

## 1.0 Cover Page



# REGIONAL WEED MANAGEMENT PLAN

**1.1 Plan Title:** *Riverina Highlands Blackberry Management Plan* No. **XXX**

## 1.2 Plan Proponents / Applicant Contact Details

Regional Weeds Advisory Committee: Eastern Riverina Noxious Weeds Advisory Group

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Signature: Eastern Group Representative: ..... Date: .....

## 1.3 Name of Plant(s)

**WONS - Yes**

Scientific name: *Rubus fruticosus* agg.

Common name: Blackberry

## 1.4 Plan Period

Starting date: 01/07/2004

Completion date: 30/06/2009

## 1.5 Area of Operation:

The Highlands of Region 5, encompassing Councils and RLPBs to the east of Holbrook and Wagga Wagga. The Local Control Authorities and Rural Land Protection Boards this region encompasses are all members of the Eastern Riverina Noxious Weeds Advisory Groups (ERNWAG).

## 1.6 Aim:

To manage existing infestations and reduce the spread of Blackberry within the Riverina highlands.

## 1.7 Objectives:

- a. Limit the establishment of Blackberry in un-infested lands.
- b. Identify and remove all isolated infestations within the 1<sup>st</sup> year of the plan and rehabilitate these areas.
- c. Identify and implement a minimum of 20 projects within light/medium infested areas of the Riverina Highlands and target on-ground control with a view to remove all plants and rehabilitate these areas.
- d. Minimise the spread of Blackberry out of heavily infested areas.
- e. Support biological control programs in heavily infested areas particularly in inaccessible areas
- f. Educate and involve the community in management of Blackberry.

## **2.0 STAKEHOLDERS**

### **2.1 Signatories**

The following Local Control Authority (LCA) members of the Eastern Riverina Noxious Weeds Advisory Groups (ERNWAG): Gundagai Shire, Holbrook Shire, Tumbarumba Shire, Tumut Shire and Wagga Wagga City Councils; Hume and Gundagai RLPBs.

### **2.2 Other Stakeholders**

NSW Agriculture, Department of Infrastructure Planning and Natural Resources, Landcare, Murrumbidgee & Murray Catchment Management Boards, NSW National Parks & Wildlife Service, Roads and Traffic Authority, State Forests of NSW, Department of Primary Industries - Frankston, Riverina Highland Weeds Working Group, other members of ERNWAG, Western Riverina Noxious Weeds Advisory Group, NSW Farmers, Morefish, NSW Fisheries, State Rail, Snowy Hydro, CSIRO, Organic Growers Association, Tumbarumba Vignerons, Tarcutta Creek Catchment Committee, Upper Murray Catchment Advisory Committee, NSW Council of Freshwater Anglers, Sydney Flyrodders Club Inc, Rural Fire Service, Talbingo Bush-walkers club and Riverina Highlands Tourism.

## **3.0 BACKGROUND AND GENERAL FACTS**

### **3.1 Reason for Plan and Description of the Problem**

The Riverina Highland Weeds Working Group (RHWWG), previously the Black Willow Working Group, is an extensive network of contributing agencies formed to deal with weed issues in the Riverina Highlands. After success with Black willow the group has decided to take on a bigger project. The aim of the working group: To form collaborative approaches to weed management in the Riverina. This group is the body behind this regional plan.

Blackberry's introduction into Australia in the 1840s is said to have been deliberate as early settlers used it as a garden plant. By the 1880s it was considered a weed of significance. It now occurs in all states of Australia, and is particularly a problem in Victoria, Southern New South Wales and Tasmania. In 1984 blackberry was estimated to cost Australians about \$42 million per year, a figure which is likely to have increased. It is now estimated to infest more than 8.8 million ha nationally being a Weed of National Significance (WoNS) and arguably the worst weed of Southern Australia in terms of its impacts on natural ecosystems, forest plantations and perennial pastures.

Blackberry is widespread across the Riverina Highland region, ranging from heavily infested areas to light/scattered areas. The problem exists in both highlands and lowlands. Often heavy infestations are in inaccessible country that increases the likelihood of reinfestation. Refer to map.

