



REGIONAL WEED MANAGEMENT PLAN

1.1 PLAN TITLE: COOLATAI GRASS DUAL REGIONAL MANAGEMENT PLAN

1.2 PLAN PROPONENTS

Regional Weeds Advisory Committee: Macquarie Valley Weeds Advisory Committee and Lachlan Valley Noxious Plants Advisory Committee

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Signature:MVWAC Chairman

Date:

Signature:LVNPAC Chairman

Date:

1.3 NAME OF PLANT(S)

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Botanical Name(s): *Hyparrhenia hirta*

Common Name(s) Coolatai Grass

1.4 PLAN PERIOD (not to exceed five years)

Starting date: 01/07/2007

Completion date: 30/06/2012

1.5 AREA OF OPERATION: The Local Control Authorities (LCA) and Rural Lands Protection Boards (RLPB) of the Macquarie Valley Weeds Advisory Committee and the Lachlan Valley Noxious Plants Advisory Committee, but especially:

Cabonne Council

Cootamundra Shire Council

Dubbo City Council

Forbes Shire Council

Mid Western Regional Council

Narromine Shire Council

Parkes Shire Council

Wellington Council

Central Tablelands RLPB

Dubbo RLPB

1.6 AIM: To suppress and manage Coolatai Grass infestations to minimise damage to agriculture and the environment

1.7 OBJECTIVES:

1. Identify all existing and emerging infestations
2. Reduce all infestations on public land by 80%
3. Reduce all infestations on private lands by 60%
4. Educate the public in identification and control techniques

2.0 STAKEHOLDERS

2.1 Signatories

Participating Councils:

Cabonne Council	Cootamundra Shire Council
Dubbo City Council	Forbes Shire Council
Mid Western Regional Council	Narromine Shire Council
Parkes Shire Council	Wellington Council

Participating RLPB's:

Central Tablelands	Dubbo
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2.2 Other Stakeholders

Dept. of Natural Resources
Dept. of Primary Industries (DPI)
Australian Rail Track Corporation
State Forests
National Parks & Wildlife Service
Catchment Management Authorities (CMA's)
Regional Landcare Co-ordinators

3.0 BACKGROUND and JUSTIFICATION

3.1 Weed History and Biology

Coolatai occurs naturally in the Mediterranean region and in the winter rainfall areas of South Africa and was first introduced to NSW in the 1940's as an erosion control effort. It has since spread rapidly along the roadsides and rail corridors of all states except Tasmania and now dominates large areas of pasture, roadsides, travelling stock routes and areas of remnant vegetation.

Coolatai Grass is a tufted perennial and can form a dense cover that excludes native regeneration. Swards of the grass become so dense that few native plant species can survive within them.

It can grow to a height of 1.5m and it has pale greyish-green leaves. Bluish-purple basal stems form a dense base that protects it from overgrazing and fire. It can grow on a wide range of soils from heavy black earths to lighter textured granites where it really dominates. It does not need disturbance such as grazing to quickly dominate grasslands or pastures. However it is very combustible and burns with a hot flame, changing the fuel load in plant communities. The changed structure and fire regimes of the habitat impacts on both native vertebrate and invertebrate fauna. After fire it recovers very quickly and prevents other species re-establishing.

During its seeding phase, the plant produces thousands of tiny, sticky seeds that adhere readily to animals, farm machinery and motor vehicles.

Coolatai grass is sensitive to low temperature (below 15°C) during seed germination, and especially during the seedling stage, which makes autumn establishment low in temperate climates. This frost sensitivity also means it hays off in winter. For this species to remain of grazing value, grazing pressure must be kept heavy to prevent seeding and to keep grass short and palatable as established plants quickly become rank and unpalatable.

Coolatai grass is difficult to control with herbicides alone; better results are gained through integrated management techniques. Studies have shown glyphosate applied in autumn and flupropanate applied in autumn or spring were the most effective in the long term, reducing Coolatai grass dry matter yields by 70-80%.

3.2 Method and Rate of Spread

Coolatai Grass is a prolific seeder; it produces thousands of seeds each season. Animals, humans, machinery and vehicles easily spread the seeds when the seeds stick to surfaces, clothing or fur. The

way it is spreading along roadsides, rail verges, and travelling stock routes suggest that human based activities such as slashing are the main cause of seed dispersal.

The total area infested is expanding rapidly and has been estimated to be doubling in size every ten years.

3.3 Distribution and Potential Spread

Infestations can currently be found in all mainland states and territories of Australia. Within NSW it is found mainly in the eastern regions but can be seen spreading westward. It mostly spreads along roadsides and TSR's, and is dispersed to other sites from there. It appears not to be limited by soil type or climatic conditions and can spread widely.

Dubbo City Council – infestations are located along the Golden Hwy, Obley Rd, Barbical Rd (Des Mackey, Dubbo City Council).

Wellington Council – outbreaks of Coolatai Grass have been found on Burrendong Way, Mitchell Hwy, and near Spicer's Creek (Andrew Cosier, Wellington Council).

Narromine Shire Council – four infestations in Narromine Shire, found on the Newell Hwy, Obley Rd, Peak Hill Railway Rd, and near the township of Eumungerie (Ashley Bullock, Narromine Shire Council).

Mid Western Regional Council – infestations are found near Mudgee Airport, and the township of Bylong (Wendy Bushell, Mid Western Regional Council).

Other outbreaks have been found in Cabonne, Orange City, and Cowra Shire.

