## 1.0 Cover Page

NSW Agriculture

# REGIONAL WEED MANAGEMENT PLAN

**1.1 Plan Title**: **Riverina Coolatai grass Management Plan** **No. XXX**

## 1.2 Plan Proponents / Applicant Contact Details

Regional Weeds Advisory Committee: Eastern and Western Riverina Noxious Weeds Advisory Groups

Address: C/- Greater Hume Shire, PO Box 70, ALBURY NSW 2640

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Signature: Eastern Group Chairperson:. . . . . Date: . . . . . .

Signature: Western Group Secretary: . . . . . Date: . . . . . .

## 1.3 Name of Plant(s)

**WONS - No**

Scientific name: *Hyparrhenia hirta* Common name: Coolatai / Tambookie grass

## 1.4 Plan Period

Starting date: 01/07/2005 Completion date: 30/06/2010

## 1.5 Area of Operation:

**Region 5,** extending from Tumut in the east to Wentworth/ S.A border in the west and Carrathool in the north to the Murray River in the south. The Local Control Authorities and Rural Land Protection Boards this region encompasses are all representatives of the Eastern and Western Riverina Noxious Weeds Advisory Groups (**E/WRNWAG**).

## 1.6 Aim:

To reduce the potential impact of Coolatai grass across the Riverina.

## 1.7 Objectives:

**a.** All Coolatai grass infestations located prior to becoming established (larger than $5m^2$).

**b.** All small outbreaks, less than $5m^2$, are physically removed when found.

**c.** All known established infestations, larger than $5m^2$, have a management program in place to contain and reduce the infestation.

**d.** The general public and land managers informed of the potential threat of Coolatai grass over the life of the plan.

## 2.0 STAKEHOLDERS

### 2.1 Signatories

The following Local Control Authority (**LCA**) members of the Eastern and Western Riverina Noxious Weeds Advisory Groups (**E/WRNWAG**): Albury City; Balranald Shire, Bland Shire, Carrathool Shire, Central Murray County, Coolamon Shire, Cootamundra Shire, Corowa Shire, Greater Hume Shire, Griffith City, Gundagai Shire, Hay Shire, Jerilderie Shire, Junee Shire, Leeton Shire, Lockhart Shire, Murrumbidgee Shire, Narrandera Shire, Temora Shire, Tumbarumba Shire, Tumut Shire, Urana Shire, Wagga Wagga City, Wakool Shire, Wentworth Shire, Balranald RLPB, Gundagai RLPB, Hay RLPB, Hillston RLPB, Hume RLPB, Murray RLPB, Narrandera RLPB, Riverina RLPB, Wagga Wagga RLPB, Wentworth RLPB.

### 2.2 Other Stakeholders

The Noxious Weeds Advisory Committee (**NWAC**), NSW Department of Primary Industries – Forests and Agriculture (**NSW DPI**), Landcare (**L**), Catchment Management Authorities (Murrumbidgee, Murray and Lower Murray-Darling **CMA's**), Department of Environment and Conservation (**DEC – NPWS**), Roads and Traffic Authority (**RTA**), Telstra, Country Energy, Rural Fire Services (**RFS**), NSW Farmers (**NSWF**), Murrumbidgee Irrigation, Coleambally Irrigation, Murray Irrigation Limited, TAFE NSW Riverina Institute National Environment Centre (**Albury TAFE**), Department of lands (**DIPNR**), State Rail Authority (S**RA**), Murray ROC Linear Reserves Project and neighbouring landholders.

## 3.0 BACKGROUND AND GENERAL FACTS

### 3.1 Plan Justification and Description of the Problem

Coolatai grass (*Hyparrhenia hirta*), a native of South Africa and the Mediterranean regions, was not recognised as a weed in the Riverina 12 months ago. Although it is thought to have been present on several roadsides for up to 55 years, its potential to become a significant weed problem wasn't realised until 2003.

Coolatai grass is a serious pasture and environmental weed throughout many parts of Australia. It is an invasive agricultural weed because of its ability to crowd out other pasture grasses. It is of very poor feed quality as a large tussock and has the potential to germinate all year round if the conditions are right. Coolatai grass grows rapidly during the summer months out-competing other species with its dense growth of leaf and stem material, but hays off quickly during winter. It has the ability to spread rapidly along roadsides, walking tracks and rail verges invading adjacent bushland.

