1.0 Cover Page

NSW DEPARTMENT OF PRIMARY INDUSTRIES

REGIONAL WEED MANAGEMENT PLAN

1.1 Plan Title: ***Riverina Chilean needle grass Management Plan*** as Revised 2006 **No.**

1.2 Plan Proponents / Applicant Contact Details

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

Address: C/o Greater Hume Shire Council, PO Box 382, Jindera NSW 2642

Contact person: Paula Ash

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

Signature: Western Group Representative: . . . . . Date: . . . . . .

1.3 Name of Plant(s)

WONS - Yes

Scientific name: *Nassella neesiana* Common name: Chilean needle grass

1.4 Plan Period

Starting date: 01/07/2006 Completion date: 30/06/2011

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**). The Region extends across 4 Catchment Management Authority (CMA) areas, being Murray, Murrumbidgee, Lower Murray Darling and the Lachlan.

1.6 Aim: To fully and continuously suppress and destroy Chilean needle grass infestations to prevent spread and protect primary industries and the general environment in the Riverina.

1.7 Objectives:

a. Locate and identify all new infestations of Chilean needle grass in the Riverina.

b. Contain and treat all new infestations of Chilean needle grass within 14 days of detection or before seed set.

c. Contain and reduce existing Chilean needle grass infestations by 10% per annum.

d. Minimise the entry of Chilean needle grass into the Riverina, through increasing community awareness of this weeds impacts.

2.0 STAKEHOLDERS

2.1 Signatories

The following Local Control Authority (**LCA**) and Rural Lands Protection Board (**RLPB**) 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, Griffith City, Greater Hume Shire, 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, Hume RLPB, Murray RLPB, Narrandera RLPB, Riverina RLPB, Wagga Wagga RLPB and Wentworth RLPB.

2.2 Other Stakeholders

The Noxious Weeds Advisory Committee (**NWAC**), NSW Department of Primary Industries (**NSW DPI**), Department of Lands (**DoL**), Murrumbidgee / Murray / Lower Murray Darling / & Lachlan Catchment Management Authorities (**CMA**), Department of Primary Industries (**DPI Victoria**), Department of Sustainability and the Environment (**DSE**), Department of Environment and Conservation (**DEC**), Roads and Traffic Authority (**RTA**) and other relevant land managers.

3.0 BACKGROUND and JUSTIFICATION

3.1 Plan Justification and Description of the Problem

Chilean needle grass (*Nassella neesiana*) is considered a weed of regional and national significance. It has the ability to form dense stands in pastures, bushland and roadsides; ultimately reducing productivity by threatening pastoral and cropping industries, forestry management, endangers plant and animal communities, tourism, recreational amenities and the community. It tolerates drought, fire and heavy grazing, and is an aggressive invader.

Chilean needle grass (CNG) was first reported in Victoria in 1934 at Northcote. Since this time it has developed into a serious weed of North-East Victoria and is slowly creeping into southern New South Wales. The Riverina is largely uninfested with only two shires having isolated infestations. It is for this reason that this plan is being written - in support of a Noxious Weed declaration preventing this 'Weed of National Significance' infesting its potential range - all of the Riverina. The potential distribution of CNG in Australia has been estimated at 41 million ha with substantial areas of Victoria and NSW at risk.

The main concern for this region is the level of CNG infestation in Victorian just over the border. The North-East Catchment Management Authority (Victoria) aim to have all their infestations under long term management plans within 5 years.

The former Hume shire first identified CNG in early 2000 after attending a field day in Victoria. All current infestations were well established and don't appear to be spreading rapidly. At present there are scattered plants along the Riverina Highway, Boxwood Park Rd and a town reserve in Howlong. Trees have unknowingly (by Landcare) been planted over the top of the heavier infestations that occur along Howlong-Brocklesby and Bringa Rds, making control difficult. Existing infestations, which aren't fenced off as tree plantings, are heavily grazed by travelling stock. This may be containing current infestations by reducing seed set but could also be the cause of the two isolated infestations

that have been found in (the former) Hume shire. Infestations have the potential to spread throughout (the former) Hume shire if nothing is done.