3.4 Null Hypothesis

If Coolatai Grass is not controlled, this species will have extreme impacts including:

- Degradation of natural areas, especially threatened grassy woodland ecosystems
- Loss of biodiversity of native flora that are out-competed, and fauna that cannot use this species as a resource
- Increased fire risk and changed fire regimes of natural and agricultural areas
- Degradation of grazing lands leading to production losses and reduced land values
- Extremely widespread infestations due to this species exponential spread

3.5 Justification and Description Problem

- Grazing production research has found that Coolatai grass is largely unpalatable and low in nutrient value to livestock, resulting in significant loss of carrying capacity and income to land-holders and, therefore, significant losses to regional economies
- Conservation areas and pastures are particularly at risk due to the species' ability to invade undisturbed grasslands and grassy woodlands displacing many native and more valued pasture species.
- Coolatai Grass appears to thrive where rotational grazing is practised.
- It would appear the only way to manage this grass is to set stock at high density which is not recognised best practice as such management impacts on native plants, increases erosion and exotic plant species, and decreases the soil's productive capacity.
- Invasion of native plant communities by exotic perennial grasses such as Coolatai Grass is listed as a Key Threatening Process in Schedule 3 of the Threatened Species Conservation Act

4.0 LEGISLATIVE and REGULATORY SITUATION

4.1 Current Declaration

This species is not currently declared noxious in MVWAC

Coolatai Grass is declared as a Class 3 weed in Bland Shire and Cootamundra Shire.

4.2 Declaration Changes

MVWAC and LVNPAC will be seeking changes in declaration status of Coolatai Grass. We are seeking a class 3 declaration in the following LCA's:

- Cabonne Council
- Cootamundra Shire Council
- Dubbo City Council
- Forbes Shire Council
- Mid Western Regional Council
- Narromine Shire Council
- Parkes Shire Council
- Wellington Council

5.0 CONSIDERATIONS and OPPORTUNITIES

5.1 Financial Support for Plan Implementation

Funding opportunities will be sought initially through DPI's New Incursion funding program, and then through DPI's Group Project program and Lachlan and Central West CMA's.

5.2 Barriers and Contingencies

Barriers:

- Identification of species is difficult as it is very similar to native species
- Lack of follow-up work resulting in a less effective control program
- Adjacent land use sensitive to chemicals, such as vineyards or organic restrictions
- Poor management of Coolatai pastures.
- Continuation of roadside slashing and mowing of infested areas

Contingencies:

- Drought – Coolatai's drought tolerance

5.3 Links to Other Strategies

- National Weed Strategy
- NSW Weed Strategy

6.0 ACTION PLAN

ACTION PLAN FOR CONTROL:	Performance indicator	Who	Objectives addressed (Number)
Identify all existing and emerging infestations	<p>All infestations are mapped and recorded</p> <p>Maps are updated annually</p> <p>Records are updated after control</p> <p>Records used to show reductions in infestation levels</p>	LCA's & RLPB's	1.7.1
Control all infestations	<p>Declaration application submitted</p> <p>100% of roadsides inspected and treated annually</p> <p>Small infestations are manually removed</p> <p>Larger infestations are treated appropriately (i.e. roadsides not slashed during seeding)</p> <p>Controlled sites are monitored and re-treated</p> <p>All treatment programs occur before seed is set, each season</p> <p>100% of known infested properties and neighbouring sites inspected annually</p> <p>Act is enforced</p>	LCA's, RLPB's, Landowners, DPI	1.7.2 & 1.7.3
Educate the public in identification and control techniques	<p>Coolatai Grass field days held</p> <p>Identification skills of weed officers and landowners improved</p> <p>Information on best management practices given to landowners</p> <p>Media releases made when appropriate</p>	LCA's, DPI	1.7.4

7.0 MONITOR and REVIEW PROCESS

7.1 Monitoring

This plan will be monitored by Weed Officers and progress reviewed annually by MVWAC and LVNPAC. This will include discussions on increase or decrease, rate of spread, the potential range, successful management strategies and their results.

7.2 Review Process

An annual review of this plan and management strategies will be held to ensure stakeholder's efforts match the performance indicators and that key milestones are achieved. Further opportunities to combine other weed control or land management efforts into an integrated program including Athel Pine will be actively pursued, as will the use of any future advances in biological, chemical or management control techniques.

8.0 BENEFITS

This plan will benefit the Macquarie and Lachlan Valley regions by:

- Decreasing future control costs
- Minimising stock health problems
- Maintaining a certified seed industry
- Maintaining the area as a source of clean fodder
- Maintaining agricultural production
- Improving biodiversity and site health of natural environments

9.0 RESOURCES

Des Mackey, Dubbo City Council

JR McWilliam, K Shanker and RB Knox, 1970. "Effects of temperature and photoperiod on growth and reproductive development in *Hyparrhenia hirta*" *Australian Journal of Agricultural Research* Vol. 21 No. 4, pp 557 – 569

Submission to the Standing Committee Inquiry into the Regulation, Control and Management of Invasive Species and the *Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002*. From: The North West Vegetation Forum (New South Wales).

Associate Professor Paul Adam, 2003. NSW Scientific Committee - Invasion of native plant communities by exotic perennial grasses - key threatening process declaration: final determination

Chris Nadolny, 2001. "The Coolatai grass threat! *Hyparrhenia hirta*" *Woodland Wanderings Volume 1, Issue 2*. Dept of Land & Water Conservation.

GM Lodge, MG McMillan, LH McCormick and AS Cook, 1994. "Effects of glyphosate, flupropanate and 2,2-DPA on *Hyparrhenia hirta* (L.) Stapf (Coolatai grass)" *Australian Journal of Experimental Agriculture* Vol. 34 No. 4, pp 479 - 485

Dr. Chris Nadolny, 2005. "Cooling off the Coolatai" *National Parks Journal* Vol 49 No 4