Large areas of northern and mid north coast NSW are already infested with Coolatai grass. In these regions Coolatai grass is having a significant impact on production. In northern NSW it has invaded and dominated undisturbed native vegetation.

Coolatai grass is currently displacing native flora and fauna, altering fire regimes and directly impacting on threatened species and communities. It has increased roadside maintenance costs, added management constraints and will reduce productivity.

McArdle (2002) has found a significant reduction in species richness at the trial sites for his thesis, showing the detrimental effect that Coolatai grass has on the biodiversity of invaded areas. "The

reduction in cover and numbers of native species and the increase in cover of exotic species is significantly affecting the conservation value of invaded sites".

In the Riverina region Coolatai grass has been located in Albury, Balranald, Coolamon, Greater Hume, Gundagai, Junee, Lockhart, Narrandera and Wagga Wagga Council areas. Infestations however are mostly minor with only a few well established large patches on roadsides.

Given the history of invasiveness in Australia and the fact that in the Riverina Coolatai grass is not yet well established, ERNWAG and WRNWAG are being proactive by applying to have it declared noxious. Our aim is to prevent this invasive grass from spreading in this region by containing and reducing current infestations and removing all new infestations. Implementing this plan will also reduce the chances of it spreading further south into Victoria. Apart from the few landholders that it is directly impacting on, very few are aware of its potential.

Coolatai grass is not currently declared anywhere in NSW.

**What's at risk?**
Coolatai grass is capable of smothering undisturbed native grasslands and grassy woodlands. In one northern NSW woodland remnant it took less than ten years for Coolatai to replace all the native ground plants. The expansion of this grass in the Riverina places at risk a whole suite of threatened species found in grassy ecosystems. This includes such species as the Slender Darling Pea, Claypan Daisy, Plains' Wanderer, Turquoise Parrot, Diamond Firetail Finch and Little Whip Snake.

Prevention is the best method of control for this weed, as once it becomes established it is extremely difficult to eradicate.

## 3.2 The "Do Nothing" Option

Coolatai grass is capable of dramatically expanding its distribution across the Riverina. The spread has been evident up north where its introduction in the 1940s has seen it spread rapidly along roadsides and stock routes, invading grazing lands and many private properties where its impact on production is significant.

Recent studies have documented its negative impact on biodiversity and it threatens to invade endangered white box communities in the Riverina. If this region were to ignore this invasive plant its density and distribution would gradually increase to a point where realistically resources would not be available to manage the problem. This has already occurred in northern NSW.

