

REGIONAL WEED MANAGEMENT PLAN

1.1 PLAN TITLE: Chilean needle grass Regional Management Plan

1.2 PLAN PROPONENTS

Regional Weeds Advisory Committee: Southern Tablelands & South Coast Noxious Plants Committee

Address: Mulwaree Shire Council, PO Box 148, GOULBURN, NSW 2580

Contact person: Paul Brown

Telephone number: 4823 7410

Facsimile number: 4821 9668

Email address: paul.brown@mulwaree.nsw.gov.au

Signature: Chairperson: Date:

1.3 NAME OF PLANT(S)

WONS Y/N

Yes

Botanical name(s): *Nassella neesiana*

Common name(s): Chilean needlegrass

1.4 PLAN PERIOD

Starting date: 1st July 2002 Completion date: 30th June 2007

1.5 AREA OF OPERATION: Southern Tablelands & South Coast Region

1.6 AIM:

To restrict expansion of the current Chilean needle grass distribution and existing core infestations are strategically controlled to provide maximum benefit for effort.

1.7 OBJECTIVES:

1. To aggressively apply prevention and early intervention techniques where weed is currently absent or rare & isolated.
2. To strategically manage, and where possible, control marginal and core infestations.
3. To improve species identification by landholders and practitioners
4. To better define distribution of species and practical management options
5. To utilise regulation as a means of control in LCAs where the species is not currently declared
6. To follow-up control and rehabilitate where the species has been controlled
7. To obtain support to develop and implement an incentive scheme to control the species

2.0 STAKEHOLDERS

2.1 Signatories

The following organisations have signed an agreement to implement the Plan:

NSW Agriculture
Councils of the Southern Tablelands and South Coast
Rural Lands Protection Boards

2.2 Other Stakeholders

The following organisations have been involved in the planning process, either through notification or actual participation:

NSW National Parks and Wildlife Service
Environment Australia (Booderee National Park)
Environment ACT
NSW State Forests
Aboriginal Land Councils
Catchment Management Boards
State Rail Authority
Roads and Traffic Authority
Nursery Industry Association
National Farmers Association
Landholders / Dairy Farmers / Cattle Producers
Landcare
Coastcare

3.0 BACKGROUND

3.1 Reason for Plan

Chilean needle grass is a highly invasive species that threatens pasture, native grassland communities and roadside environments in southeastern Australia.

The viability of grazing land and land values may be threatened. Large amounts of unpalatable flower stalks with little leaf material are produced in the warmer months. Invaded pastures therefore have a significantly reduced summer stock carrying capacity (NRE 1999). In addition seeds have been reported to penetrate and damage the fleece, skin and eyes of livestock (NRE 1999).

Chilean needle grass competes strongly in native grasslands which are amongst the most threatened communities in Australia and has the potential to be the worst environmental weed of native grasslands in southeastern Australia (ARMCANZ & ANZECCFM 2001). The species is an emerging weed with a potential distribution in Australia estimated to exceed 40 million hectares (NRE 1999). Chilean needle grass is in the same genus as Serrated Tussock and Mexican Feather Grass which are highly invasive weed species.

Null hypothesis: The range of Chilean needle grass in NSW and the ACT would expand significantly. The current distribution and density will significantly increase with considerable financial costs and loss of currently productive pasture and natural environments. Some

potential losses are irreversible and may affect society as a whole (e.g. lost threatened species/communities), other largely irreversible losses may be more specific to individuals or communities if they are forced to sell-up and leave.

3.2 Description of the problem

Chilean needle grass is a serious pasture and environmental weed in south-eastern Australia as it forms dense stands in pastures, bushland and roadsides. The species tolerates disturbance such as drought and heavy grazing. Currently, Chilean needle grass infestations are restricted to the ACT and surrounding areas. However, this weed threatens agricultural and natural areas throughout much of the Region, including the Monaro and coastal lands.

Chilean needle grass infestations impact on the biological, agricultural and eco-tourism values of the Region through:

- Invasion and replacement of native grass species and useful pasture species;
- Competition with native threatened grassland species;
- Alteration and / or reduction of available habitat for many native fauna species;
- Reduced pasture production and stock carrying capacity (productivity may decrease by as much as 50% due to heavy infestations);
- Increased weed control costs (estimated at \$25 / ha) (ARMCANZ & ANZECCFM 2001).

Refer to section 5.5 (Barriers and contingencies) for identification of risks that exist which may limit the achievement of stated outcomes.

3.3 Distribution of infestations

Chilean needle grass occurs in temperate areas predominantly in pastures and grassy woodlands, on roadsides, along creeks and rivers and increasingly in native grasslands. The current known range for the species extends from the Northern Tablelands of NSW, along the Great Dividing Range and its slopes through Victoria, to southeastern South Australia. However, it is likely that there are significant Chilean needle grass infestations that have not yet been documented (ARMCANZ & ANZECCFM 2001).

