adverse effects on tourism and recreation; through contamination and infestation of the landscape
- Adverse effects upon the viability of rare or endangered species and ecological communities through competition and infestation,

Aim of the Strategy

This Strategy will provide for the maintenance and enhancement of the natural environment, including indigenous ecosystems, water and soil resources. It will also provide for the human environment by protecting human health and safety and maintaining amenity and recreation values. The economic environment will be provided for by protecting the productive capacity of land.

Statutory Framework

Relevant legislation applicable to Weeds Management is as follows:

Local Government Act

In accordance with the Local Government Act is it part of Council's role set down in the Council Charter to properly manage, develop, protect, restore, enhance and conserve the environment of which it is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development.

The Noxious Weeds Act 1993 - The objectives for this Act are as follows:

- To identify noxious weeds in respect of which particular control measures need to be taken.
- To specify those control measures.
- To specify the duties of public and private landholders as to the control of those noxious weeds.
- To provide a framework for the State-wide control of those noxious weeds by the Minister and local control authorities.

Other relevant legislation requiring consideration during weed management activities in Wollondilly Shire, include

- Environmental Planning and Assessment Act 1979
- Protection of the Environment Operations Act 1997
- Threatened Species Conservation Act 1995
- Native Vegetation Conservation Act 1997
- Pesticides Act 1999
- Fisheries Act 1994
- Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth)
- Occupational Health and Safety Act

Relevant Council Strategies include

- Biodiversity Strategy
- Wollondilly Vision 2025
- Wollondilly Roadside Reserve Strategy 2001

Constraints and Issues of Weed Management within Wollondilly Shire

- Council resources are limited and likely to remain that way in the term of this Strategy
- The size of the Local Government Area and the diversity of Stakeholders within it.
- Changing demographic of residents from rural/agricultural economic base to rural lifestyle base.
- Changing priorities of the community from agricultural weeds to environmental weeds.
- The need to participate in Regional Activities and priorities which may not be optimal for Councils weed management activities or priorities.
- The distribution of weed management activities within Councils Structure between various sections of Council.
- The variety of landscapes, waterways and significant biodiversity within the Shire requiring various and diverse weed management actions.
- Community expectations.
- Legislative obligations and constraints.

PART 2

Strategic Weed Management Activities

Categories of Action

The activities outlined in this Strategy are categorised into one of two types of action:-

1. Direct Action.
2. Indirect Action.

Direct Action incorporates physical works undertaken to ascertain the distribution of and treat noxious weeds. This includes

- the inspection of properties and enforcement of appropriate controls
- Identification of weed species on Council properties and the facilitation or implementation of treatments.

Indirect Action incorporates the use of land use planning activities within the LGA and the development of appropriate practices and advice. These include –

- requiring weed eradication and management plans and actions as a condition of consent
- implementing the targets of the Wollondilly Biodiversity Strategy
- promoting weed management through community activities such as Bushcare and Landcare
- promoting weed management through field days and press releases
- educating the community regarding weed management
- Promoting non invasive species through activities such as the Wollondilly Community Nursery.

Noxious Weeds Management

Description

Noxious Weeds Management involves the implementation of the Noxious Weeds Act 1993 within the Wollondilly LGA.

The regulation focus of the legislation is to ensure the control of declared noxious weeds in accordance with a specified control category.

All landowners, occupiers and land managing agencies have a responsibility to control noxious weeds.

Effects

The broad effects of uncontrolled weed species are outlined in Part A of this Strategy. The Wollondilly LGA is located in the headwaters of the Nepean and Georges Rivers and the Wollondilly River Catchment.

The geography of these catchments comprises of undulating lands incised by deep gorges. Cleared land within the LGA is used for a variety of agricultural and urban uses.

The impact of weed species within the LGA will primarily include the loss of agricultural productivity and the degradation of bushland areas

Long Term Goal

To minimise the detrimental effect of noxious plants on lands and activities within Wollondilly Shire.

Guiding Principles

- There is an obligation to control all declared noxious weed species in the Wollondilly LGA
- There is an obligation for owner/ occupiers to control noxious weeds on private properties.
- There is an obligation on Council to control weeds on property it manage.
- There is a requirement to prioritise noxious weed control according to their classification(ie class 1 to 5)
- Species that have achievable opportunities for eradication will be given management priorities.

Control Objectives

1. To prevent the further spread of declared noxious weed species to uninfected areas in the Wollondilly LGA and reduce densities.
2. To prevent and detect the introduction of noxious weed species into Wollondilly Shire.
3. To obtain maximum landholder co-operation and participating in the effective implementation of Wollondilly Council's Noxious Weeds Management Programme.

Control Issues

1. Major transport corridors occur though the LGA including rail and freeway links, these pose issues regarding the continuous spread of weed seed of vehicles.
2. The allocation of Council resources and programs focus on certain weeds does not encompass all weeds.
3. The need for further resources to be allocated for the control of weeds.
4. Co ordination between all stakeholders can be difficult, time ineffective and can often lead to ineffective treatment of weed infestations.

Means of Achievement

1. Conduct property inspections to determine the presence or otherwise of declared noxious weed infestations.
2. Issuing of Control Notices and/ or Presence Letters where appropriate
3. Incorporate the development of Weeds Management Plans into the statutory landuse planning process.
4. Integrate weeds management actions undertaken within the Wollondilly LGA with the activities of other agencies.

5. Increase the level of weeds awareness within the community through the dissemination of literature, press releases and attendance at local events.
6. Seek and secure external funding to assist with the management of Noxious Weed Species.
7. Promote land management practices which see the reduction of infestations in a sustainable approach using best management principles.
8. Monitor key performance indicators.
9. Managing/ controlling Noxious Weeds on Councils Properties on a programmed basis.

Environmental Weed Management

Description

Environmental weeds are plant species that pose a threat to natural environments within the Shire. These species are not declared noxious in Wollondilly LGA but **do** require management practices to ensure that their environmental impacts are minimized and their numbers and range are controlled within available resources.

Long term Goal

To minimise the impacts, range and numbers of potentially invasive, non indigenous plant species in the Wollondilly LGA.

Guiding Principals

- Environmental weeds do not have any legal control requirements unless through a weed management plan associated with a development application.
- New incursions of environmental weeds will receive priority for controls.
- Weed species posing immediate and/ or potentially significant damage to existing natural ecosystems, threatened ecological communities or threatened species habitats will be targeted.
- Weed species may be targeted in specific sub catchments rather than Shire wide.

Control Objectives

1. To reduce densities of existing weed species and prevent the further spread of weed species to infected areas in the Wollondilly LGA.
2. To prevent and detect the introduction of new plant species with the potential to become weeds into Wollondilly Shire and reduce their infestation.
3. To obtain maximum land holder and community cooperation and participation in the effective management of environmental weeds within Wollondilly LGA.

Control Issues

1. Size of the land, its terrain and the different dispersal and spreading mechanisms of weed species can make it difficult to control.
2. Priority of which weed to control, priorities may differ depending on the size of infestation, topography, health issues, land use, soil erosion issues and the Community demands.

Means of Achievement

1. Monitor the presence of potentially invasive plant species within Wollondilly
2. Incorporate the development of weed management plans and their implementation into the statutory land use planning process.
3. Increase the level of weed awareness within the community through the dissemination of literature, press releases and attendance at local events.
4. Seek and secure external funding to assist with the management of environmental weeds species.
5. Promote community activities that target specific environmental weed species Eg Bushcare/Landcare
6. Integrate weed management actions undertaken in Wollondilly LGA with the activities

Standard Considerations and Activities

- All weeds management activities are to incorporate “off target” protection methods- this is addressing all weed species including target species.
- All weed management activities proposed to be undertaken in the identified as Threatened Ecological Communities must only be undertaken with the appropriate approvals and with minimal impact methods.
- Mapping for weed incursions should be systematically undertaken.
- Bonds for weed control activities on private properties should be considered where appropriate.

Control

- Biological Controls, where available will be sought and distributed.
- Bush regeneration weed control techniques should be considered as the preferential methods where appropriate.
- Disposal of weed materials is to be through licensed waste management centres or through methods which ensure the non viability of weed materials.
- The regional context of all weed control activities should be considered.

Management

- Monitoring of weed regrowth should follow all weed control activities and re treatment undertaken when required.
- Sediment and erosion controls, mulching, direct seeding or follow up plantings must be considered for areas following weed control activities.
- Weed management should follow the principle of working from the isolated patches to the core infestation.

Partnerships

- Cooperation and coordination with the Rural Fire Service and the Rural Lands Protection Boards, Department of Environment and Conservation (DEC), Department of Natural Resources (DNR) and the Catchment Management Authority (CMA) abd Sydney Catchment Authority (SCA).
- Value adding of weed management activities through external grants and participation in

other projects should be considered where appropriate.

General Activities

- Put weed control into standard conditions as approved
- Seek and introduce biological controls as they become available
- Asses current noxious weed classifications and where appropriate re- classify in coordination with regional weeds committees and Department of Primary Industries
- Endorse and support regional wees plans where appropriate
- Participate in regional activities
- Conduct digital mapping of priority weed infestations
- Undertake professional development and training for Council Officers associated with weed management.
- Apply for external funding as appropriate.