It is critical that the investment of land managers in this region is recognised and supported by long-term funding for further management of Blackberry to reflect the importance of the area being of ecological and national significance. This area is of national significance because of:

- Tourism
- Agricultural productivity
- Forestry
- Sub-alpine ecosystems (Kosciuszko National Park)
- Headwaters to the Murray-Darling Basin
- Snowy Hydro scheme

Blackberry is also considered a weed of regional significance because of its invasiveness. It has the ability to compete strongly with preferred vegetation in production and natural ecosystems, thereby reducing biodiversity, conservation values and productivity. Agricultural productivity is reduced by Blackberry's ability to dominate whole paddocks excluding access to watering points, loss of property, downgrading of product and increased management costs, its capability to exclude most grazing animals and people, its ability to impede forestry operations, accelerates stream bank erosion around its root mass, and the fact that it provides harbour for pest species.

Natural ecosystems are affected by a decrease in biodiversity, the impact of feral animals harboured by blackberry thickets, and a decrease in ecotourism dollars as a result in reducing the desirability of the natural environment to the tourist. In bushland and conservation areas Blackberry reduces vegetation diversity in turn affecting wildlife habitats, threatened species, ecological communities (eg Endangered White-box woodlands of National Significance) and favouring the expansion of exotic species populations (e.g. Blackbirds, rabbits and foxes). It thus has the potential to significantly reduce the productivity of agricultural land, and reduce the amenity of recreational land. State forests have reported a reduction in productivity of radiata pine due to infestations of Blackberry.

A large component of this plan will be the identification of priority areas within the Riverina highlands. These priority areas will be the main focus of the group and any external funding.

Fishery, Horse riders, Bushwalkers and other recreational groups are all affected by reduced access due to blackberry infestations. Projects to be identified through this plan will not only protect agricultural lands but will also remove blackberry infestations thus improving access for recreational use.

### **Null Hypothesis**

Since blackberry first infested the Riverina Highlands, a lot of time, dollars (in excess of a million dollars spent annually) and effort have been invested into managing the problem. Given the huge burden that Blackberry infestations place on the community and the environment the option of no control is not acceptable.

If no resources were invested into Blackberry management, in a few years time major road and highway verges would be taken over by blackberries, limiting access. All agricultural land would be less productive as it became infested. Blackberries would be out-competing pine seedlings at establishment phase. Access for ecotourism to recreational areas, particularly creeks and rivers, would be rendered impossible. Millions of dollars of investment of Blackberry control will be wasted. There will be a significant impact on ecological processes and unacceptable consequences on threatened species. The increase in fire hazard will also be significant as fuel loads will increase substantially.

### **3.2 Distribution of Infestations**

Refer to Appendix 1 for distribution of Blackberry in the Riverina Highlands.

Terminology defined for distribution map of any particular area:

Isolated = 0% to 0.1%

Light = 0.2% to 1%

Medium = 1.1% to 10%

Heavy = >10%

Mapping was undertaken at parish level that is approximately 5,000ha on average.

An example is: A heavy infestation on 100 ha would cover over 10ha

### 3.3 Weed Biology/ Ecology

Blackberry is an invasive perennial, semi-deciduous, scrambling, semi-prostrate to almost erect shrub, growing into thickets that can be several metres high, with stems arching and entangling. It is considered a serious weed of higher rainfall areas of Australia. Few Blackberries are found established above the snowline.

The crown is the hardest part of the plant to kill; each primer cane having the ability to produce a new plant each year and grow about 10cm per day (1cm per daylight hour).

Currently *Rubus fruticosus* aggregate contains at least 8 spp and several *R. ulmifolius* hybrids. Estimated number of taxa (including cultivars) in Australia is 49. The taxa are still evolving through hybridisation, making control very challenging, as agents are often taxa specific. Franz Marr (DPI) has already identified two Blackberry taxa in Tumbarumba shire – being *Rubus discolor* and *R. ulmifolius* hybrid.

### 3.4 Method and Rate of Spread

Blackberry can spread via seed or by daughter plants developing from canes or suckers. Daughter plants, whose growth can be rapid, are said to be the main form of localised spread.

Seeds may be dispersed some distance by birds and other animals such as foxes. Studies have identified in excess of 500 seeds per fox dropping and 2000 seeds per emu dropping. It may also be transported by water along rivers or creeks. Blackberry has also been shown to reproduce from root fragments, with disturbance and cultivation potentially transplanting propagules.

### 3.5 Roles and Responsibilities of Land Managers

All landholders/ managers listed below are critical in the success or failure of this plan, being active members of the Riverina Highland Weeds Working Group (RHWWG).

Local Control Authorities, Rural Land Protection Boards, National Parks and Wildlife Services, State Forests, Department of Infrastructure Planning and Natural Resources, Snowy Hydro and landholders /land managers.

