



REGIONAL WEED MANAGEMENT PLAN

1.1 Plan Title: *Riverina Spiny burrgrass Management Plan* No. **XXX**

1.2 Plan Proponents / Applicant Contact Details
Regional Weeds Advisory Committee: Eastern & Western Riverina Noxious Weeds Advisory Group
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Signature: Eastern Group Chairperson: Date:
Signature: Western Group Secretary: Date:

1.3 Name of Plant(s) **WONS - No**
Scientific name: Cenchrus incertus / C. longispinus Common name: Spiny burrgrass
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 prevent the spread of Spiny burrgrass in the Riverina.
1.7 Objectives:

- a. All new infestations (<5m²) controlled within two weeks of discovery.
- b. All known rare and isolated infestations removed by 2010.
- c. All marginal infestations reduced by 25 % by 2010.
- d. All core infestations contained and prevented from spreading – density reduced.
- e. A public awareness and education program developed and implemented seasonally.

2.0 STAKEHOLDERS

2.1 Signatories

The following Local Control Authorities (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 (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), Department of Lands (DoL), Australian Rail Track Corporation (ARTC), Murray ROC Linear Reserves Project, Australian Wheat Board (AWB), Graincorp, Murray Irrigation Ltd, Murrumbidgee Irrigation and Coleambally Irrigation.

3.0 BACKGROUND AND GENERAL FACTS

3.1 Plan Justification and Description of the Problem

Spiny burrgrass (*Cenchrus incertus* & *C. longispinus*), a native of north & central America, is mostly a problem weed on light sandy soils in rural and urban areas. Across the Riverina spiny burrgrass is also known as "Gentle Annie" and "Innocent weed". It is a weed in this region because of the sharp, rigidly barbed spines that penetrate and adhere to nearly everything that comes in contact with them.

Spiny burrgrass is a summer growing annual that is difficult to locate and identify before flowering because of its similarity to many other grasses growing in association. Its greatest impact is its extremely vicious seed; the seed is often produced before being recognised.

The burrs injure stock by penetrating feet and mouths causing swellings and ulcers. They cling to wool and penetrate the skins of animals, reducing the value of both. The burrs readily contaminate wool and cause immense problems with shearing. Penalty rates for shearing are often applied when Spiny burrgrass seeds are present. Their needle-sharp spines also cause physical damage to livestock and people. The burrs can also contaminate crops and produce, especially dried fruit, reducing its value and marketability.

Although there are some core areas of infestations in the Riverina, the potential for Spiny burrgrass to infest is substantial. Public awareness, Council commitment and community support is guaranteed due to the severity of the weed.

Based on reports from LCAs that have Spiny burrgrass infestations, 33% of LCAs and RLPBs have decreased the numbers of infestations in their shire over the last 5 years – 46% remained static. 74% of shire and RLPBs indicated a reduction in the density of their infestations with 22% remaining static

for the last 5 years. 70% of the shires and RLPBs with SBG infestations have successfully eradicated 1 or more sites over the last 5 years.

3.2 The “Do Nothing” Option

The individual shire programs are highly effective and enhance the regions management (see CRC for Australia Weed Management fact sheet on integrated weed management – Spiny burrgrass). If these sorts of programs were not in place the infestations of Spiny burrgrass would increase exponentially affecting the community, environment and industry. Councils have protocols in place for roadside infestations with a large majority of them sign posted to prevent further spread.

Spiny burrgrass is a very visible problem in the Riverina. If the infestations were not sign posted, travelling stock and machinery would freely transport the seeds along all roads increasing infestations enormously causing widespread problems and productivity losses. There would be dramatic long term cost increases of management (chemical and labour). Spiny burrgrass would greatly reduce the recreational value of affected areas and may result in such areas becoming virtually unusable due to abrasive burrs. The areas that have been treated over the past 5 years will have been a total waste of time, resources and money as some of these areas have been reduced significantly.

3.3 Distribution of Infestations

Refer to Appendix 1 for distribution of Spiny burrgrass in the Riverina. All infestations classed as rare and isolated will be targeted for eradication over this 5 year period.

3.4 Weed Biology

Spiny burrgrass is a summer-growing annual grass that can reach 60cm in height. In some environments *C. incertus* becomes a perennial, regrowing from a crown each spring.

Up to 30 burrs per spike can be produced yielding 1000 seeds per plant. The majority of seed germination is in spring and early summer but some can occur at any time of the year except in mid winter. Burrs are normally produced from December to April, but this can vary depending on seasonal conditions. Majority of plants die in autumn or early winter.

Primary seed is the largest and can germinate within a few months. The secondary seeds can remain dormant for over 3 years.