PART 3
Administration

Introduction
Part 3 presents Wollondilly Shire Council's administrating the framework for implementation of the Strategy.

NSW Legislation grants powers which Council may use to give effect to its objectives and means of achievement. Many of these powers are exercised on behalf of Council by authorised persons.

Currently, enforcement is dealt with through the Environmental Services Section, and weed spraying on Council Roadsides and properties is organised through Technical Services and Operations.

Regional Participation

Participation in Regional weed management activities is to be undertaken.

Objectives of Regional Participation

- To enhance knowledge and skills in contemporary industry trends and weeds management methods.
- To maximise the potential for access to external regionally based funding.
- To coordinate weed management activities with adjoining Local Government Areas Regional Weed Control Plans.
- To ensure that the weed management activities are complimentary and coordinated to broader regional environmental planning eg. Catchment Action Plans
- Map and record infestations to quantify infestations and reduction targets as well as coordinate joint partnerships in weed reduction.

Community Education and Participation

Successful weed management requires commitment from both the council, the community and land holders. In order to achieve this following objectives are set.

Objectives of Community Education and Participation

- To educate the community and land holders of the issues associated with weeds in Wollondilly Shire and their appropriate controls.
- To re-enforce the obligation of owners/occupiers to control noxious weeds on private properties.
- To educate the community in the identification of weed species.
- To enlist community participation in the control of environmental weeds through Bushcare or Landcare activities. As well as State Government Incentives.

Reporting

Weed management activities are to be reported through,

- Annual State of the Environment Report for Wollondilly Shire
- Annual activity report to the Department of Primary Industries
- Council Quarterly Reports
- Councils Annual Report
- Reports as required by external funding Organisations.

Funding

Funding for the implementation of this Strategy will come from the following source:

1. General Rates Revenue.
2. Noxious Weeds Grant
3. External Funding as appropriate
4. Noxious Weed Notice Inquiry fees
5. Vegetation Management fees
6. Section 20 revenue from Noxious Weeds Act 1993
7. Levis under Local Government Act

Determining Priorities

The number of weed species found in Wollondilly is large yet the resources available for weed management activities are limited. In order to prioritise the weeds to be targeted in this Plan, the following criteria were used:

Noxious Weeds-

- Noxious Weed Classification.- The noxious Weed classifications range from 1 – 5 with 1 being the classification of weeds with the greatest potential impacts, with 5 being the classification of weeds with less potential to create impacts.
- Regional Priorities- Weeds which have been recognised regionally as being a priority within Regional Weed Control Plans
- Volume of Complaints- The number of complaints received at Council about particular weeds. Priority is given to weeds which are subject to larger numbers of complaints
- The Effective use of resources. Weeds which can be effectively and efficiently controlled with available resources are given priority with lower priority given to weeds which cannot be effectively controlled within current resources.
- Potential Impacts- Priority is given to weeds which have greater potential impacts on Endangered Ecological Communities and agricultural land.

Environmental Weeds-

- Regional Priorities-Weeds which have been recognised regionally as being a priority in Regional Weed Plans
- Volume of Complaints- The number of complaints received at Council about particular weeds. Priority is given to weeds which are the subject to larger numbers of complaints.
- The Effective use of resources. Weeds which can be effectively and efficiently controlled with available resources are given priority with lower priority given to weeds which cannot be effectively controlled within current resources.
- Potential Impacts- Priority is given to weeds which have greater potential impacts on Endangered Ecological Communities and agricultural land.

Methodology for Rationalising Councils Weed Management Activities

In order to set priorities for weed management which best utilize the limited resources available to Council, weeds have been evaluated and prioritised for various actions.

Noxious weeds were evaluated in order to prioritise their control through the following criteria

- Classification
- Regional priority
- Complaints
- Impacts on Endangered Ecological Communities
- Effective Control

Environmental weeds were evaluated in order to prioritise their control through the following criteria

- Regional priority
- Complaints
- Impacts on Endangered Ecological Communities
- Effective Control

Weed Management Responsibility Table

Issue	Environmental Services	Buildings and Recreation	Operational Services	Development Services	Administrative Services
Noxious Weed Act Compliance	- Control of noxious aquatic weeds on Rivers - Control at Landfill sites, effluent ponds and Nursery	- Control of noxious weeds on Council facilities and sportsgrounds and reserves	- Control of noxious weeds on roadsides, easements, quarries, stockpile sites, depots and village centres	- Control of noxious weeds through DA consent conditions and WEMPs	- Control of Noxious weeds on Council owned private properties
Noxious Weed Act Enforcement	- Private property inspections - Enforcement of control measures on private property				
Noxious Weed Grant Procurement	- Application and reporting on Noxious weed grants				
Regional Participation	- Participate in South West Sydney Regional Weeds Committee - Participate in State and Federal weed initiatives and programs				
Strategic Weed	- Monitor internal compliance to	Compliance to relevant areas	Compliance to relevant areas	Compliance to relevant areas	Compliance to relevant areas

Management	Weed Strategy -Compliance to relevant areas in Weed Strategy - Coordinate weed management and control within Council	within Weed Strategy	within Weed Strategy	within Weed Strategy	within Weed Strategy
Pesticide users Licence compliance	- Compliance to licence requirements	- Compliance to licence requirements	- Application for renewal, reporting and compliance		- Compliance to licence requirements
Pesticide Notification Plan	- Preparation and submission	-Development of pesticide use program - Compliance to plan	-Development of pesticide use program - Compliance to plan		-Development of pesticide use program - Compliance to plan
Weed Education	- conduct field days, attend events, source and distribute information, promotion and publicity				
Funding Procurement	- Source operating funds through Management Plan process - Source Grant funding for weed	- Source operating funds through Management Plan process	- Source operating funds through Management Plan process	- Source operating funds through Management Plan process	- Source operating funds through Management Plan process

	control projects				
Weed management of developments	- Assessment of Weed Eradication and Management Plans (WEMPs) - Inspection re. compliance to WEMPs			- Impose conditions on DAs re WEMPs - Enforcement of consent conditions re. WEMPs	
Environmental Weed Management	- Strategic control of environmental weeds in bushland or riparian areas	- Operational control of targeted environmental weeds on Council reserves, buildings and facilities	- Strategic and operational control of targeted environmental weeds on Council roadsides, quarries, easements, Depot, village centres and stockpile sites		- Operational control of targeted environmental weeds on Council owned private properties
Council projects	- Technical advise and weed control planning and monitoring - Engaging contractors	- planning, management and ongoing maintenance of weed control works	- planning, management and ongoing maintenance of weed control works		- planning, management and ongoing maintenance of weed control works
Community projects	- Technical advise and support of projects involving weed control	- Ongoing maintenance of weed control works	- Ongoing maintenance of weed control works		- Ongoing maintenance of weed control works
Bushcare activities	- Technical advise and weed control planning and monitoring	- Provision of sites for Bushcare activities involving weed control	- Provision of sites for Bushcare activities involving weed control		- Provision of sites for Bushcare activities involving weed control

	- Sourcing and facilitating resources towards Bushcare projects - Training and management of volunteers undertaking weed control - Engagement of contractors for Bushcare projects	- Maintenance of weed control activities after Bushcare activities are completed	- Maintenance of weed control activities after Bushcare activities are completed		- Maintenance of weed control activities after Bushcare activities are completed