Within the Southern Tablelands and South Coast Region, Chilean needle grass occurs in the following Local Control Authority areas: Goulburn City Council, Mulwaree Shire Council, Wingecarribee Shire Council and the ACT as depicted in Map 1.

MAP TO BE INSERTED HERE

3.4 Weed biology / ecology

Chilean needle grass is a tussocky perennial grass, very similar to some native spear grasses. The species grows to about 1m high. Two types of seed are produced by Chilean needle grass: normal seeds that are produced at flowering and stem seeds located at nodes of the flowering stem and concealed by the leaf sheath. The stem seeds allow the plant to reproduce even if flowering has been prevented (NRE 1999). The species is characterised by high seedling survival (ARMCANZ & ANZECCFM 2001).

Chilean needle grass is a prolific seeder. In a year of good rainfall, the species can produce up to 22,203 seeds m⁻² (Weed Watch 1999). Seeds remain viable for six years or more (Blood 2001). Research indicates that eradication of well-established and large infestations of Chilean needle grass from pastures is impossible (Weed Watch 1999).

3.5 Method and rate of spread

Chilean needle grass is predominantly dispersed by seed. Seed dispersal is effected when seeds attach to the coats of animals, clothing and machinery. It may also be spread through fodder and movement of stock. Seed dispersal via floodwaters is significant (NRE 1999). The species reproduction is enhanced by production of stem seeds that enable it to reproduce despite slashing and fire (ARMCANZ & ANZECCFM 2001).

Chilean needle grass has little ability to spread by wind, and does not produce fleshy fruits amenable to bird/vertebrate dispersal. Consequently, human-mediated vectors represent the greatest dispersal hazard. Practices such as implementing plant equipment and material hygiene, and restricting livestock movement from infested areas to clean areas are important in reducing the species spread. Local quarantine methods and zones should be established to address seed dispersal issues. Further initiatives to restrict movement of Chilean needle grass seed may include (ARMCANZ & ANZECCFM 2001):

- development of codes of practice,
- identification training for land managers, road-side management authorities, graziers, and National Park Staff
- altering roadside slashing and mowing regimes, ie, improve hygiene, prevent roadside slashing occurring when species is seeding; and prevent roadside slashing starting in core infestations and moving out into clean or marginal areas.
- training for managers and employees and
- hygiene requirements included in tender or contract specifications

3.6 Roles and responsibilities of land managers

Implementation of the Regional Plan by the following land managers is considered critical to the success of the Plan:

- Private landholders
- Roadside and easement managers (RTA, SCA, State Rail, ACTEW / AGL, Australian Pipeline, Country / Integral Energy)
- Land management authorities (Environment Australia, Environment ACT, Rural Lands Protection Boards, NSW National Parks and Wildlife Service, Forest industries, and local councils)

4.0 LEGISLATIVE SITUATION

4.1 Current declaration

Chilean needle grass is a prohibited species under *The Quarantine Act 1908* and may not be brought into, or sold in Australia (ARMCANZ & ANZECCFM 2001). The species has been declared noxious under the *Noxious Weeds Act 1993* in the Cooma-Monaro and Snowy River Shires. It is a declared pest plant under the *Land (Planning and Environment) Act 1991* in the ACT (refer to Appendix 1).

Under the *Noxious Weeds Act 1993* (NSW), W2 weeds must be fully and continuously suppressed and destroyed. Under the *Land (Planning and Environment) Act 1991* (ACT) an order may be given to control pest plants. Consequently all land managers have a legal obligation to control W2 or pest plants on their property.

4.2 Declaration changes

Few Councils in the Region have declared Chilean needle grass as noxious. Currently Bombala Shire Council is seeking a W4e declaration for the species (refer to Appendix 4). A W4e declaration states that the weed must be fully and continuously suppressed and destroyed. All reasonable precautions must be taken to ensure produce, soil, livestock, equipment and vehicles are free of the weed before sale or movement from an infested area of the property.

Further declaration changes for Local Councils in the Region are probable as Chilean needle grass is likely to be more widespread than current mapping indicates. Declaration changes according to Table 1 are recommended for Chilean needle grass (refer to Appendix 1 for status throughout the Region).

Table 1: Current and proposed declarations for Chilean needle grass in the Region

Local Council	Current declaration	Proposed declaration	Reasoning for changes to current declaration
ACT	Declared pest	Declared pest	Species declaration is sufficient
Cooma-Monaro	W2	W2	Species declaration is sufficient
Snowy River	W2	W2	Species declaration is sufficient
Eurobodalla	Not declared	W2	W2 declaration will allow the LCA to use regulation and act rapidly to suppress infestations found in the LCA. It is considered feasible to maintain declaration at W2 and act quickly on any propagules that spread from isolated infestations and surrounding LCAs.
Queanbeyan	Not declared	W2	
Goulburn	Not declared	W3	W3 declaration will allow LCAs to use regulation in the control of the species. The species distribution is suspected to be much wider than current mapping would indicate due to identification difficulties and the species status as an emerging weed. However, a W3 declaration would allow LCAs to act rapidly once existence of the species is established and attempt to limit its dispersal and impact in the Region.
Gunning	Not declared	W3	
Mulwaree	Not declared	W3	
Tallaganda	Not declared	W3	
Wingecarribee	Not declared	W3	
Yass	Not declared	W3	
Yarrowlunla	Not declared	W3	

A W3 declaration in LCAs which have dense, extensive Chilean needle grass infestations may become onerous and difficult to enforce. LCAs may combat this problem by developing a policy clearly stating Council expectations of landholders with dense infestations in meeting their legal obligations.