Prior to the 05/06 season CNG had not been reported to be on private land, possibly due to agricultural practices adjoining the roadside infestations. Isolated plants are appearing on the northern banks of the Murray River downstream of Howlong - assumingly dispersed in floodwaters. An isolated infestation found in November 2001 on the Riverina Highway (Corowa Shire) was removed immediately upon identification.

Extension and education are key components of this plan. If people are unable to identify CNG, are unaware of the potential problems it can cause, and lack an understanding of management options, then they are unlikely to act. Extension activities will address these issues and be delivered through field days, workshops, media releases, personal contact during inspections and through the provision of printed material to the general public.

The former Hume shire held the first of many identification and control field days in 2002. Fifty people showed up with a keen interest to learn more about this weed. All Weed Officers from Eastern Riverina and many from Western Riverina were in attendance increasing the general awareness across the region.

CNG is a new and emerging weed in the Riverina as well as a WoNS. In the 05/06 season new outbreaks have been found in Corowa, Greater Hume, Urana, Tumut and Jerilderie Shires. The majority (except GHS) being on roadsides. Infestations in Corowa Shire increased in the 05/06 season; particularly on the Riverina hwy, Howlong-Brocklesby rd and Howlong. New infestations were found in Corowa and infestations continue to spread along the Murray River floodplain from Victoria.

The number of infestations in Greater Hume Shire increased significantly in the 05/06 spring/summer season. Live plants were on display at all major shire offices and a letter box drop (see appendix 2.) was carried out in all areas with potential for infestations, resulting in several private property infestations being identified as well as a few TSR infestations. All reported sightings were inspected and majority turned out to be CNG. One private property has approximately 10ha of CNG that will require careful management to contain. New infestations were found on roadsides as well as TSRs.

Monitoring of sites continue at Albury, Urana and Tumut. Albury remaining free; Tumut and Urana's isolated infestations reappeared and were treated prior to seed set. All sites will continue to be monitored for new germinations. A new infestation was found on the side of the Newell highway south of Jerilderie in early flowering. It was controlled immediately and followed up with an awareness campaign. To date no further infestations have been identified.

3.2 The "Do Nothing" Option

Chilean needle grass is appearing on private property in Greater Hume Shire and starting to be found moving out from initial infestations. All outlying infestations are being found on major roads and highways - indicating it is moving. If nothing were to be done with the current infestations in the Riverina – the potential would be devastating. Chilean needle grass is quite widespread across the border (Victoria) with severe infestations occurring along the Hume hwy and in Wodonga. Chilean needle grass is not declared for control in Victoria. The Riverina is acting as a buffer for the rest of southern NSW. If let go, and going on the current rate of spread experienced over the last few years...

The best chance we have with this weed – is keeping it out of clean areas. The remainder of the Riverina is free of Chilean needle grass and the LCA's of this region would like to keep it this way. If

left untouched, the cost of future control has the potential to extend beyond all stakeholders' available resources.

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

3.3 Distribution of Infestations

Refer to Appendices for distribution maps.

3.4 Weed Biology

Chilean needle grass is a tussocky perennial grass that forms dense stands in pastures, bushland and roadsides. In the absence of grazing it can grow to 1 metre in height. The leaves are 1-5mm wide and strongly ribbed on their upper surface, with rough margins.

The best identifying feature is the seed. At the junction of the seed and the awn (tail of the seed) there is a raised crown (corona) or ridge of small teeth encircling the awn. The stem seeds are located at the nodes (swellings that give rise to leaves) of the flowering stem and are concealed by the leaf sheath. These seeds allow the plant to reproduce even if flowering has been prevented.

3.5 Method and Rate of Spread

The vigour of Chilean needle grass can be partly explained by its efficient system of seed production. This grass produces two types of seeds, normal seeds borne on flower heads, and cleistogenes (stem seeds) which are formed at the nodes and sheath base of the flowering stems. The cleistogenes allow the plant to reproduce even if flowering has been prevented. It has the capability of producing more than 20,000 seeds per square metre in a good season, these seeds remaining viable for many years. The seeds have very sharp points that have been reported to penetrate and damage the fleece, skin and eyes of livestock, also becoming readily attached to clothing and machinery. Floodwaters also play a significant role in seed dispersal. Wind dispersal of seed appears to be almost negligible.