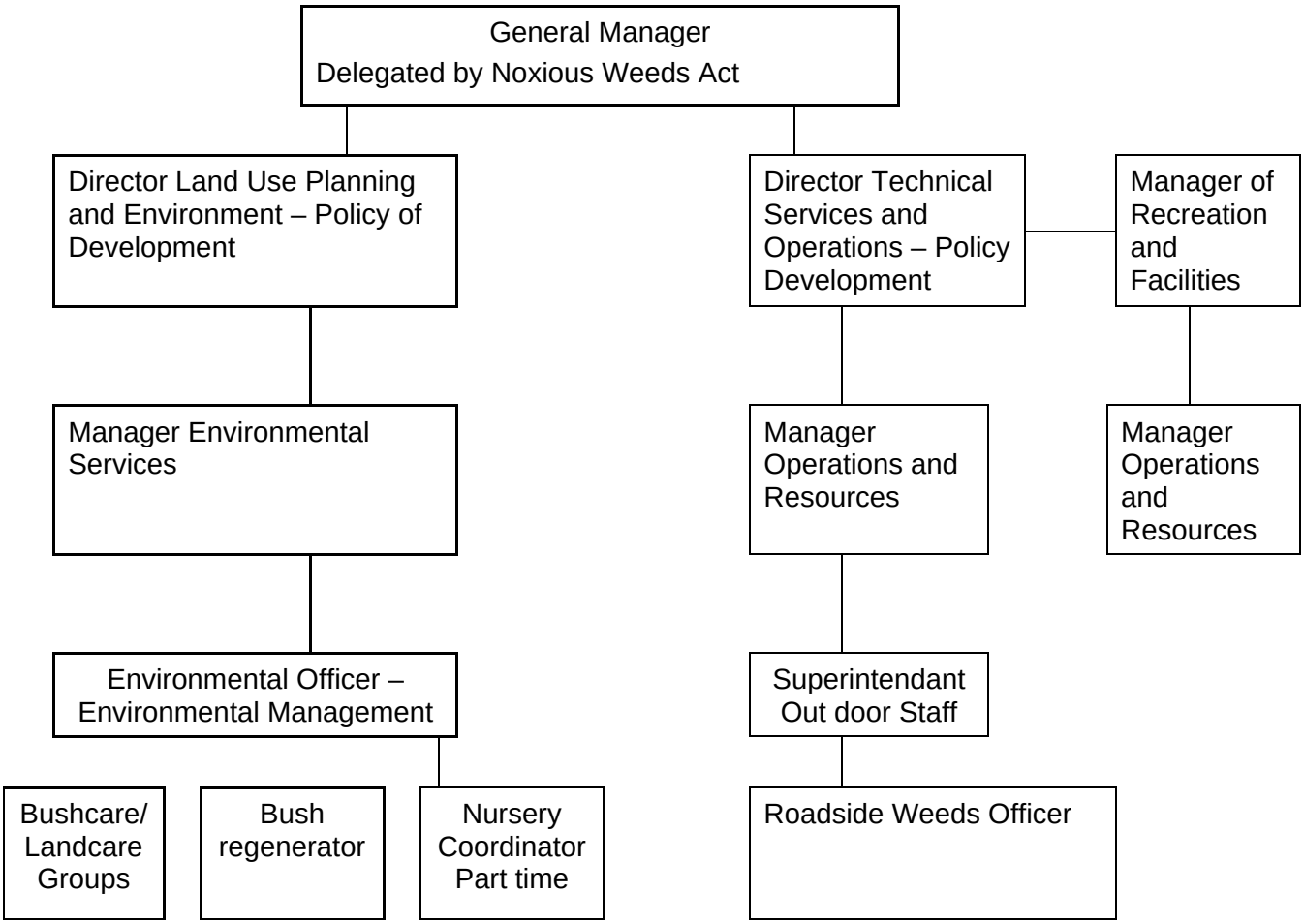
Appendices

1. Visions addressed by this Strategy
2. Council Structure and Relationship to Weed Management
3. Key Performance Indicators

Table 1 Visions Addressed through Strategy actions

Strategies	Wollondilly Vision 2025 Strategies											Biodiversity Strategy Targets						
Projects	S1.1	S1.2	S1.3	S1.4	S1.5	S2.1	S2.2	S2.3	S2.4	S2.5	S2.6	1	2	3	4	5	6	7
Weed inspections													✓					
DA referrals – Environment Plans	✓	✓	✓	✓	✓							✓		✓				✓
Weed management and Eradication plans	✓	✓	✓	✓	✓									✓				✓
Web site information																		
Wollondilly Weed Management Plan	✓	✓	✓	✓			✓	✓								✓	✓	
Catchment Management Authority Incentive Partnerships	✓	✓	✓	✓	✓	✓	✓	✓			✓		✓	✓	✓			✓
Sydney Catchment Authority Partnerships						✓	✓	✓	✓	✓	✓					✓	✓	
Rural Fire Service Partnerships		✓		✓														
Plants given away	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Support of Bush regeneration	✓	✓		✓									✓	✓	✓	✓	✓	✓
Threatened Species Management	✓		✓			✓	✓											
Grants for Crown lands	✓												✓					
Redbank Creek							✓	✓	✓	✓	✓							
Kennedy Creek Project							✓	✓	✓	✓	✓							
Bargo Privet Project							✓	✓	✓	✓	✓							
Myrtle Creek Removal Project							✓	✓	✓	✓	✓							
Werri Berri Creek							✓	✓	✓	✓	✓							
Mt Hunter Rivulet Privet Project							✓	✓	✓	✓	✓							
Review of LEP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Urban Privet Packs														✓		✓		

Council Structure and Relationship of Weeds Management



Key Performance Indicators

The following performance indicators have been developed to monitor the effectiveness or otherwise of the Strategy and its defined activities.

Activity	Performance Objective	Performance Indicators
Provide customer service and advice	To increase community awareness and engagement in weed management	▪ Press events ▪ Attendees at field events ▪ Education material distributed
Use of Planning instruments	▪ Increase in lands subject to Weed Management Plans and weed management assessment under the EPA Act and TSC Act	▪ Weed Management Plans supported through development consents ▪ Development applications assessed considering weed management issues
Noxious Weeds Management	▪ A reduction in the number of noxious species within Wollondilly Shire	▪ Properties inspected ▪ Control Notices and Presence Letters issued ▪ Complaints received ▪ Mapped infestations
Environmental Weed Management	▪ A reduction in the number, densities and range of actively growing environmental weed species within Wollondilly Shire	▪ projects undertaken targeting specific weed species ▪ Hectares cleared of environmental weeds ▪ Biological controls introduced ▪ Mapped infestations

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WEEDS OPERATIONAL PLAN (2007 – 2010) FOR THE WOLLONDILLY LOCAL GOVERNMENT AREA

May 07

WOLLONDILLY SHIRE COUNCIL

Operational Plan

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Operations Plan 2007 – 2010

This Operation Plan is divided into two categories

- Noxious weed management, and
- Environmental weed management

It is intended to provide specific actions for weeds according to their

- Threat to the environment and /or human health
- Current infestation levels
- Efficiency of controls considering resource availability

The plan has been developed as an annual operations plan reviewed annually after its adoption.

Noxious Weed Management

Guiding Principles

- There is an obligation to control all declared noxious weed species in the Wollondilly LGA
- There is an obligation for owner/ occupiers to control noxious weeds on private properties.
- There is an obligation on Council to control weeds on property it manage.
- There is a requirement to prioritise noxious weed control according to their classification(ie class 1 to 5)
- Species that have achievable opportunities for eradication will be given management priorities.
- Noxious weeds are described in appendix 1.

Environmental Weed Management

Guiding Principals

- Environmental weeds do not have any legal control requirements unless through a weed management plan associated with a development application.
- New incursions of environmental weeds will receive priority for controls.
- Weed species posing immediate and/ or potentially significant damage to existing natural ecosystems, threatened ecological communities or threatened species habitats will be targeted.
- Weed species may be targeted in specific sub catchments rather than Shire wide.
- Environmental weeds described in appendix 2.

Standard Considerations and Activities

- All weeds management activities are to incorporate “off target” protection methods (ie ensuring only the weed species targeted is effected by the control activity)
- All weed management activities proposed to be undertaken in the identified as Threatened Ecological Communities must only be undertaken with the appropriate approvals and with minimal impact methods.
- Mapping for weed incursions should be systematically undertaken.
- Bonds for weed control activities on private properties should be considered where appropriate.

Control

- Biological Controls, where available will be sought and distributed.
- Bush regeneration weed control techniques should be considered as the preferential methods where appropriate.
- Disposal of weed materials is to be through licensed waste management centres or through methods which ensure the non viability of weed materials.
- The regional context of all weed control activities should be considered.

Management

- Monitoring of weed regrowth should follow all weed control activities and re treatment undertaken when required.
- Sediment and erosion controls, mulching, direct seeding or follow up plantings must be considered for areas following weed control activities.
- Weed management should follow the principle of working from the isolated patches to the core infestation.

Partnerships

- Cooperation and coordination with the Rural Fire Service and the Rural Lands Protection Boards, Department of Environment and Conservation (DEC), Department of Natural Resources (DNR) and the Catchment Management Authority (CMA) abd Sydney Catchment Authority (SCA).
- Value adding of weed management activities through external grants and participation in other projects should be considered where appropriate.

General Activities

- Put weed control into standard conditions for developments where appropriate.
- Seek and introduce biological controls as they become available
- Asses current noxious weed classifications and where appropriate re- classify in coordination with regional weeds committees and Department of Primary Industries
- Endorse and support regional weeds plans where appropriate
- Participate in regional activities
- Conduct digital mapping of priority weed infestations
- Undertake professional development and training for Council Officers associated with weed management.
- Apply for external funding to undertake weed management activities as appropriate.

Determining Priorities

The number of weed species found in Wollondilly is large yet the resources available for weed management activities are limited. In order to prioritise the weeds to be targeted in this Plan, the following criteria were used:

Noxious Weeds-

- Noxious Weed Classification.- The noxious Weed classifications range from 1 – 5 with 1 being the classification of weeds with the greatest potential impacts, with 5 being the classification of weeds with less potential to create impacts.
- Regional Priorities- Weeds which have been recognised regionally as being a priority within Regional Weed Control Plans
- Volume of Complaints- The number of complaints received at Council about particular weeds. Priority is given to weeds which are subject to larger numbers of complaints
- The Effective use of resources. Weeds which can be effectively and efficiently

controlled with available resources are given priority with lower priority given to weeds which cannot be effectively controlled within current resources.

- Potential Impacts- Priority is given to weeds which have greater potential impacts on Endangered Ecological Communities and agricultural land.

Environmental Weeds

- Regional Priorities-Weeds which have been recognised regionally as being a priority in Regional Weed Plans
- Volume of Complaints- The number of complaints received at Council about particular weeds. Priority is given to weeds which are the subject to larger numbers of complaints.
- The Effective use of resources. Weeds which can be effectively and efficiently controlled with available resources are given priority with lower priority given to weeds which cannot be effectively controlled within current resources.
- Potential Impacts- Priority is given to weeds which have greater potential impacts on Endangered Ecological Communities and agricultural land.