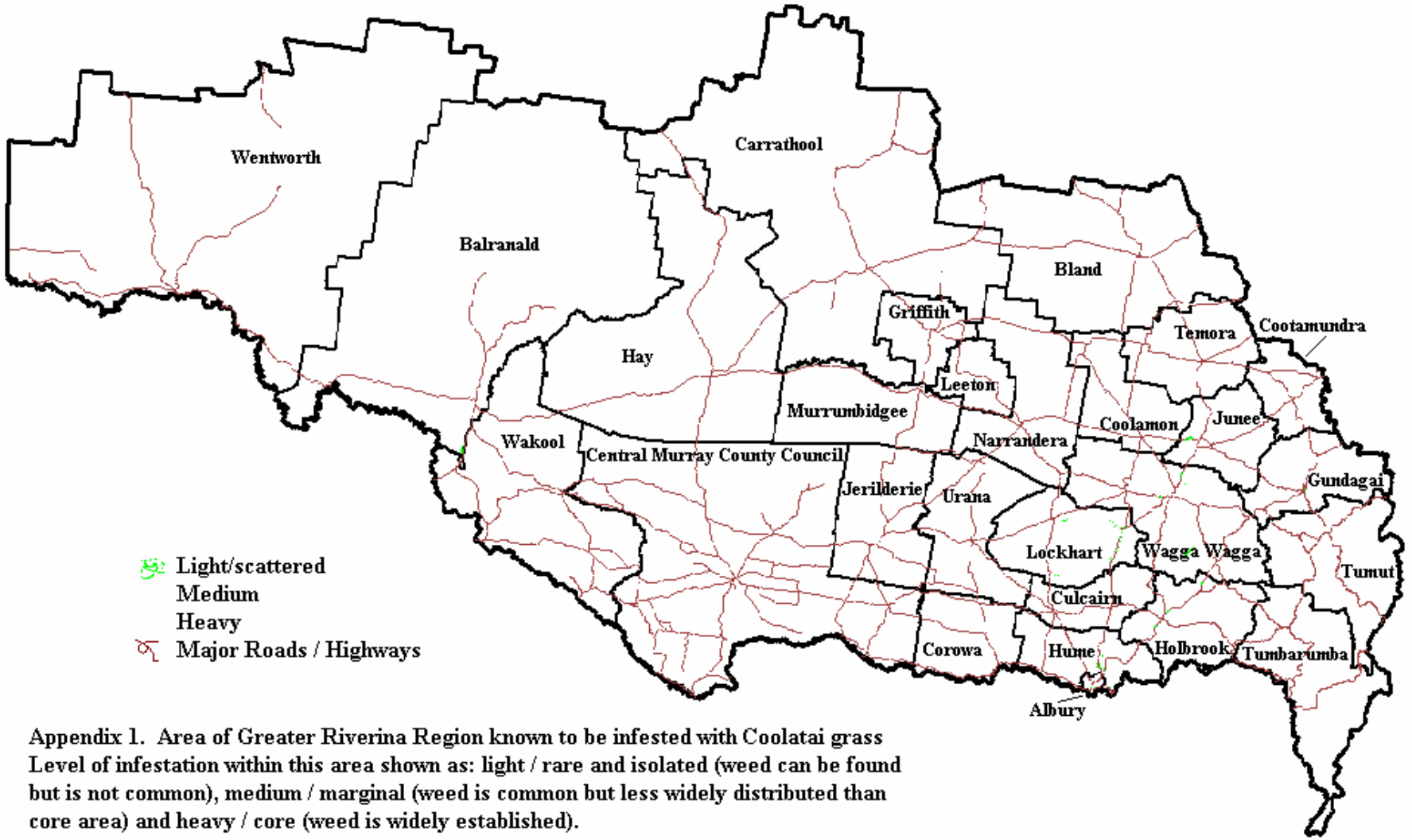
## 3.3 Distribution of Infestations

9 of the 25 LCAs in the Riverina have Coolatai grass infestations (Refer to Appendices for Riverina and individual Council distributions maps).

Based on the below definitions:
Core: - cannot treat all infestations
Marginal: - may take the five years of the plan to get around (treat) all infestations.
Rare and isolated: - easily treat all infestations every year.

At this early stage all infestations across the Riverina are classified as rare and isolated, being easily treated annually.

Distribution of *Coolatai grass* (Hyparrhenia hirta) in the Riverina.




**Appendix 1. Area of Greater Riverina Region known to be infested with Coolatai grass Level of infestation within this area shown as: light / rare and isolated (weed can be found but is not common), medium / marginal (weed is common but less widely distributed than core area) and heavy / core (weed is widely established).**

Note: Base map derived from data provided by and copyright of Land and Property Information New South Wales. Road data is copyright of the Australian Land Information Group (AUSLIG). This general image determined by the regions, LCA Weeds Officers (WO) and RLPB Rangers (R). Generally, weed distribution remains similar on LCA and RLPB managed lands.

## 3.4 Weed Biology

Once established, it develops into thick, large tussocks forming dense stands that out-compete native under storey vegetation. It has the potential to be a major weed for graziers. It is extremely drought tolerant and persistent, growing prolifically during the warm months. It is documented as being frost sensitive, yet remains green and fresh after heavy frost in the Riverina.

Seeds germinate at any time of the year under the right conditions; flowering at a very young age and continuing to do so as long as conditions are favourable. Plants have been seen to send a flower spike up four weeks after slashing.

Coolatai grass exhibits a general summer growth form characteristic of sub tropical grasses. Flowering is known to occur at longer day lengths (Dec/Jan). It also may be able to flower in response to the environment, enabling it to flower at other times of the year if conditions are favourable.

Being a perennial C4 grass it can grow rapidly and early on in the season. It is a very vigorous, competitive grass that grows on a wide range of soil types and is easily identified by its two-pronged raceme. It is often able to resprout earlier than natives, enabling it to effectively out compete then colonise bare ground forming monocultures.