Within the former Hume shire it appears that the main methods of dispersal are machinery and travelling stock. It is obvious with one recently found infestation that it has been spread by machinery as a single infestation has spread down a road reserve after being slashed. Floodwaters also appear to have spread CNG along a creek system in the former Hume shire as well as along parts of the Murray River floodplain in Corowa Shire.

3.6 Species Management

Prevention is the best method of control for this weed, as once it becomes established it is difficult to eradicate. With our region having limited infestations, removal is high priority. Control the few existing infestations and monitor the sites annually for 5-10 years removing any young plants that may germinate from the seed bank.

Burning does not remove Chilean needle grass, but it can reduce biomass and expose individual plants for selective application of herbicides or physical removal.

Continual surveillance by LCA's and education of Land managers across the region are the best tools in minimising the spread of Chilean needle grass. If new infestations are spotted immediate control

action will be taken. Hygiene measures will be promoted to prevent further spread across the region. DSE (Victoria) are conducting trials on the most effective techniques - keep updated.

All shires to liaise with RLPBs in regard to travelling stock on infested roadsides. Encourage consultation. Possibly fence off infestations when seeding to prevent spread and allow for treatment to be carried out. Grazing is possibly a control option when plants are not seeding.

Encourage consultation with local Landcare groups, as roadside plantings have greatly reduced management options on two specific roadside infestations in the former Hume shire. These infestations were present prior to trees being planted, the local Weed Officer not being notified until after the event.

3.7 Key Land Managers

All land managers listed below are critical in the success or failure of this plan. If Chilean needle grass were to be left uncontrolled due to a lack of awareness of its potential distribution and potential negative effect, the Riverina could end up with severe infestations that would cost the community greatly.

Roads and Traffic Authority, Department of Lands, Rural Lands Protection Boards, Local Control Authority's, Landholders / Land managers, Department of Primary Industries Victoria and Department of Sustainability and the Environment.

4.0 LEGISLATIVE and REGULATORY SITUATION

4.1 Current Declaration

Chilean needle grass is currently declared a Class 3 noxious weed in all LCAs across the Riverina. “The plant must be fully and continuously suppressed and destroyed and the plant may not be sold, propagated or knowingly distributed”.

5.0 CONSIDERATIONS and OPPORTUNITIES

5.1 Financial support to carry out the plan

Chilean needle grass only infests a small portion of six shires within this region. There is a significant opportunity to prevent further spread across the Riverina. At present this weed is not commonly recognised, an extensive awareness campaign will lift Chilean needle grass' profile. Outside funding opportunities arise through Landcare and other community groups that will be advantageous to the fulfilment of this plan. This is a Weed of National Significance therefore funding may also become available under this program.

A Cross Border Liaison Committee needs to be developed to look into weed and seed transfer across the border as well as increase our resources and knowledge on best management practices. DSE are undertaking chemical trials in the Rutherglen area. We need to liaise with them to keep up to date on chemical options, as currently there are not many available.

The National Coordinator for Chilean needle grass is now located at the Wodonga DPI Victoria office – a stone’s throw from the majority of our infestations. Great opportunity to liaise and organise cross border campaigns, including Id field days, media releases etc leading up to the growing season.

Discussions have taken place between Murray CMA, GHS and affected landholders as to the appropriate management techniques for the newly identified private property infestations.

Chilean needle grass has been listed along with a number of other 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.

5.4 Links to other Strategies

- The National Weeds Strategy (Australia).
- The New South Wales Weeds Strategy.
- The NWAC Strategy – Noxious Weed Control Extension.
- Chilean needle grass Strategy – Weeds of National Significance.
- Catchment Action Plans.
- Regional Weed Strategy – Murray (Draft)
- Regional Weed Strategy – Lower Murray Darling
- Regional Weed Strategy – Murrumbidgee (Draft)
- North East Catchment Management Authority - Chilean needle grass Action plan.
- Victorian Regional Weed Action Plans.