Methodology for Rationalising Councils Weed Management Activities

Prioritising Noxious Weed Control Activities

Noxious weeds were evaluated through the following criteria

- Classification
- Regional priority
- Complaints
- Impacts on Endangered Ecological Communities
- Effective Control

This resulted in the following list of noxious weeds requiring actions from Council. All other noxious weeds are to be complaint based enforcement

Weed	**Classification** 1 -2 = 3pts 3 – 4 = 2 pts 5 = 1 pt	**Regional Priority** High – 3 pts Med – 2 pts Low – 1 pt	**Complaints** High – 3 pts Med – 2 pts Low 1 pt	**Impact on EECs** High – 3 pts Med – 2pts Low – 1pt	**Effective Controls** Manageable – 3pts Constant – 2 pts Ineffective – 1pt	**Total/15** Priority 1 – 11 -15 Priority 2 – 6 – 10 Priority 3 – 0 -5
Blackberry	2	2	3	3	2	12 – priority 1
Serrated tussock	2	2	1	2	3	10 – priority 2
St Johns Wort	2	1	2	1	3	9 – priority 2
Green Cestrum	2	2	1	1	3	9 – priority 2
Chilean Needle Grass	2	2	1	2	3	10 – priority 2
Boxthorn	2	2	1	2	2	9 – priority 2
Lantana	2	2	2	3	1	10 – priority 2
Salvinia	2	3	1	3	2	11 – priority 1
Alligator Weed	2	3	2	3	2	12 – priority 1

Priority 1 – Proactively undertake controls and enforcement

Priority 2 – undertake strategic controls and proactive enforcement

Priority 3 – Complaint based enforcement

Prioritising Environmental Weed Control

Weed	**Regional Priority** High – 3 pts Med – 2 pts Low – 1 pt	**Complaints** High – 3 pts Med – 2 pts Low 1 pt	**Impact on EECs** High – 3 pts Med – 2pts Low – 1pt	**Effective Controls** Manageable – 3pts Constant – 2 pts Ineffective – 1pt	**Total/15** Priority 1 – 11 -15 Priority 2 – 6 – 10 Priority 3 – 0 -5
Privet	3	3	3	2	13
Fireweed	1	2	1	1	8
African Olive	3	2	3	2	13

Target Weeds by Locality

The following table is derived from the number of enquiries, complaints and observed recordings of weeds in the Shire. The following weeds have been outlined as the most problematic in their distribution and impacts. The table simply lists the presence of where a weed has been recorded. Similarly it shows where the presence of a weed has not been identified before, and therefore action can be taken to reduce the impact in areas with new infestations.

The following map shows the townships in relation to the local government area.

The older established areas which have been used for agricultural pursuits generally have the greater variety of weeds.

The shaded cells indicate that Weed management planning and activities should take into account those weeds when dealing with the relevant village/ locality.

The unshaded cells indicate that the particular weed is not presently a recognised problem in that locality. Should the particular weed be identified in that locality, prompt action should be taken to control its presence and to maintain that locality in a manner which will control or reduce the further spreading of the weed.

Aquatic weeds such as Alligator Weed, Salvinia and Water Hyacinth are not included in this table as they can potentially infest and negatively impact any watercourse within the Shire. Aquatic weed incursions should always be regarded as having a high priority in terms planning, management and actions

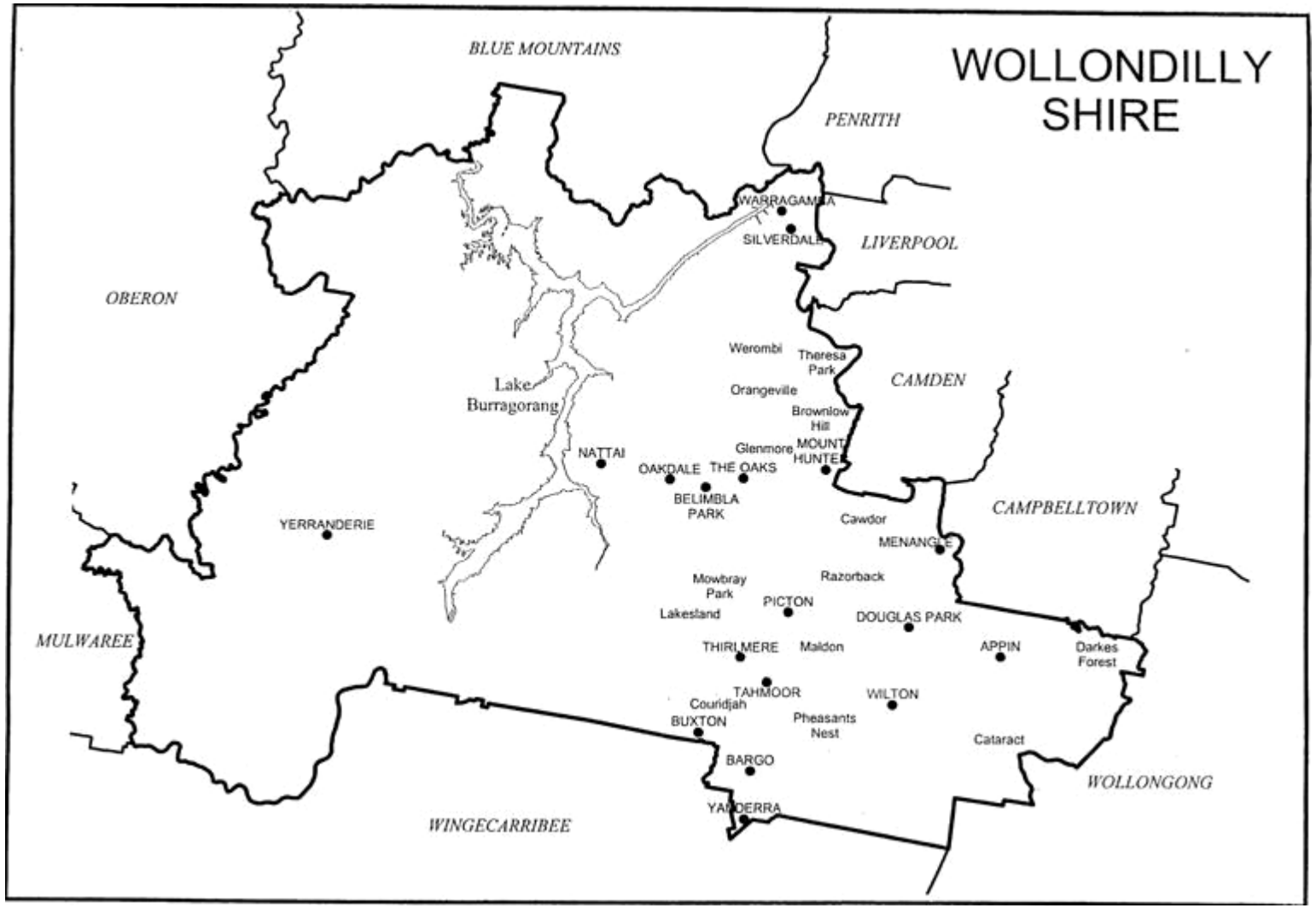
Table 2: Target Weeds and their presence by locality – Draft Wollondilly Weed Strategy 2005 - 2008

Location	Present Weeds									
	St John Wort	Green Cestrum	Serrated Tussock	Blackberry	Chilean Needle Grass	Boxthorn	Lantana	Privet (Environmental weed)	Fireweed (environmental Weed)	African Olive (environmental Weed)
Appin				*		*	*		*	
Darkes Forest				*		*	*			
Wilton	*		*	*	*	*		*	*	
Pheasants Nest	*		*	*	*	*		*	*	
Cataract	*		*	*		*		*	*	
Douglas Park	*		*	*	*	*	*	*	*	*
Maldon	*		*	*	*	*	*	*	*	*
Picton	*		*	*	*	*	*	*	*	*
Razorback	*		*	*	*	*	*	*	*	*
Menangle	*		*	*	*	*	*	*	*	*
Cawdor	*		*	*	*	*	*	*	*	*
The Oaks	*	*		*	*	*	*	*	*	*
Mount Hunter	*	*		*	*	*	*	*	*	*
Glenmore		*		*	*	*	*	*	*	*
Brownlow Hill		*		*	*	*	*	*	*	*
Orangeville		*		*	*	*	*	*	*	*
Theresa Park		*		*	*	*	*	*	*	*
Werombi		*		*	*	*	*	*	*	*
Silverdale		*		*	*	*	*	*	*	*
Warragamba		*		*	*	*	*	*	*	*

Location	Present Weeds									
	St John Wort	Green Cestrum	Serrated Tussock	Blackberry	Chilean Needle Grass	Boxthorn	Lantana	Privet (Environmental weed)	Fireweed (environmental Weed)	African Olive (environmental Weed)
Nattai			*	*						
Oakdale			*	*	*			*	*	
Belimbla Park				*	*	*		*	*	
Mowbray Park				*		*		*	*	
Lakesland	*			*				*		
Thirlmere	*		*	*				*	*	
Couridjah	*		*	*				*		
Buxton	*			*				*	*	
Bargo			*	*	*			*	*	
Yanderra			*	*					*	
Yerranderie			*			*	*			