## 4.0 LEGISLATIVE AND REGULATORY SITUATION

### 4.1 Current Declaration

<u>Council</u>	<u>Current Declaration</u>
Gundagai	W2
Holbrook	W3
Tumbarumba	W3
Tumut	W3
Wagga Wagga	W2

### 4.2 Declaration Changes

None required.

## **5.0 CONSIDERATIONS AND OPPORTUNITIES**

### **5.1 Opportunities to be exploited**

The main opportunity to be exploited under this plan is the ability to adopt a coordinated approach to the management of Blackberry utilising the expertise and knowledge of stakeholders. As the plan progresses, opportunities may arise to obtain funding for preservation / enhancement works on remnants or vegetation restoration works, on private lands, through cooperation with CMBs. Further funding from stakeholders could be pooled to facilitate addressing knowledge gaps into biological control.

With Blackberry being on the WoNS list, opportunities may arise for additional funding that community groups can apply for, as well as applying for vegetation restoration works, on private lands, through cooperation with Landcare. External funding opportunities exist through NHT, Catchment Blueprints, Envirofunds, the National Weed Strategy and other fund sources that could significantly accelerate implementation of this plan.

Extension activities, field days etc will continue to take place, providing the general public with the opportunity to gain more knowledge and experience on Blackberry and integrated weed management options. Updates on the biological control research being undertaken at DPI-Frankston will also be available at field days.

### **5.2 Species Management**

- Biological-control
- Grazing management.
- Pasture renovation
- Chemical control
- Mechanical control

All of the above methods will be used within this management plan either individually or in combination. This is dependant on the location, access, need for rehabilitation and the severity of the infestation. An example being: biological releases in inaccessible areas of National Parks, chemical control in the valleys as areas become more accessible with slashing around camping areas.

### **5.3 Extension and Education**

Extension and education activities are key components of this plan. If people are unaware of the potential problems blackberry can cause, and unaware of its means of dispersal, then they are unlikely to act. The extension program will address these issues and will be delivered through field days/ workshops, personal contact during inspections and through the provision of printed material to the general public.

The working group is very active in facilitating strategic planning and actions over the Riverina Highlands area. This has been acknowledged by the National Coordinator for Blackberry who has stated in the 2003 Annual WoNS report, “this is the most active and innovative working group in the Nation”. Therefore the group has been promoting activities and will continue to educate and engage the community to achieve the objectives of this plan.

Two examples are:

- Tumbarumba Shire has organised a field day to examine the results of chemical trials on blackberries conducted early 2003.
- The RHWVG will be hosting one of the field tours for the 2004 Australian Weeds Conference to be held in Wagga Wagga.

#### 5.4 Links to other Strategies

- ❖ The National Weeds Strategy (Australia).
- ❖ The New South Wales Weeds Strategy.
- ❖ The NWAC Strategy – Noxious Weed Control Extension
- ❖ Weeds of National Significance Blackberry (*Rubus fruticosus agg*) Strategic Plan.
- ❖ Murray and Murrumbidgee Catchment Management Blueprints
- ❖ Riverina Highlands Regional Vegetation Management Plan.
- ❖ The Victorian Blackberry Strategy.
- ❖ Local Weed Control Management Plans.
- ❖ Riverina Regional Weed Strategy (in development)

#### 5.5 Barriers and Contingencies

The following are potential barriers / constraints that exist that may result in reduced performance during the plan period. Possible solutions, contingencies are also given.

POTENTIAL BARRIERS / CONSTRAINTS	POSSIBLE SOLUTION, CONTINGENCIES
Ignorance of the problems this species can cause.	Incorporate issue into extension programs, i.e. Field days, information brochures, letter drops.
Lack of Biological control options for the inaccessible areas.	Keep connected with DPI-Frankston and CSIRO research programs.
Access difficulties due to terrain.	Set up trials and release bio-control as it becomes available.
Dispersal of seed by native and pest animals.	Support feral animal control programs by working with groups like the Wild Dog/Fox Cooperative Management Committees, RLPBS, State Government Agencies and Landcare fox control programs.
Differing management priorities between neighbours.	Facilitate links and foster common goals. Invite participation.
Lack of resources.	Develop strategies to seek additional and secure current resources. Prioritise use of these to the best effect.