5.5 Barriers and Contingencies

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

- Lack of awareness of the impact of CNG (Obj D, Act 1)
- Lack of knowledge on control options (Obj C, Act 1)
- Difficulty in distinguishing CNG from other grasses at various growing stages (Obj D, Act 1)
- Roadside grazing when plant is in seed and just prior to seed set (Obj C, Act 6)
- Local and Government associated road works in proximity to existing infestations (slashing, grading or realignment works). Machinery hygiene. (Obj D, Act 1)

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

- Drought – movement of fodder across the border (obj D, Act 1)
- Flood – through infested creeks or rivers spreading seed further downstream to uninfested areas. (Obj D, Act 1)

6.0 PERFORMANCE INDICATORS AND ACTIONS

Objective a: Locate and identify all new infestations of Chilean needle grass (CNG) in the Riverina.		
ACTIONS	**PERFORMANCE INDICATORS**	**RESPONSIBILITY**
1. Hold CNG identification field day in Greater Hume Shire and Corowa Shire.	By Dec 2007 all LCA's and RLPBs able to identify CNG in field.	LCA's, RLPBs
2. Inspect all roads and highways during summer.	All roads inspected in Southern part of region between October and February each year. All roads inspected in Northern part of region once every two years.	LCA's LCA's
3. Inspect all saleyards in southern part of region (stock yards) from late spring to early summer.	Sale yards inspected.	LCA's, RLPBs & other stakeholders
4. Inspect for CNG as part of routine property inspection programs.	Property inspection programs implemented.	LCA's
5. Treat and /remove new infestations prior to seed set. If found after seed set – remove the seed heads, treat and GPS so the site can be monitored the following season for germinations.	All new infestations treated / removed prior to seed set. Late findings are mapped and the site is inspected early next season for germinations.	LCAs, RLPBs, Landholders
6. Undertake specific surveys for potential CNG sites - downwind of an existing site.	Property inspection programs implemented.	LCA's
7. Field staff and Landholders encouraged to report and map any new sightings of CNG. Ref: National CNG Strategy 2.1.2	Map developed and regularly being updated.	LCA's and Landholders.
Objective b: Contain and treat all new infestations of Chilean needle grass within 14 days of detection or before seed set.		
ACTIONS	**PERFORMANCE INDICATORS**	**RESPONSIBILITY**
1. Treat and / remove new infestations.	Infestations treated and / removed within 14 days or before seed set.	LCA's and Landholders
2. Reinspect and treat any germinations at old infestation sites annually (late spring to early summer).	Old sites inspected, new germinations treated (Oct-Nov).	LCA's and Landholders
3. Map and maintain detailed records of infestations. Add to regional map.	Regional map updated annually. Records maintained.	LCA's