Map 1

Wollondilly Local Government Area



Noxious Weed Annual Operations Plan 2006 - 2009

Period	Direct Action	Indirect Action
Sept – Nov	**Private Property** inspections and issuing of Control Notices for; • Blackberry • St Johns Wort • Serrated Tussock • Alligator Weed Control on **Council managed property** for; • Blackberry • St Johns Wort • Serrated Tussock • Alligator Weed	Assess Development Applications Attend 1 field day Conduct 1 promotion Attend 1 regional meeting Release 1 biological control Review noxious weed classifications Commence Blackberry Control Project Support Bushcare/Landcare Activities Undertake 1 training activity
Dec – Feb	Private Property inspections and issuing control notices for; • Blackberry • Boxthorn • Serrated tussock • Alligator weed Control on **Council managed property** for; • Blackberry • St Johns Wort • Serrated Tussock • Alligator Weed	Assess Development Applications Conduct 1 promotion Attend 1 regional meeting Release 1 biological control Commence Blackberry Control Project Support Bushcare/Landcare Activities Undertake 1 training activity Submit 1 application for funding
March – May	**Private Property** inspections and issuing of Control Notices for; • Blackberry • St Johns Wort • Serrated Tussock • Alligator Weed Control on **Council managed property** for; • Blackberry • St Johns Wort • Serrated Tussock • Alligator Weed	Assess Development Applications Attend 1 field day Conduct 1 promotion Attend 1 regional meeting Release 1 biological control Review noxious weed classifications Commence Blackberry Control Project Support Bushcare/Landcare Activities Undertake 1 training activity Submit 1 application for funding

June - Aug	**Private Property** inspections and issuing of Control Notices for; • Blackberry • St Johns Wort • Serrated Tussock • Alligator Weed Control on **Council managed property** for; • Blackberry • St Johns Wort • Serrated Tussock • Alligator Weed	Assess Development Applications Attend 1 field day Conduct 1 promotion Review noxious weed classifications Support Bushcare/Landcare Activities Undertake 1 training activity

Noxious Weed Annual Operations Plan 2006 - 2009

Period	Direct Action	Indirect Action
Sept –Nov	Identify and treat roadside infestations of; • Wild tobacco • Polygala • Boneseed • Gleditsia • Privet sp • African Olive • Mother of Millions	Assess Development Applications Conduct 1 promotion Review weed Classifications Support Bushcare/Landcare activities
Dec – Feb	Identify and treat roadside infestations of- • Madiera Vine • Portugese Broom (polygala) •	Assess Development Applications Conduct 1 promotion Review weed Classifications Support Bushcare/Landcare activities
March – May	Identify and treat roadside infestations of- • Cotoneaster sp • Pyracantha sp • Privet sp (Stonequarry catchment only)	Assess Development Applications Conduct 1 promotion Review weed Classifications Support Bushcare/Landcare activities
June - Aug	Identify and treat roadside infestations of- • Acacia bailyana • Privet sp (Stonequarry catchment only) • African Olive	Assess Development Applications Conduct 1 promotion Review weed Classifications Support Bushcare/Landcare activities

Noxious Weeds Act 1993

Background

From 1st March 2006, the new Amendments to the *Noxious Weeds Act 1993* came into force. The most significant change is new control categories. All of the previous "W" categories for noxious weeds have been reclassified into weed classes, with each class having a specific objective for controlling this weed.

Class 1 - State Prohibited Weeds.

"*The plant must be eradicated from the land and the land must be kept free of the plant*."

The control objective for weed control class 1 is to prevent the introduction and establishment of those plants in NSW.

Class 2 - Regionally Prohibited Weeds.

"*The plant must be eradicated from the land and the land must be kept free of the plant*."

The control objective for weed control class 2 is to prevent the introduction and establishment of those plants in parts of NSW.

Class 3 - Regionally Controlled Weeds.

"The plant must be fully and continuously suppressed and destroyed."

The control objective for weed control class 3 is to reduce the area and the impact of those plants in parts of NSW.

Class 4 - Locally Controlled Weeds

"The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority."

The control objective for weed control class 4 is to minimise the negative impact of those plants on the economy, community or environment of NSW.

Class 5 - Restricted Plants

"The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with."

The control objective for weed control class 5 is to prevent the introduction of those plants into NSW, the spread of those plants within NSW or from NSW to another jurisdiction. The aim is to prevent their sale, propagation and distribution.

A comprehensive list (known as Order 20) of the new noxious weed classes for all local government areas in NSW is found at the web address http://www.agric.nsw.gov.au/reader/weeds/order19.pdf as found in Appendix A of this Strategy.

A number of new weeds have been added to the statewide list of noxious weeds, and these mainly include aquatic weeds and plants available for sale that are either, not known to be present or not widely spread throughout the Sydney region.

Class 4 weed control plans

A requirement of the amended Act is that Council develops an action plan for each of the noxious weeds listed as a Class 4. Class 4 weeds are generally widespread weeds in NSW. The Class 4 category provides local control authorities in NSW with much more flexibility in specifying how these weeds will be controlled in various situations. The Class 4 plan needs to specify (a) the measures for how the growth and the spread of a weed is to be controlled and (b) the legal and known methods for controlling this weed.

The plans are also required to be put on public display and will be posted on the Sydney Weeds Committees website www.sydneyweeds.org.au.

Class 4 noxious weeds listed in the Wollondilly have had control objectives defined for them and are attached in Appendix B.

Once the Class 4 management plans are endorsed by Wollondilly Shire Council the Class 4 plans become legally enforceable. The Class 4 Plan document can be changed at any time, if needed. Each time it is changed it needs to be republished.

Enforcement of the Act

As of 1st March 2006, Councils can immediately start enforcing control of Class 1,2 and 3, and prevention of Class 5 noxious weeds. Enforced control of Class 4 weeds commences once the Class 4 control plans are placed by Wollondilly Shire Council on public display, comments received then endorsed by council.

Financial implications and staff resourcing

It is not anticipated that the changes will significantly increase the current workload of staff enforcing the Act.

Appendix A

Weeds Declared in the Whole of State New South Wales and Wollondilly Local Government Area

Common name	Scientific name	Class
African feather grass	Pennisetum macrourum	5
African turnip weed	Sisymbrium runcinatum	5
African turnip weed	Sisymbrium thellungii	5
Anchored water hyacinth	Eichhornia azurea	1
Annual ragweed	Ambrosia artemisiifolia	5
Arrowhead	Sagittaria montevidensis	5
Artichoke thistle	Cynara cardunculus	5
Athel tree/Athel pine	Tamarix aphylla	5
Bear-skin fescue	Festuca gautieri	5
Black knapweed	Centaurea nigra	1
Blackberry	Rubus fruticosus aggregate species except cultivars	4
Bridal creeper	Asparagus asparagoides	5
Broomrapes	Orobanche species except the native O. cernua variety australiana and O. minor	1
Burr ragweed	Ambrosia confertiflora	5
Cabomba	Cabomba caroliniana	5
Cayenne snakeweed	Stachytarpheta cayennensis	5
Chinese violet	Asystasia gangetica subspecies micrantha	1
Clockweed	Gaura lindheimeri	5
Clockweed	Gaura parviflora	5
Corn sowthistle	Sonchus arvensis	5
Dodder	All Cuscuta species except the native species C. australis, C. tasmanica and C. victoriana	5
East Indian hygrophila	Hygrophila polysperma	1
Espartillo	Achnatherum brachychaetum	5
Eurasian water milfoil	Myriophyllum spicatum	1

Common name	Scientific name	Class
Fine-bristled burr grass	Cenchrus brownii	5
Fountain grass	Pennisetum setaceum	5
Gallon's curse	Cenchrus biflorus	5
Glaucous star thistle	Carthamus glaucus	5
Golden thistle	Scolymus hispanicus	5
Harrisia cactus	Harrisia species	4
Hawkweed	Hieracium species	1
Horsetail	Equisetum species	1
Hymenachne	Hymenachne amplexicaulis	1
Karoo thorn	Acacia karroo	1
Kochia	Bassia scoparia except B. scoparia subspecies trichophylla	1
Lagarosiphon	Lagarosiphon major	1
Lantana	Lantana species	5
Long-leaf willow primrose	Ludwigia longifolia	5
Mexican feather grass	Nassella tenuissima	1
Mexican poppy	Argemone mexicana	5
Miconia	Miconia species	1
Mimosa	Mimosa pigra	1
Mossman River grass	Cenchrus echinatus	5
Onion grass	All Romulea species and varieties except R. rosea var. australis	5
Oxalis	All Oxalis species and varieties except the native species O. chnoodes, O. exilis, O. perennans, O. radicosa, O. rubens, and O. thompsoniae	5
Parthenium weed	Parthenium hysterophorus	1
Pond apple	Annona glabra	1
Prickly acacia	Acacia nilotica	1
Prickly pear	Cylindropuntia species	4
Prickly pear	Opuntia species except O. ficus-indica	4
Red rice	Oryza rufipogon	5
Rhus tree	Toxicodendron succedaneum	4