3.5 Method and Rate of Spread

Spiny burrgrass reproduces by seed. Germination to seed production can happen very rapidly. The very sticky burrs are easily detached from plants when mature and adhere to wool, fur, clothing, bags and packaging. The weed grows well on disturbed road edges from where burrs readily attach to vehicle tyres. Wind plays little part in spread but water in irrigation channels, creeks and rivers can spread seed rapidly.

3.6 Species Management

Spiny burrgrass is an extremely difficult weed to control by a single control operation. The seed is not long lived in the soil; therefore, prevention of seeding is the key to successful control. Spiny burrgrass does not like a lot of competition in the growing season.

To achieve effective control a combination of several techniques is best used.

- Cultivation before seed formation, preferably in the seedling stage, as larger plants may regrow.
- Chipping the seed, bagging and disposing of it. Time consuming, laborious but very effective.
- Sowing of competitive grasses – consul and Rhodes grass, minimal impact to landuse.
- Burning and mulching have also been used.
- Window for control Spring to early summer
- Close monitoring spring/summer (especially after spring/summer rains).
- Weather conditions through summer can impact on the Spiny burrgrass season.

For further management options refer to the GRDC Spiny burrgrass info sheet, or the weeds CRC fact sheet on Spiny burrgrass.

Note: because of the seed dormancy factor, a control program should be planned for a 2-3 year period.

3.7 Key Land Managers

All landholders/managers listed below are critical in the success or failure of this plan. Due to time constraints many key land managers have not yet been consulted. A major component of this plan will be to liaise with all key stakeholders and determine agreed targets. Without the cooperation of all land managers this plan will not be achievable.

LCAs, RLPBs, RTA, DEC, ARTC, DoLs, Irrigation bodies, Landscaping industry, Transgrid, Country Energy, Telstra, Sporting bodies, Sub contractors and land holders/managers.

4.0 LEGISLATIVE AND REGULATORY SITUATION

4.1 Current Declaration

Balranald Shire	W4e	Leeton Shire	W4e
Bland Shire	W3	Lockhart Shire	W4e
Carrathool Shire	W2	Murrumbidgee Shire	W4e
Central Murray County Council	W4e	Narrandera Shire	W4e
Coolamon Shire	W4e	Temora Shire	W3
Corowa Shire	W2	Tumut Shire	W2
Griffith City	W4e	Urana Shire	W2
Hay Shire	W4e	Wagga Wagga City	W4e
Former Holbrook Shire	W2	Wakool Shire	W4e
Former Hume Shire	W2	Wentworth Shire	W2
Jerilderie Shire	W4e		

4.2 Declaration Changes

Cootamundra Shire has applied for a W4e declaration, awaiting approval. Greater Hume Shire, Tumbarumba Shire and Albury City will need to adjust their declarations as it isn't declared in some of the former shires (Tumbarumba and Culcairn).

5.0 CONSIDERATIONS AND OPPORTUNITIES

5.1 Financial support to carry out the plan

Over the last 4 years LCAs / RLPBs have expended over \$600,000 on managing Spiny Burrgrass under the previous Regional Weed Management Plan. An additional \$495,000 was granted by the Noxious Weed Advisory Committee to assist in achieving the regional outcomes. Alternate funding will be sourced from every avenue.

5.2 Links to other Strategies

The Lower Murray Darling Regional Weed Strategy ranks Spiny Burrgrass as a Category C weed in cropping, horticulture and rangeland areas. Meaning it is present with moderate distribution in the LMD catchment.

Infestations managed as per declaration status

Hygiene practices promoted to prevent further spread of the weed

Send out media releases and conduct field days during the growing season

Map and treat all infestations and monitor for re-emergence.

Draft SBG management plan Sept 97 – May 2001. (NSW Ag)

5.3 Barriers and Contingencies

The following barriers will delay or obstruct the operation of this Spiny burrgrass regional management plan.

Spread by human movement – machinery, travelling stock etc

Primary producers and the general public do not recognise Spiny burrgrass

Very difficult to distinguish it from other grasses, hard to identify until seed/burr is evident.

Spiny burrgrass can flower and set seed in a short time frame.

The following contingencies may delay or obstruct the operation of this Spiny burrgrass regional management plan.

Summer rains can impact on the Spiny burrgrass season – early germinations etc.