Objective c: Contain and reduce existing Chilean needle grass infestations by 10% per annum.		
ACTIONS	**PERFORMANCE INDICATORS**	**RESPONSIBILITY**
1. Liaise with Landcare, RLPBs, NRE and other Government bodies on current infestations and control options.	Organisations provided with current infestation map, current best practice management, and aware of current roadside management.	LCAs, RLPBs, CMAs
2. Isolated infestations along Riverina Highway, Boxwood Park rd and Howlong township treated twice per annum.	Infestations treated during October with a follow-up in November.	Greater Hume Shire and Corowa Shire
3. Heavier infestations along Howlong-Brocklesby rd and Bringa rd treated twice per annum.	Infestations treated during October with a follow-up in November.	Greater Hume Shire and Corowa Shire
4. Field staff and Landholders encouraged to report and map any new sightings of CNG. Ref: National CNG Strategy 2.1.2.	Map developed and regularly being updated.	LCAs, RLPBs and landholders
5. Treat known infestations across the Riverina twice per annum prior to seed set; follow-up by treating any regrowth.	All known infestations treated and re-treated annually prior to seed set.	LCAs, RLPBs, landholders
6. Liaise with RLPBs - possibly restrict grazing along infested roadsides or fence off infestations while in seed.	Infested areas kept free of stock whilst in seed.	LCAs, RLPBs and Landholders
Objective d: Minimise the entry of Chilean needle grass into the Riverina, through increasing community awareness of this weeds impacts. Ref: National CNG Strategy 2.1.1.		
ACTIONS	**PERFORMANCE INDICATORS**	**RESPONSIBILITY**
1. Run extension program, in conjunction with NRE, targeted at relevant Landmanagers, industries and the general public; based on outlining the problems this weed can cause, its recognition and; identified IWM options (inclusive of hygiene practices to minimise movement of seed, especially in fodder and flood waters).	- At least 3 specific field days held over the plan period, possibly using weeds caravan. - Hold field days at different times during the season to identify the varying stages of growth with a comparison against other confusing species. - At least two specific CNG media releases per annum. - Information brochures handed out to new Landmanagers. - Possibly include footage into weed advertising campaign.	LCA's.
2. All North East (Victoria) infestations to be under long term management plans.	Management plans in place.	North East Catchment Management Authority, DPI/DSE.

7.0 MONITOR AND REVIEW PROCESS

The Chilean needle grass sub-committee will meet in March each year to review previous years activities / progress and check 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 (especially adjoining LCA's). Where appropriate, renew plan commitment and discuss Regional Group Project Funding Application for this weed so that it can be develop in time for the May 1st deadline.

Regional Coordinator to prepare annual Regional Group Project Report as at 30th June for the NWAC by September 30th. The preparation of this report will require all participating LCAs and RLPBs receiving funding for this weed to submit a signed financial statement, outlining fund expenditure, to the coordinator for audit purposes along with a written progress report.

8.0 BENEFITS

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

- Cooperative approach to Chilean needle grass management across the Riverina.
- Protection of threatened species, communities and native grasslands.
- Protection of uninfested lands.
- Increased biodiversity
- Prevention of potential control costs for future land managers
- Improved stakeholder networks.

The cost savings through the control of Chilean needle grass from the increase in productivity will be significant. Once Chilean needle grass is established it is very difficult and costly to control (estimated at $60 - $120 per ha annually). Benefits will accrue as a result of this plan bringing together people with an interest in the problems caused by Chilean needle grass, an interest which provides a common focus across the region in preventing its establishment. The cost savings through preventing this weed from establishing will be significant, although at this stage it is difficult to have a precise estimation.

9.0 RESOURCES

- References and Further Readings

Landcare Notes PP0086. (1999). *Chilean needle grass Identification*. Victorian Department of Natural Resources and Environment.

Landcare Notes PP1/001. (1996). *Pest Plant Identification: Chilean needle grass, Stipa neesiana*. Victorian Department of Natural Resources and Environment.

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McLaren, D.A.; Stajsic, V. and Gardener, M.R. (1998) The Distribution and Impact of South / North American Stipoid Grasses (Poaceae: Stipeae) In Australia. Plant Protection Quarterly 13(2):62-70.

Weeds of National Significance: Weed Management Guide *Chilean needle grass – Nassella neesiana*, Department of the Environment and Heritage and the CRC for Australian Weed Management, 2003.