Common name	Scientific name	Class
Rubbervine	Cryptostegia grandiflora	1
Sagittaria	Sagittaria platyphylla	5
Sand oat	Avena strigosa	5
Senegal tea plant	Gymnocoronis spilanthoides	1
Siam weed	Chromolaena odorata	1
Smooth-stemmed turnip	Brassica barrelieri subspecies oxyrrhina	5
Soldier thistle	Picnomon acarna	5
Spotted knapweed	Centaurea maculosa	1
Texas blueweed	Helianthus ciliaris	5
Water caltrop	Trapa species	1
Water lettuce	Pistia stratiotes	1
Water soldier	Stratiotes aloides	1
Willows	Salix species except S. babylonica, S. x reichardtii, S. x calodendron	5
Witchweed	Striga species except native species and Striga parviflora	1
Yellow burrhead	Limnocharis flava	1
Yellow nutgrass	Cyperus esculentus	5
African boxthorn	Lycium ferocissimum	4
Alligator weed	Alternanthera philoxeroides	3
Bathurst/Noogoora/Californian/cockle burrs	Xanthium species	4
Chilean needle grass	Nassella neesiana	4
Columbus grass	Sorghum x almum	4
Giant Parramatta grass	Sporobolus fertilis	3
Golden dodder	Cuscuta campestris	4
Gorse	Ulex europaeus	3
Green cestrum	Cestrum parqui	3
Hygrophila	Hygrophila costata	2
Johnson grass	Sorghum halepense	4
Long-leaf willow primrose	Ludwigia longifolia	3
Long-style feather grass	Pennisetum villosum	4
Pampas grass	Cortaderia species	3

Common name	Scientific name	Class
Paterson's curse, Vipers bugloss, Italian bugloss	Echium species	4
Salvinia	Salvinia molesta	3
Serrated tussock	Nassella trichotoma	4
Spiny burrgrass	Cenchrus incertus	4
Spiny burrgrass	Cenchrus longispinus	4
St. John's wort	Hypericum perforatum	4
Sweet briar	Rosa rubiginosa	4
Water hyacinth	Eichhornia crassipes	3

Appendix B

Class 4 Management Plan – Control Measures

Common Name	Scientific Name	Area	Control Measures Specified
African boxthorn	Lycium ferocissimum	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.
Bathurst/Noogoora/ Californian/cockle burrs	Xanthium species	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.
Blackberry	Rubus fruticosus aggregate species	Whole of Council Area	Reduce the number and distribution by 25 % of the original infestation per growing season. Prevent from producing seed and spreading and the plant may not be sold, propagated or knowingly distributed.
Chilean needle grass	Nasella neesiana	Whole of Council Area	Reduce the number and distribution and prevent from producing seed and spreading and the plant may not be sold, propagated or knowingly distributed.
Columbus grass	Sorghum x almum	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.
Golden dodder	Cuscuta campestris		Reduce the number by 50% of the original infestation per growing season. Prevent from producing seed and spreading.
Harrisia cactus	Harrisia species	Whole of Council Area	Reduce the number and distribution 50% of original distribution per growing season and prevent from producing seed and spreading and the plant may not be sold, propagated or knowingly distributed.
Johnson Grass	Sorghum halepense	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.
Long style feather Grass	Pennisetum villosum		Reduce the number by 25% of the original infestation per growing deason. Prevent from producing seed and spreading.
Paterson's curse, Vipers bugloss, Italian bugloss	Echium species	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.
Prickly pear	Cylindropuntia species and Opuntia species except O. ficus-indica	Whole of Council Area	Reduce the number and distribution by 25% of the original infestation per growing. Prevent from producing seed and spreading and the plant may not be sold, propagated or knowingly distributed.
Rhus tree	Toxicodendron succedanea	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.
Serrated tussock	Nasella trichotoma	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.

Common Name	Scientific Name	Area	Control Measures Specified
Spiny burgrass	Cenchrus incertus, Cenchrus longispinus	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.
St Johns Wort	Hypercium perforatum		Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.
Sweet briar	Rosa rubiginosa	Whole of Council Area	Reduce the number by 25% of the original infestation per growing season. Prevent from producing seed and spreading.

Appendix C

Weed Control Plans

Common Name: Alligator weed

Botanic Name: Alternathera philoxeroides

Classification: 3

Action required: Preventing the onset of alligator weed is most essential; this may include preventing new plant material from entering Australia, using weed hygiene protocols, such as washing contaminated equipment, and also educating people to recognise it and respond appropriately.

Aim

To reduce and eradicate all infestations of Alligator Weed**.**

Infestation Details (sub Catchments)

Both Aquatic and terrestrial forms of Alligator Weed have been reported in the Shire on both private and public land,

Core: Denmead Street Thirlmere, Eagle Creek Theresa Park (McKee Road)

Medium: Nepean River (Aquatic, growing in river between Menangle and Wallacia), Tahmoor

Isolated: The Oaks

Control Plan

Aquatic: It is essential that alligator weed is detected and eradicated early as possible. This may include, maintenance of quarantine to prevent introduction.

Public Land: Preventing the introduction of alligator weed through preventing weeds from entering public lands as well as the implementation of cleaning measures in rubbish etc.

Private Property: Enhanced awareness and education to reduce risk of spread, as well as regular inspections of suspected properties.

Schedule:

Resources

Noxious weeds Officer, vehicle, boat, outboard motor, trailer, operational staff, OH&S

Indicators

All private property terrestrial infestations eradicated or reduced by 90%

Aquatic infestations contained and managed.

General

A licence is required for the chemical treatment of Alligator Weed in residential areas. Negotiations with Department of Primary Industries should be undertaken as there is currently no chemical registered for use.

Situation	Herbicide	Rate	Comments
Floating form only	Glyphosphate 360g/L	1.0L in 100L of water	Actively growing from summer through winter
Terrestrial situations only	Metsulfuron methyl	10g in 100L of water	A minimum of 2 years spraying is required

Common Name: Spiny burrgrass, Johnson Grass, Columbus Grass, Giant Parramatta Grass, Gorse, Rhus Tree, Dodder

Botanic Name: Various

Classification: 4

Action required: The key to controlling spiny burrgrass is to prevent seeding and exhaust any reserves of seed in the soil. This can be achieved via methods such as cultivation, increasing competition through good cropping and pasture management (seeding rates, time of sowing, fertiliser application and time of sowing need to be monitored), herbicide application, good hygiene practices such as cleaning of machinery and vehicles before entering the property and also not buying stock from burr infested areas.

Aim

To eradicate any new infestations of these weeds as they occur

Infestation Details (sub Catchments)

Core: None known

Medium: None known

Isolated: None known

Control Plan

Public Land: Undertake cultivation procedures on affected lands; replace the spiny burgrasses with more adequate pastures such as Rhodes grass, premier digit and consol lovegrass, chemical control,

Private Property: Education initiatives to ensure that land owners are aware of adequate hygiene practices and prevention of the weed.

Schedule: Hygiene procedures need to be ongoing, a period of winter cropping incorporating an appropriate winter crop and a period of summer cropping incorporating an appropriate summer crop, non-selective knock down herbicides can be applied to germinated seedlings,

Resources: Noxious weeds officer,

Indicators

General

Situation	Herbicide	Rate	Comments
Actively growing plants	Glyphosphate 360g/L	500-700ml in 100L of water or 2.0 to 3.0 L per hectare	Apply before seeding, application in non-crop areas and roadsides
Actively growing plants	Fluazifop	750ml per hectare	Growing actively at the stage 3-5 leaf stage and before tillering commences.

Common Name: Pampas Grass

Botanic Name: Cortaderia Spp

Classification: 4

Action required: Permanent mechanical removal is recommended wherever possible. Grubbing of plants particularly when small as well as the removal of seeds are the most effective methods of removal in high risk areas. The use of herbicides may also be used occur, in eliminating small plants. Another method may be the prevention of seeding, as pampas grass is a prolific seeder, and grazing may also be used as it prevents the development of flowers and seed set.

Aim

To eradicate all known infestations by July 2007

Infestation Details (sub Catchments)

Core: None known

Medium: Cataract River Catchment (F5 freeway corridor and Douglas Park Drive) Cataract Scout Park

Isolated: Shire wide: (As ornamental plantings)

Control Plan

Public Land: Permanent removal of all flowers at the roots, as well as the elimination of seeds through grazing. The use of a fertiliser may also assist in eliminating small plants.

Private Property: Inspections and issuing of control notices. There is also a need to educate land holders as a measure of ensuring that seeding of the plant is minimal.

Schedule: Between September and May each year

Resources: Noxious Weeds Officer, Environment Officer,

Indicators

All known pampas grass has been eradicated

General

Situation	Herbicide	Rate	Comments
Actively growing plants	Glyphosphate 360g/L	1.0 or 1.3 L in 100 L of water	Spring to autumn, use higher rates on plants over 1m high

Common Name: Water Hyacinth

Botanic Name: Eichhornia crassipes

Classification: 3

Action required: To eradicate all known infestation of this weed from the Shire. This may include Mechanical Control (removal by hand or machine), Biological control (the use of 2 weevil species *Neochetina eichhorniae* and *Neochetina bruchii,* as well as 2 moth species *Niphograptha* and *Xubida infusella)*, herbicide control (diquat), integrated (control combination of mechanical, biological and herbicides).