**6.0 PERFORMANCE INDICATORS AND ACTIONS**

<b>OBJECTIVE</b>	<b>ACTION</b>	<b>PERFORMANCE INDICATOR</b>	<b>BY WHOM</b>
<b>a.</b> Limit the establishment of Blackberry in un-infested lands.	1 At establishment phase treat Blackberry infestations prior to planting.	1 Blackberry plants treated prior to planting pine trees.	1 SF
	2 Develop cooperative links between differing land managers. Ref: National Blackberry Strategy 2.3.3	2 All land managers working together to achieve the common goal.	2 SF, RLPBs, NPWS, LCAs, Land Managers, RHWWG.
	3 Maintain inspection programs on un-infested lands.	3 All un-infested properties inspected within the life of the plan.	3 LCAs, Land managers, SF, NPWS, RLPBs.
<b>b.</b> Identify and remove all isolated infestations within the 1 <sup>st</sup> year of the plan and rehabilitate these areas.	1 Inspect all known isolated infestations of Blackberry.	1 100% of all known isolated infested properties inspected per annum.	1 LCAs, RLPBs, SF, NPWS, Land managers
	2 Control all known and new infestations prior to seed set.	2 All known and new infestations located and treated prior to seed set.	2 LCAs, RLPBs, NPWS, land managers
	3 Communicate with land managers to ensure that they effectively treat Blackberry and report new infestations. Ref: National Blackberry Strategy 2.2.3a	3 Reduction in the spread of Blackberry on private property.	3 LCA and land managers
	4 Manage treated sites to encourage regeneration of desirable pasture or native species to prevent reinvasion. Ref: National Blackberry Strategy 2.1.3	4 Desired vegetation has out-competed the blackberry for the life of the plan.	4 LCAs, RLPBs, SF, NPWS, Landcare

	<p>5 New infestations on boundaries of State Forests and NPWS to be treated.</p> <p>6 Maintain mapping of infestations using GPS.</p>	<p>5 All known and new infestations located and treated as an ongoing annual program.</p> <p>6 Map updated after every growing season with increased accuracy.</p>	<p>5 SF, NPWS</p> <p>6 LCAs, NPWS, RLPBs, SF</p>
<p><b>c.</b> Identify and implement a minimum of 20 projects within light/medium infested areas of the Riverina Highlands and target on-ground control with a view to remove all plants and rehabilitate these areas.</p>	<p>1. Identify priority projects to be targeted annually.</p> <p>2. Create actions for each priority project.</p> <p>3. Seek funding for priority projects.</p> <p>4. Maintain mapping of infestations.</p>	<p>1. Minimum of 20 priority projects identified.</p> <p>2. Land managers action plans developed by March 2004</p> <p>3. At least 20 priority projects completed over the life of the plan.</p> <p>4. Map updated as priority projects are completed.</p>	<p>1. LCAs, SF, RLPBs, NPWS</p> <p>2. LCAs, SF, RLPBs, NPWS</p> <p>3. All stakeholders</p> <p>4. LCAs, RLPBs, SF, NPWS</p>
<p><b>d.</b> Minimise the spread of Blackberry out of heavily infested areas.</p>	<p>1. Maintain inspection of heavily infested areas.</p> <p>2. Boundaries of heavily infested areas inspected.</p> <p>3. Identify areas where practical control can be carried out to minimise the spread.</p> <p>4. Maintain mapping of infestations.</p>	<p>1. 100% of all known heavily infested properties inspected annually.</p> <p>2. Boundaries of heavy infestations inspected biannually.</p> <p>3. Spread minimised where practical control could be carried out.</p> <p>4. Map updated as control works are completed.</p>	<p>1. LCAs</p> <p>2. SF, NPWS</p> <p>3. All stakeholders</p> <p>4. All stakeholders</p>

<p><b>e.</b> Support biological control programs in heavily infested areas particularly in inaccessible areas.</p>	<ol style="list-style-type: none"> <li>1. Identify key sites for DPI Frankston / CSIRO to undertake trial work on new biological control releases.</li> <li>2. Maintain a working relationship with DPI Frankston / CSIRO to monitor development of biological agents.</li> <li>3. Identify resources to support research programs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Sites made available for DPI-Frankston / CSIRO to trial new releases in the highlands</li> <li>2. Participation at meetings and support of field trials.</li> <li>3. Commitment of resources to support biological control research.</li> </ol>	<ol style="list-style-type: none"> <li>1. LCAs, RLPBs, SF, NPWS</li> <li>2. RHWVG, DPI - Frankston, CSIRO.</li> <li>3. LCAs, NPWS, SF, RLPBs</li> </ol>
<p><b>f.</b> Educate and involve the community in management of Blackberry.</p>	<ol style="list-style-type: none"> <li>1. Run extension program outlining the problems this weed can cause within the Riverina. Ref: National Blackberry Strategy 2.2.4a</li> </ol>	<ol style="list-style-type: none"> <li>1. - At least one specific field day held every year, and as new biological control options come to hand. - Specific media releases each season through each LCA. - Information brochures handed to new land managers.</li> </ol>	<ol style="list-style-type: none"> <li>1. LCAs, SF, NPWS, RLPBs, RHWVG</li> </ol>