6.0 PERFORMANCE INDICATORS AND ACTIONS

Objective a: All new infestations (<5m ²) controlled within two weeks of discovery		
ACTIONS	PERFORMANCE INDICATORS	RESPONSIBILITY
1. Inspect for Spiny burrgrass (SBG) as part of routine property inspection program.	Property inspection program implemented.	LCAs
2. Inspect landscape/soil suppliers.	Landscape/soil suppliers inspected	LCAs
3. Control new infestations prior to seed set.	Infestations controlled prior to seed set	All stakeholders
4. If plants have already seeded, remove the burrs and then control the infestations.	Burrs removed and plants chipped and/or controlled	All Stakeholders
5. Survey all roadsides and reserves in areas of potential for new infestations.	Roads and reserves surveyed for new infestations	LCAs, RLPBs
Objective b: All known rare and isolated infestations removed by 2010.		
ACTIONS	PERFORMANCE INDICATORS	RESPONSIBILITY
1. Inspect all known infestations at the start and middle of the season.	100% of infested properties and roadsides inspected twice per season	LCAs
2. Remove outbreaks prior to seeding.	Outbreaks removed prior to seeding	All stakeholders
3. Update maps as infestations are eradicated after being monitored for re-emergence.	As infestations are eradicated maps are updated.	LCAs, RLPBs, RNWPO
Objective c: All marginal infestations reduced by 25% by 2010		
ACTIONS	PERFORMANCE INDICATORS	RESPONSIBILITY
1. Inspect all known infestations annually.	100% of infested properties and roadsides are inspected annually.	LCAs
2. Treat known infestations prior to seed set.	All known infestations treated prior to seed set.	All stakeholders
3. Update maps as infestations are reduced.	Maps updated as infestations are reduced.	LCAs, RLPBs, RNWPO

Objective d: All core infestations contained and prevented from spreading – density reduced		
ACTIONS	PERFORMANCE INDICATORS	RESPONSIBILITY
1. Inspect all infested areas and neighbouring properties annually.	100% of infested and neighbouring properties inspected annually	LCAs
2. Control known infestations prior to seed set.	All known infestations controlled prior to seed set	All stakeholders
3. Update maps as infestations are reduced.	Maps updated as infestations are reduced	LCAs, RLPBs, RNWPO
4. Encourage improved hygiene practices between LCAs and other key stakeholders to contain the infestations and reduce further spread.	Hygiene practices improve, infestations contained and further spread minimised.	All stakeholders
Objective e: A public awareness and education program developed and implemented seasonally		
1. Develop and implement a roadside vegetation management training program for roadside vegetation conservation.	Roadside workers trained in hygiene practices. Workshops run through the Murray Catchment	Murray ROC through the linear Reserves Project
2. Run extension program across the Riverina, targeted at the general public and industry organisations.	<ul style="list-style-type: none"> - One workshop / field day run within the region annually. - 3 media releases run over the plan period. - Information sheets / handouts given to all stakeholders as they are produced as well as seasonally. - This regional plan circulated to stakeholders for their endorsement. - Relevant LCA and RLPB staff attend at least 3 regional field days (e.g Henty)/year. - Run a grass Id training workshop across the Riverina for Local Government operational staff. 	WRNWAG, ERNWAG, All stakeholders, RNWPO

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 Spiny burrgrass so that it can be developed in time for the May 1st deadline.

8.0 BENEFITS

This plan aims to protect and thus be of benefit to the following regional endeavours/assets:

- Most broad acre farmers, Horticulturalists, Fodder producers, livestock producers, grain and seed growers, quarries and mining operations, council roadwork operations, ovals parks and play grounds, viticulture, dryland/irrigated cropping.
- Reduced control costs for landholders
- Protection of stock and wildlife and native flora.
- Graziers through a reduction in wool contamination/ increased prices.
- Nursery industry suppliers. Public receiving clean topsoil for gardens
- General public - Minimal risk of injury when accessing state forests / public areas for recreation.
- Wool producers – Less SBG means less wool contamination of fibre; higher value for product; reduced harvest crops; reduced control costs.
- Summer crop producers – minimal contamination in harvested grain.
- Wine producers/orchardists – reduced risk of contaminated crop. Reduce costs of control. Increased value and marketability of dried fruit.
- Sporting bodies – reduction in the risk of picking up burrs. Less expense.
- Urban residents – reduction in the occurrence of clothing and pet contamination.
- Tourism
- Reduced costs for Local Government and RLPBs.

Broadly speaking the whole community/region will benefit from the implementation of this plan.

It also aims to improve networks between stakeholders within the Riverina. Benefits will accrue as a result of this plan bringing together people with a common interest in the management of Spiny Burrgrass.