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: None known

Medium: None known

Isolated: Scotcheys Creek (Warradale rd) and Dogtrap Creek (Great Southern rd) catchments

Control Plan

Public Land: Herbicide treatment of weeds with diquat at a concentration of 400ml/100l plus surfactant.

Private Property: Inspect known infestation and issue control notices as appropriate

Schedule: Weed must be checked for regularly and must be removed as soon as possible

Resources: Noxious weeds officer

Indicators

All known infestations are controlled.

General

Situation	Herbicide	Rate	Comments
For all situations	Diquat (Reglone)	400ml in 100L of water or 5.0-10.0 L per hectare	Add Agral 600 wetter; use clean water for best results
For all situations	Diquat (vegetrol)	4.0 L in 100 L of water or 50-100 L per hectare	Higher rate if dense weed or dirty water
Prior to flowering	Amitrole 250g/L	280ml to 100L of water	
When actively growing at or beyond the early bloom stage	Glyphosphate 360g/L	1.0-1.3L in 100L of water or 6.0-9.0 L per hectare	Use higher rate on dense infestations

Common Name: St Johns Wort

Botanic Name: Hypercium perforatum

Classification: 4

Action required: Preventative methods are the best methods of action. It must be ensured that the weed is identified early and is regularly looked for along fences, boundaries, roadsides, or reserves and if found that immediate action must be taken to remove it. The weed can be destroyed through burning, hand weeding, and a number of herbicides, spot-spraying, boom-spraying and rotary wipers.

Aim

To remove all known infestations of this weed from the shire.

Infestation Details (sub Catchments)

Core: Nepean River Catchment (Wilton Park Road, Menangle Road, Wilton, Douglas Park)

Medium: Racecourse Creek Catchment (Remembrance Drive Razorback)

Isolated: Flaggy Creek Catchment

Control Plan

Public Land: Remove weed through the use of burning, hand weeding and herbicides

Private Property: Inspect known infestation and issue control notices where necessary

Schedule: The weed must be checked for regularly on public and private grounds. Herbicide application typically occurs during the warmer months.

Resources: Noxious weeds officer

Indicators

All known infestations are controlled and treated annually

General

Situation	Herbicide	Rate	Comments
Full leaf to ripe fruit prior to leaf fall	Triclopyr + picloram	350 or 500ml in 100L of water, or 2.0-4.0L per hectare	Use higher rate on bushes over 1.5 metres high
Spring to mid summer application	Fluroxypyr 200g/L	500ml in 100L of water or 3.0L per hectare	Boom application, observe withholding period
Flowering to post flowering	Glyphosphate 360g/L	500ml in 100L of water or 3.0L per hectare	Apply November to May
Before flowering	2,4-D ester 800g/L	280-400ml in 100L of water or 2.8-4.0L per hectare	Apply October to December when the plants are less that 40cm high
Before flowering	2,4-D LV ester 400g/L	5.5 to 8.7L per hectare	October to December
Actively growing	Glyphosphate + metsulfuron	1 measured pack in 100 L of water	Spring to summer
	Metsulfuron methyl + Glyphosphate 360g/L	10g + 200ml in 100L of water	Spray to wet but not to cause runoff

Common Name: African Boxthorn

Botanic Name: Lycium ferocissimum

Classification: 4

Action required: The best form of controlling African Boxthorn is through prevention**,** they should be treated when small to prevent infestations. Mechanical control (such as stickraking, dozing or blade ploughing) can be used to remove strands of boxthorn.

In mechanical treatment, the top growth should be removed as well as, as many of the roots as possible. The removed weeds should then be burnt. African boxthorn is also susceptible to competition from other plants, the planting of native vegetation or native perennial pastures are effective in controlling African boxthorn.

Herbicide treatment can also be used as a control method. These include foliar spraying (spraying the weed), basal bark treatment (spraying the complete base of every stem), cut stump treatment (cut each stem off at 15 cm and apply herbicide), root application (apply the herbicide from under the weed).

Aim

To eradicate all known infestations of this weed from the Shire

Infestation Details (sub Catchments)

Core: Nepean River and Navigation Creek Catchments (Menangle area), Matahil Creek Catchment (Cawdor rd)

Medium: Mt Hunter Rivulet Catchment

Isolated: Shire wide

Control Plan

Public Land: Use the suggested mechanical herbicide methods of removal if identified early, if identified later, herbicide treatment may be necessary

Private Property: Inspect known sites of infestation and issue control notice

Schedule: Herbicide application must occur whenever the weed is present

Resources: Noxious weeds officer

Indicators

All known infestations are controlled.

General

Herbicide applications are outlined below:

Situation	Herbicide	Rate	Comments
Apply when bushes have good leaf cover, growth and no leaf fall	Triclopyr + picloram	500ml in 100L of water	
Apply at any stage	Access	1.0L in 60L of diesel	Apply as a basal bark/ cut stump application
Small bushes only	Picloram +2,4-D	1.3L in 100L of water	Spray soils to drip line. Thorough

Situation	Herbicide	Rate	Comments
			coverage is essential
Young and mature bushes	Glyphosphate 360g/L	700ml to 1.0L in 100L	Low rate on young bushes and high water rate on mature bushes
All year round	Triclopyr	1.0L in 30L of diesel	Cut stump/ basal bark application
All year round	Tebuthiuron	2g per square metre	Do not apply near desirable trees
Bushes up to 3m tall	Hexazinone	4ml per spot	One spot per metre height. Do not apply near desirable trees

Common Name: Salvinia

Botanic Name: Salvinia molesta

Classification: 3

Action required: Eradication of the Salvinia weed is rarely achievable; however, Salvinia can be controlled through the use of biological control. Successful biological control of the Salvinia weed has been achieved in some areas through the use of the weevil *cyrtobagous salviniae*.

Mechanical methods such as the use of floating booms or nets on rivers are also commonly used to limit the spread of the weed. Mechanical removal of the weed is also a vital control method. The use of herbicides to control Salvinia is also common but depends on the character of the waterways in which they are located.

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: None known

Medium: None known

Isolated: None known

Control Plan

Public Land: Biological methods may be used to control the weed. One of the most cost effective methods of control would include the use of floating booms or nets to prevent spread or mechanical removal.

Private Property: Inspect known infestation and issue control notices

Schedule: Manual removal must be undertaken when the levels of Salvinia in a waterway become so great that the ecological health of the waterway is affected.

Resources: Noxious weeds officer, contractors used for manual removal

Indicators

All known infestations are controlled.

General

Situation	Herbicide	Rate	Comments
General	Diquat (Reglone)	400ml in 100L of water or 5.5 to 10.0L per hectare	Spray to wet all foliage thoroughly, add Agral 600
General	Diquat (Vegetone)	4.0L in 100L of water or 50-100L per hectare	Apply as an overall spray, thoroughly wet foliage
Aquatic situations	Glyphosphate 360g/L	1L in 100L of water	Overall spray
Free floating plants	Orange Oil	1L in 100L of water	Spray directly onto free floating plants

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Common Name: Sweet Briar

Botanic Name: Rosa rubiginosa

Classification: 4

Action required: Non chemical options typically include mechanical removal such as the use of grubbing or grazing with goat control. A number of herbicides may also be used to control Sweet Briar.

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: Matahill Creek Catchment (Cawdor rd, Cawdor)

Medium: Nepean River and Navigation Creek Catchments (Menangle area)

Isolated: Northern part of the shire

Control Plan

Public Land: Apply means of chemical removal such as grubbing or grazing to minimise infestations, as well as herbicide application.

Private Property: Inspect known infestation and issue control noticed

Schedule:

Resources: Noxious weeds officer

Indicators

All infestations on public property are treated. Private property infestations are reduced.

General

Situation	Herbicides	Rate	Comments
Full leaf to ripe fruit prior to leaf fall	Triclopyr + picloram	350 or 500ml in 100L of water or 1L in 60L of diesel	Use higher rate on bushes over 1.5 metres high
General	Triclopyr	1L in 30L of diesel	Basal bark/ cut stump application
Full leaf	Picloram + 2,4-D	650ml 100L of water	Overall spray
Spray to wet all foliage, from late flowering to leaf fall.	Glyphosphate 360g/L	1.5-2.0L in 100L of water	Use higher rates on bushes over 1.5 metres high.
Apply to actively growing bushes at the point of run	Metsulfuron methyl	10g in 100L of water	Do not apply after end of February.
Plants ready to flower	Glyphosphate + metsulfuron	1 measured pack in 100L of water	Apply as close to flowering as possible
Generally used for larger more disruptive forms of the weeds	Hexazinone	4ml per spot	One spot per metre of height, do not apply near desirable trees

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Common Name: Green Cestrum

Botanic Name: Cestrum Parqui

Classification: 3

Action required: Typical management actions include mechanical control (digging up the weeds by hand and removing all plant material, including roots), chemical controls (involves spot spray applications of herbicides), cultural controls (involves the use of mulch to cover and suppress seedlings). After the weeds have been removed by mechanical methods, a follow up program may be required until total eradication is achieved, due to the fact that regrowth can occur quickly from stumps or roots not removed.