## **7.0 MONITOR AND REVIEW PROCESS**

The Riverina Highland Weeds Working Group will meet July in each year to review previous years activities / progress and check we are on track to meet the plans aims / objectives / actions / performance indicators. All stakeholders' local plans / worksheets to be presented at this meeting to ensure they are achieving performance indicators outlined in this plan. Should they not be met, without an appropriate explanation, group pressure may be applied to encourage them to be met in future years. Activities for the upcoming season will be planned, resource sharing will be arranged and everyone will familiarise themselves with the activities that are to be conducted. Where appropriate, renew plan commitment and discuss Regional Group project Funding Application for this weed so that it can be developed in time for the 1<sup>st</sup> May deadline.

The group will also meet on a quarterly basis to implement works in a co-ordinated fashion.

## **8.0 BENEFITS**

This plan is aiming at containing the existing Blackberry infestations, and encouraging the removal of any new infestations that may be moving into un-infested lands by working in conjunction with stakeholders and others. The benefits include:

- Cooperative approach to Blackberry control across the region.
- Protection of threatened species and communities.
- Increased biodiversity
- Reduced cost of control for landholders and land managers in the long term.
- Reduction in fuel loads within NP, SF and private property.
- Improved access to watering points.
- A reduction in stream bank erosion through rehabilitation of areas previously infested with Blackberries.
- Reduced establishment costs for the plantation industry.
- Maintain / improved productivity of rural industries.
- Improved aesthetic and recreation values along with improved tourism opportunity and appeal.
- Improved access for recreation users, for example canoeing, fishing, boating, bushwalking, mountain biking, horse riding, motorbike riding and 4WD driving.
- Reduction of infestations of pest animals by reducing their harbour.
- Improved stakeholder network.

An estimated \$1 million worth of control works are carried out by stakeholders on an annual basis in the Riverina Highlands. This amount is well short of what is required to achieve the above objectives. Increased funding to allow the implementation of this plan will ensure a more integrated and efficient approach to the management of Blackberry across the Riverina Highlands.

## **9.0 RESOURCES**

### ◆ References and Further Readings

Agriculture and Resource Management Council of Australia & New Zealand, Australian & New Zealand Environment & Conservation Council and Forestry Ministers, (2000) *Weeds of National Significance Blackberry (Rubus fruticosus L. agg.) Strategic Plan*. National Weeds Strategy Executive Committee, Launceston.

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## **DISCLAIMER**

Any recommendations / comments contained in this document or referred literature do not necessarily represent the plan proponents, participants / stakeholders, authors, coordinators or NSW Agriculture's policies or specific views. No person or organisation should act on the basis of the contents of this document or referred literature, whether as to matters of fact or opinion or other content, without first obtaining specific, independent professional advice which confirms the information contained in this document or referred literature.

**APPENDIX 2.****RIVERINA HIGHLAND WEEDS WORKING GROUP**  
**Committee members and Associates**

Bob Thurling	Wagga Wagga City Council
Mark Gardiner	Wagga Wagga City Council
Cherie White	Tumut Landcare Coordinator
Matthew Pope	State Forests
Chris Rhynehart	State Forests
Russell Percival	Gundagai Shire Council
Brent Livermore	Tumbarumba Shire Council
Paul McPherson	Tumbarumba Shire Council
Brett Upjohn	NSW Agriculture
Peter Ellison	Tumut Shire Council
Rob Owers	Tumut Shire Council
Cr Gene Vanzella	Tumut Shire Council
Neil Hibberson	Holbrook Shire Council
Ray Mooney	DIPNR
Sarah Keel	DPI – Frankston
Kylie Durant	Regional Vegetation Officer
Rachel Walker	Hume RLPB
James Smith	Gundagai RLPB
Louise Morin	CSIRO
Birgitte Verbeek	Regional Weed Control Coordinator
Paula Ash	Riverina Noxious Weeds Project Officer
Josh Bean	National Parks and Wildlife Service
Jamie Molloy	National Parks and Wildlife Service