Little is known about its seed bank dynamics so it's important to not let them develop. Being a perennial species it would be safe to assume several years longevity at least.

## 3.5 Method and Rate of Spread

Coolatai grass reproduces by seed. It is spread both naturally and by human means. It is the human induced spread that we have the most control over. Road passage is a factor. Vehicular movement and the wind generated by this disperse seeds of Coolatai grass along the roads. Coolatai grass currently appears to be spreading faster along the roadsides than into neighbouring private property. Infrequent roadside slashing will promote the spread of Coolatai grass.

Roadside maintenance activities have the capacity to transport seed from infested areas to clean.

One infestation has been in the Riverina for over 25 years. In this time it has moved down both sides of the road and spread to four adjoining properties and a crown reserve.

An isolated plant has been found on the side of a walking track that doesn't have vehicle access. The only machinery that has access is a slasher/mower working either side of the track to keep the long grass down. It was in this width that the individual tussock was found. Animals may be another means of dispersal – the seed adhering to fur etc when moist.

Anecdotal evidence suggests fire alone may lead to an increase in the presence of Coolatai grass. Fire bares out the ground and Coolatai grass is the first to colonise it, out competing other grasses with its vigorous growth. Also once established, fire may increase growth rates and promote new growth by removing old dead herbage and competition for light. The dense tussock base protects new shoots from fire.

## 3.6 Species Management

In this region Coolatai grass is primarily a weed of roadsides with the major means of dispersal thought to be through movement of seed by road maintenance equipment and slashing. Therefore, management options will be directed at firstly preventing seed set and secondly by preventing seed movement via machinery.

Once established the plant is difficult to kill showing significant tolerance to herbicide options. However careful timing of herbicide application has proved to be successful in northern NSW. Councils in this region are currently verifying this data.

A case study in Victoria on "Problems with controlling weeds on roadsides – whisky grass in East Gippsland"; suggested management options that may be applied to the Coolatai grass infestations in the Riverina. VicRoads are concentrating on eradicating isolated outbreaks while preventing the spread of the larger infestations. They felt a significant step is coordinating the control of routine grass cutting with herbicide application. Wherever possible spraying is carried out approximately 4 weeks prior to mowing activities allowing sufficient time for chemical to take effect – minimising the chance of seed being spread when the grass is cut (Sexton 2003).

McArdle (2002) outlines several management options to reduce the spread of Coolatai grass. These being: grazing, fire, physical/mechanical removal, herbicides, combined into an Integrated Weed Management plan and followed by rehabilitation of the treated area. For further information on each technique, refer to the publication.

Coolatai grass does not like cultivation. This may assist if it ever becomes established on land suitable for cultivation.

Several Councils in the Riverina are also currently trialling herbicide options to verify their effectiveness in southern NSW. Herbicides have been selected from recommendations made by NSW DPI Weeds Research and Demonstration Unit based in Tamworth.

## 3.7 Key Land Managers

All landholders/managers listed below are critical in the success or failure of this plan. If Coolatai grass were to be left untouched due to a lack of awareness of its potential distribution, the Riverina will end up with severe infestations similar to the northern and mid north coast of NSW. The Riverina's roadsides could eventually become a monoculture of Coolatai grass.

Local Control Authorities, Rural Lands Protection Boards, Roads and Traffic Authority, Rail Corp, Department of Environment and Conservation (NPWS within DEC), NSW Department of Primary Industries (State Forests within DPI) and landholders/ land managers.

# 4.0 LEGISLATIVE AND REGULATORY SITUATION

## 4.1 Current Declaration

Coolatai grass is currently not declared anywhere in New South Wales.

## 4.2 Declaration Changes

ERNWAG - Motion moved on 28/10/03 to have Coolatai grass declared as a W2 Noxious Weed.
WRNWAG - It will be discussed at the next WRNWAG meeting to incorporate the regional approach.