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

DISCLAIMER

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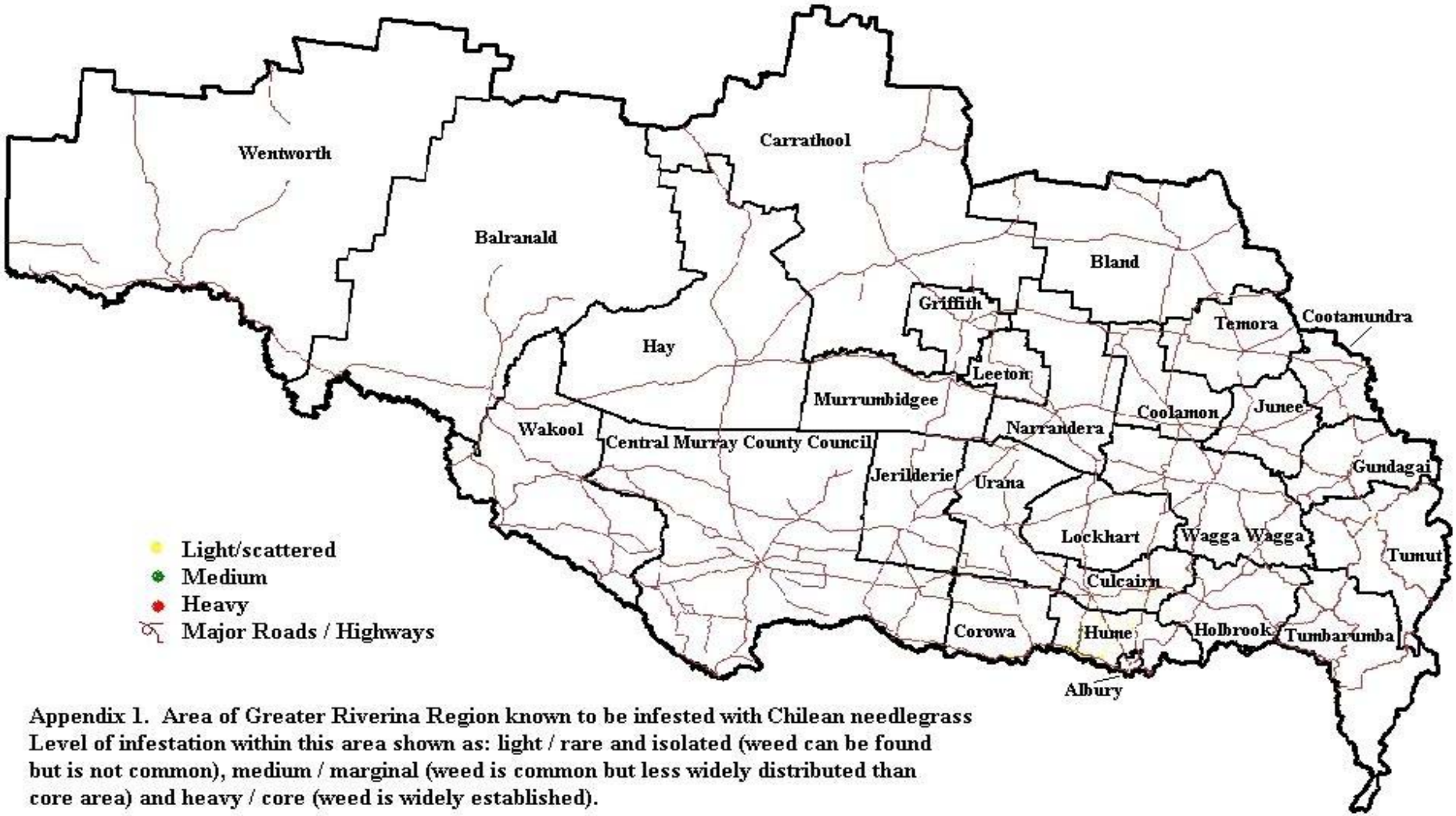

Appendix 1. Area of Greater Riverina Region known to be infested with Chilean needlegrass Level of infestation within this area shown as: light / rare and isolated (weed can be found but is not common), medium / marginal (weed is common but less widely distributed than core area) and heavy / core (weed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

Appendix 2.

HAVE YOU SEEN THIS WEED?

CHILEAN NEEDLE GRASS

New and emerging grass in
Greater Hume Shire

NOT WIDESPREAD

Plant on display at Jindera Office

HUGE POTENTIAL TO IMPACT ON LANDHOLDERS IN THE AREA

Means of spread (SEED):

- Machinery – Slashing / Grading
- Animals (fur, hair, wool)
- Humans (Socks, clothing)
- Water

BE AWARE!

Further information contact:

Greater Hume Shire Council Weeds Section

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