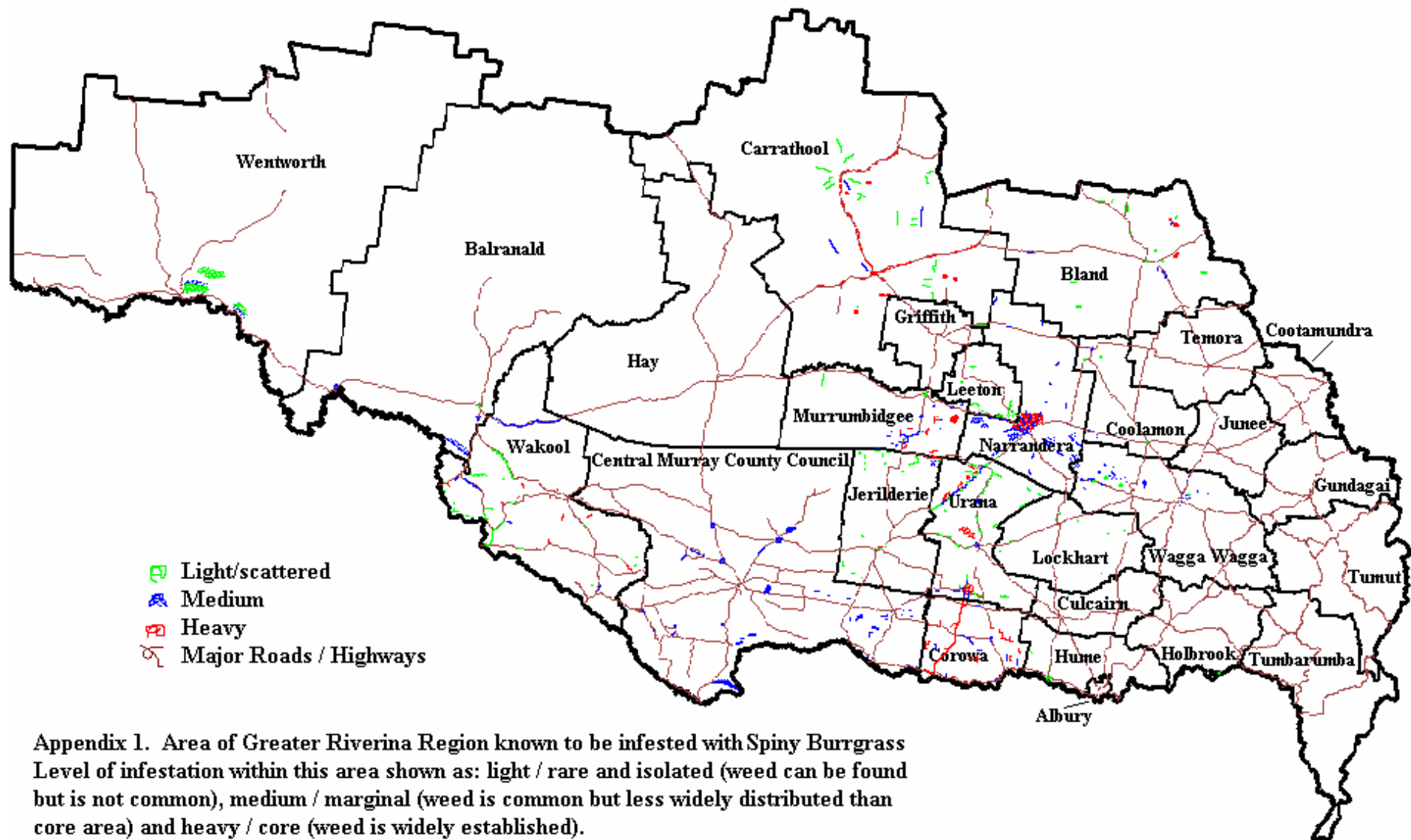
Cost savings through preventing this weed from spreading further, although difficult to quantify will be significant.

9.0 RESOURCES

- Agfact P7.6.21 2nd edition (1987) Spiny burrgrass. Department of Agriculture New South Wales
- Draft SBG management plan, Sept 97 to May 01. Department of Agriculture New South Wales
- Whiteley, J. (nd) Spiny Burrgrass. NSW Ag, GRDC, Pastures Pay.
- Weed identification notes SA APCC. 'Innocent weed' 2002
- Bowcher, A and Lee, T (2003) Integrated Weed Management: Spiny burrgrass. Fact Sheet, CRC for Australian Weed Management.
- Parson, W.T and Cuthbertson, E.G (1992) Noxious Weeds of Australia. Inkata: Melbourne.
- Auld, B.A and Medd, R.W. (1997) Weeds. An Illustrated botanical guide to the Weeds of Australia. Inkata: Melbourne.
- Cunningham, G.M., Mulham, W.E., Milthorpe, P.L. and Leigh, J.H (1992). Plants of Western NSW. Inkata: Melbourne.

ACKNOWLEDGEMENTS

The authors wish to thank the stakeholders who assisted with the production of this document. Their contributions have enriched this regional weed management plan.



Appendix 1. Area of Greater Riverina Region known to be infested with Spiny Burrgrass
 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.