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: None known

Medium: None known

Isolated: Flaggy creek and Mt Hunter Rivulet Catchments

Control Plan

Public Land: Remove small areas manually and larger areas through mechanical, herbicide or integrated uses. A follow up program must be implemented

Private Property: Ensure that adequate fencing is present to prevent farm stock from making contact with green cestrum until the plants are killed. This will ensure that poisoning does not occur.

Schedule:

Resources: Noxious weeds officer

Indicators

All known infestations are controlled.

General

Situation	Herbicide	Rate	Comments
Apply from late spring to early autumn when bushes are active	Triclopyr + picloram	500ml in 100L of water 1L in 60L of diesel	Any weed growth and seedlings must be resprayed when 1 metre high
Actively growing bushes in full leaf	Picloram + 2,4-D	650 ml in 100L of water	
Active growth, before flowering	Amitrole + Ammonium thiocyanate	1.1L in 100L of water	
Must be applied annually	Triclopyr	170 in 100L of water	Retreat regrowth next season
Used on smaller versions of the weed	Glyphosphate 360 g/L	Undiluted	Scrape stem application

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Common Name: Paterson's Curse

Botanic Name: Echium spp

Classification: 4

Action required: There are a number of methods available for the control of Patersons Curse, these include, mechanical methods (burning of flowering plants, as the seed may still mature, even after the removal of the weed from soils), Grazing (is especially effective particularly with sheep), cultivation (effective in arable areas), biocontrols (several biocontrols agents are being trialled interstate), herbicides (patersons curse is best sprayed when young, boom spot and wiper application are all effective).

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: None known

Medium: None known

Isolated: Shire wide

Control Plan

Public Land: Apply the mechanical, biological and herbicide mechanisms provided above

Private Property: Inspect known infestation and issue control noticed

Schedule: Mechanical and grazing applications need to be provided all year round, cultivation must occur must occur in autumn, winter and spring, while herbicides must be applied only in autumn and spring.

Resources: Noxious weeds officer

Indicators

All new infestations are treated and known infestations are reduced.

General

Herbicide applications are outlined below:

Situation	Herbicide	Rate	Comments
Young Rosettes	2,4-D amine 500g/L	210 to 280 ml in 150 L of water	Spray graze technique
Seedlings to rosettes	2,4-D ester 800g/L	70-140 ml in 100L of water	
Young rosettes to mature plants	2,4-DLV ester 400g/L	140-280ml in 100L of water or 1.4-2.8 L per hectare	
Young rosettes to mature plants	2,4-D amine 800g/L	900g to 1.8 Kg per hectare	
Young rosettes or plants	2,4-DB 400g/L	500 ml in 100L of water or 2.8 to 3.5L per hectare	
2-6 leaf stage	2,4-DB 500g/L	2.1 to 3.2 L per hectare	
Rosettes to pre flowering	Picloram	150 ml in 100L of water	
Actively growing plants	Glyphosphate 360 g/L	500-700ml in 100L of water or 2.0-3.0 per hectare	
Rosettes	Metsulfuron methyl	5g in 100L of water or 10-15g per	Only after full leaf expansion but before

Situation	Herbicide	Rate	Comments
		hectare	head emergence
Apply at early rosette stage	MCPA 500g/L	1-1.5 L per hectare	

Common Name: Serrated Tussock

Botanic Name: Nassella trichotoma

Classification: 4

Action required: Among the best methods of managing serrated tussock, prevention is once again the most suitable. To prevent invasion, buy animals from weed free areas, purchase certified seed, use uncontaminated off farm machinery, and plant pine trees or sow phalaris along boundaries with infested properties. Other control methods include chipping or spot spraying individual plants and small patches, ploughing or aerial spraying large infestations, replacing removed tussock with improved pastures.

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: None known

Medium: None known

Isolated: Nepean River catchment (Wilton), Navigation Creek Catchment (Razorback, Menangle), Racecourse Creek catchment (Razorback), Bargo River Catchment (Pheasants Nest)

Control Plan

Public Land: Prevention of spread and replacing sites of serrated tussock with sites better quality pastures.

Private Property: Inspect known infestation and issue control noticed as well as educating residents on how to identify the weed, and any action that they can take.

Schedule: When replacing removed tussock with improved pastures, spelling must occur for at least one year after sowing the improved species, and then again in the following three spring-summer periods.

Resources: Noxious weeds officer

Indicators

All known infestations are controlled.

General

Situation	Herbicide	Rate	Comments
Spot spray from September to may	Fluproponate	2.0L per hectare or 200ml in 100L of water	Boom application, spot spray
June to August for boom or aerial application or September to march for wick wiping application	Fluproponate 745g/L	1.5-2.0 L per hectare or 150-200ml in 100L of water or 1:20 mixture in water	Boom and aerial application, June to August inclusive
General purposes	Glyphosphate 360g/L	1L in 2L of water	Wick wiping application
Actively growing stress free plants	Glyphosphate 360g/L (Roundup Bioactive)	4.0 to 6.0L per ha	Spray topping application

Common Name: Longstyle Feather Grass

Botanic Name: Pennisettum villosum

Classification: 4

Action required: The only form of chemical treatment that is currently registered for the treatment of Longstyle Feather Grass is Glyphosate at the rate of 1 litre to 2 litres of water applied through a rope wick indicator.

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: Racecourse Creek and Stonequarry Creek catchments (Picton), Myrtle Creek Catchments (Tahmoor)

Medium: None known

Isolated: None known

Control Plan

Public Land:

Private Property: Inspect known infestation and issue control noticed

Schedule:

Resources: Noxious weeds officer

Indicators

All known infestations are controlled.

General

There are no registered herbicides for this plant.

Common Name: Blackberry

Botanic Name: Rubus fruiticosis

Classification: 4

Action required: The best way to manage blackberries is by prevention. Normal management options include slashing of juvenile bushes (the use of goats can be helpful in this process), or improving pastures with a vigorous perennial species. Herbicide treatment is also available.

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: Shire wide

Medium: Shire wide

Isolated: Shire wide

Control Plan

Public Land: Treat all council managed lands at least once per annum

Private Property: Inspect known infestation and issue control noticed

Schedule: Sept to May

Resources: Noxious weeds officer and blackberry control project officer

Indicators

All known infestations are controlled.

General

Herbicide applications are outlined below:

Situation	Herbicide	Rate	Comments
When bushes are actively growing	Triclopyr + picloram	350 or 500ml in 100L of water	Apply late spring to early autumn, use a higher rate on plants that have been damaged by grazing.
Apply from flowering until before leaf yellowing	Glyphosphate + metsulfuron (Trounce)	1 measured pack in 100L of water	Do not apply to bushes with mature fruit
When bushes are actively growing	Glyphosphate + metsulfuron (Cut-out)	1 measured pack in 100L of water	Apply between January and April, do not apply to bushes

Situation	Herbicide	Rate	Comments
			with mature fruit
When bushes are actively growing	Metsulfuron methyl	10g in 100L of water	Thoroughly wet all canage and foliage at commencement of flowering
Flowering to leaf fall	Glyphosphate 360g/L	1.0 to 1.3 L in 100L of water	Use higher rate on old, dense infestations
Actively growing bushes	Triclopyr	170ml in 100L of water	Do not use under dry conditions
	Picloram (Tordon Granules)	35-45g per square meter	Apply to an area extending from main stem to 30cm outside the dripline
	Picloram (Tordon)	500ml in 100L of water	Late spring to early autumn treatment. Use an adjuvant

Common Name: Burrs (Bathurst, Noogoora, Californian, Cockle)

Botanic Name: Varied

Classification: 4

Action required: Control of the Bathurst Burrs can involve a variety of applications including, biological control (uses a natural agent that has been artificially manipulated to improve its performance), ecological control (uses a natural agent), mechanical control (includes cutting or hoeing by hand), and chemical control (involves the use of herbicides).

Aim

To eradicate all known infestation of this weed from the Shire

Infestation Details (sub Catchments)

Core: None known

Medium: None known

Isolated: None known

Control Plan

Public Land: Mechanical controls are the first priority as they are cheapest. However chemical and biological controls may be needed in cases of large infestations.

Private Property: Inspect known infestation sites and issue control notices where needed

Schedule: This type of weed should be checked for as regularly as possible in order to prevent infestations

Resources: Noxious weeds officer

Indicators

The reduction of known infestations of these weeds

General

Situation	Herbicide	Rate	Comments
Actively growing	2,4-D amine 500g/L	100-140ml in 150 L of water or 1.0-1.4 L per hectare	Seedlings only
Actively growing plants	2,4-D ester 800g/L	100-140ml in 150 L of water or 1.0-1.4 L per hectare	
Actively growing plants	2,4-DLV ester 400g/L	280-560ml in 100L of water or 2.8-5.6 L per hectare	Use higher rates as plants mature
Seedlings only	2,4-D amine 800g/Kg	600-900g per hectare	Will damage legumes
Grass pastures	Dicamba + MCPA	190-270ml in 100L of water or 2.8 to 4.0 L per hectare	
	Picloram + 2,4-D	1.0 L per hectare	Can be used in summer cereals
Seedlings only	2,4-Disopropylamine	2.2-3.0 L per hectare	
Actively growing plants up to early flowering	Metsulfuron methyl	5 or 7.5g in 100 L of water	Use higher rate when plants are beyond early flowering
Actively growing plants	Fluroxypyr	75ml in 100L of water	