Requesting a region-wide W2 declaration incorporating the following LGAs:

Albury
Balranald
Bland
Carrathool
CMCC
Coolamon
Cootamundra
Corowa
Greater Hume
Griffith
Gundagai
Hay
Jerilderie
Junee
Leeton
Lockhart
Murrumbidgee
Narrandera
Temora
Tumbarumba
Tumut
Urana
Wagga Wagga
Wakool
Wentworth

# 5.0 CONSIDERATIONS AND OPPORTUNITIES

## 5.1 Financial support to carry out the plan

Given the proactive approach this region is taking, funds to implement this plan at this early stage will be minimal. Coolatai grass has been listed as a key threatening process and funds may be available through this process. Chemical companies have already supported trial works in the Riverina and agreed partnerships with the Catchment Management Authorities have recently be made.

## 5.2 Links to other Strategies

To the best of our knowledge there are no plans or strategies currently in place for the management of Coolatai grass. The National Weed Strategy is an overriding document in weed management that this plan links directly in with. Objective 3.2 in the strategy is: To encourage the development of strategic plans for weed management at all levels.

Coolatai grass has recently been listed along with a number of other tussocky grasses, as a key threatening process under the Threatened Species Conservation Act 1995.

Note: A key threatening process is defined in the Threatened Species Conservation Act 1995 as a process that threatens, or could threaten the survival or evolutionary development of species, populations or ecological communities.

## 5.3 Barriers and Contingencies

The following barriers will delay or obstruct the operation of this Coolatai grass regional plan.

- Spread by human movement – machinery, passing transport etc. (Obj c; Act 4)
- Primary producers and the general public do not recognise Coolatai grass. (Obj d; Act 1)
- Very difficult to distinguish it from other grasses, hard to identify until in flower. (Obj d; Act 1)
- Coolatai grass can flower and set seed in a short time frame. (Obj b; Act 3)
- Coolatai grass is currently not a declared noxious weed. (Obj c; Act 8)
- Slashing and mowing practices continue to spread this weed. (Obj c; Act 4)
- Regulatory restrictions imposed by other agencies. (Obj c; Act 4)
- To passers by Coolatai grass looks like a native grass, not an invasive weed. (Obj d)

The following contingencies may delay or obstruct the operation of this Coolatai grass regional plan.

- Wind – dispersal of seed. (Obj c; Act 1)
- Drought – Coolatai grass survives pro-longed periods of drought. (Obj c; Act 5)
- Frost - supposedly frost sensitive yet it continues to flourish after successive frosts in this region.

## 6.0 PERFORMANCE INDICATORS AND ACTIONS

| OBJECTIVE | ACTION | PERFORMANCE INDICATOR | BY WHOM |
|---|---|---|---|
| **a.** All Coolatai grass (CG) infestations located prior to becoming established (larger than $5m^2$). | 1. Hold grass weed id workshop and or field days across the Riverina over the life of the plan. | 1. All weed officers and several landholders in the Riverina competent in identifying CG. | 1. LCAs, Riverina Noxious Weeds Project Officer (RNWPO) |
| | 2. Send a sample away to the NSW herbarium for positive identification of new found infestations. | 2. Feedback from herbarium identifies sample. | 2. LCAs, DPI |
| | 3. Survey all roadsides biennially for CG infestations. | 3. 100% roadsides inspected biennially. | 3. LCAs |
| | 4. Map the location of all new found infestations, so sites can be monitored for regrowth | 4. All new infestations recorded manually or GPS, to allow for accurate monitoring. | 4. LCAs |
| | 5. Update regional map as new infestations are found, so we can document regional distribution. | 5. As new infestations are found, regional map updated. | 5. LCAs, RNWPO |
| | 6. Inspect all known infested areas and neighbouring properties for new infestations annually. | 6. 100% of all known infested areas & identified neighbouring properties inspected annually & new infestations recorded & removed. | 6. LCAs |
| | 7. Include CG in all private property inspections | 7. CG included in all private property inspection programs, landholders aware of its impact | 7. LCAs |
| | 8. Work with CMAs to identify areas of High Conservation Value that could/should be protected from CG invasion. | 8. HCV areas identified and protected from CG invasion. | 8. LCAs, CMAs |

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| | 9. Develop & implement a roadside vegetation management training program for roadside vegetation conservation. | 9. Roadside workers trained in hygiene practices. | 9. Murray ROC through the Linear Reserves Project |
| **b.** All small outbreaks, less than $5m^2$, are physically removed when found. | 1. Remove isolated infestations, either dig up or hand pull – removing all plant matter. | 1. 100% of isolated outbreaks found are removed when found. | 1. All stakeholders |
| | 2. Plant matter burnt, destroyed/disposed of. | 2. All plant matter is disposed of. | 2. All stakeholders |
| | 3. Monitor the site regularly between December and May. | 3. Regular inspection of removed infestations. | 3. All stakeholders, particularly LCAs |
| | 4. Remove any new germinations | 4. Any new germinations are removed as found. | 4. LCAs |
| | 5. Update local and regional maps as small infestations are removed. | 5. All maps are updated after monitoring has shown the infestations have been removed. | 5. LCAs, RNWPO |
| **c.** All known established infestations, larger than $5m^2$, have a management program in place to contain and reduce the infestation. | 1. Manage known infestations by treating, slashing (prior to seed set) and/or burning as location and season permits. | 1. Known infestations managed annually. | 1. LCAs, RTA |
| | 2. Undertake trials to find appropriate management techniques | 2. Trials undertaken and results documented and distributed to all stakeholders. | 2. LCAs |
| | 3. Continue chemical trials on Hume Highway. Distribute results to all stakeholders. | 3. Results distributed to stakeholders. | 3. Greater Hume Shire, Macspred |
| | 4. Encourage improved hygiene practices between LCAs and other key stakeholders to contain the | 4. Hygiene practices improve, infestations contained and further spread reduced. | 4. All stakeholders |

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|---|---|---|---|
| | infestations and reduce further spread. | | |
| | 5. All roadsides and properties that have been / are infested are to be inspected annually to monitor infestation levels and deliver extension material. | 5. 100% of infested properties inspected annually, landholders provided with any new extension material. Known infestations are contained or reduced | 5. LCAs' All Stakeholders |
| | 6. Follow-up inspection of all properties infested to ensure compliance. | 6. Compliance achieved on follow-up inspections. | 6. LCAs, landholders |
| | 7. Avoid slashing roadsides when seed is present. | 7. Roadside slashing not occurring during seed set. | 7. All stakeholders particularly LCAs & RTA |
| | 8. Submit declaration application for all areas outlined in section 4.2 | 8. Changes effective within 12 months of the plan being approved. | 8. LCAs, RNWPO |
| | 9. Update local and regional maps as existing infestations are reduced and removed. | 9. All maps are updated biennially showing a reduction in infestation levels. | 9. LCAs and RNWPO |
| **d.** The general public and land managers informed of the potential threat of Coolatai grass over the life of the plan. | 1. Run extension program across the Riverina, targeted at the general public; based on the potential impact of CG; its identification and recommended management options (including hygiene practices). | 1. At least 3 specific field days held over the plan period.<br>2. At least 2 specific CG media releases / annum<br>3. Information flier developed and distributed to general public.<br>4. Land managers can accurately identify CG and are aware of its impacts<br>5. Include CG information on stakeholder web pages. | 1. LCAs, RNWPO, all stakeholders. |

## 7.0 MONITOR AND REVIEW PROCESS

Plan participants meet each autumn (eg mid march) to review previous years activities, check are on track to meet this plans overall aim/objectives/performance indicators. All stakeholders' local plans/worksheets to be presented at this meeting to ensure they are achieving performance indicators outlined in these plans. Should they not be met, without an appropriate explanation, group pressure may be applied to encourage them to be met in future years. Participants will go over planned activities for upcoming season, arrange resource sharing and familiarise each other as to what activities are to be conducted (especially adjoining LCAs). Where appropriate renew plan commitment and discuss regional GP funding application for Coolatai grass so that it can be developed in time for the May 1st deadline.

## 8.0 BENEFITS

This plan is aiming at reducing the potential impact of Coolatai grass across the Riverina. The benefits include:-

- Cooperative approach to Coolatai grass control across the region.
- Protection of threatened species and communities.
- Increased biodiversity
- Prevention of potential control costs for future land managers.
- Reduced fire hazard.
- Maintain/improve productivity of rural industries
- Improved aesthetic and recreation values along with improved tourism opportunity and appeal.
- Improved stakeholder network.

Once Coolatai grass is declared, funding to allow the implementation of this plan will ensure a more integrated and efficient approach to the management of Coolatai grass across the Riverina region.

## 9.0 RESOURCES


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