5.0 CONSIDERATIONS AND OPPORTUNITIES

5.1 Opportunities to be exploited

Funding sources to be investigated include:

- Noxious Weed Grant scheme for control on Council and RLPB land (administered through NSW Agriculture)
- Grants to Landcare, Rivercare and Bushcare groups that meet objectives of Catchment strategies and Natural Heritage Trust

Joint ventures may be pursued through:

- coordinating control programs with Rural Lands Protection Boards on and adjoining Travelling Stock Reserves;
- coordinated control programs with NSW National Parks & Wildlife Service and Environment ACT as Chilean needle grass is a major threat to many state and nationally listed threatened species.

- Opportunity to develop integrated management program field days/publicity to educate land managers on identification and long term management techniques.
- Opportunity to work with researchers from NSW, ACT and Victoria on trials on control techniques.

No specific agreements have been reached on the above opportunities, however given the threat potential the plan has recommended a forum to investigate the above opportunities.

5.2 Species management

Currently, it is considered impossible to eradicate well-established Chilean needle grass infestations from pastures (Gardener 1998). A combination of chemical, mechanical, rehabilitation, competition, grazing management, biological control and hygiene protocols (ARMCANZ & ANZECCFM 2001) are required to reduce the spread and impact of Chilean needle grass in the Region. Refer to ARMCANZ & ANZECCFM (2001; pp 6-8) for information on the above control measures.

The species can produce a large amount of reasonable quality feed. Consequently, grazing strategies in densely infested areas should aim to make Chilean needle grass a more productive component of pastures and thereby reduce its abundance. Short duration, high intensity grazing pressure in summer to remove flower stalks followed by a long rest period may achieve this (Weed Watch 1999).

At present there are no biocontrol agents released in Australia for Chilean needle grass. CSIRO is currently investigating potential agents in Argentina, however, field releases will not occur in Australia until at least 2006 (Kriticos pers. comm. 2002). Conventional control methods will be researched in 2002 subject to approval of an NHT grant application submitted by CSIRO. Five demonstration sites in NSW and Victoria will be established by the CSIRO to monitor the success of various control methods and educate landholders. A site at Goulburn is proposed if the funding application is successful (Kriticos pers. comm. 2002).

5.3 Extension and education

At present little education and extension material is available on Chilean needle grass. An important requirement of the Plan is to increase public awareness of Chilean needle grass and its impacts through:

- production of identification brochures and media campaigns (ARMCANZ & ANZECCFM 2001);
- involvement of community groups such as Landcare groups, Friends groups *etc.* in identification and mapping of Chilean needle grass infestations;
- articles in targeted magazines and journals;
- education and training of stock and pasture management through initiatives such as Prograze
- communicating with CSIRO to establish a second demonstration site in the Region (subject to available funding).

5.4 Links to other strategies

This Plan is linked to the Southern Tablelands and South Coast Regional Weed Strategy. All direct funding proposals and priorities for the Chilean needle grass Regional Plan will support the goals of the NSW Weeds Strategy and Regional Weeds Strategy.

In addition the Plan conforms with the following strategies:

- NSW Weeds Strategy
- NSW Agriculture Corporate Plan 2001/2004
- The National Weeds Strategy – a strategic approach to weed problems of national significance
- Weeds of National Significance Chilean needle grass (*Nassella neesiana*) Strategic Plan

5.5 Barriers and contingencies

The following barriers may limit the success of Chilean needle grass control programmes. These barriers have been addressed by specific actions in Section 6 below:

- Species identification is difficult and consequently awareness of the magnitude of the problem is poor. The current known distribution of the weed is likely to be significantly inaccurate (Action 1 and Action 4 and Action 8)
- Private landholders (including small acreage and absentee landholders) may not have the skills, motivation, money or infrastructure to control Chilean needle grass (Action 4, Action 8, Action 9, and Action 10 and Action 12)
- Inadequate priority currently given to the species across its full distribution, coordination across land tenure boundaries is also deficient (Action 1, Action 5 and Action 10)
- Seed spread is difficult to control especially via plant equipment, lack of material hygiene and movement of livestock from infested areas to clean areas (Action 6)
- Insufficient knowledge is available about the most effective control methods (Action 4, Action 9 and Action 10)
- Knowledge of locations of isolated infestations can be lost when staff leave or transfer in government land management authorities (Action 2)
- Land rehabilitation may be required after control works to avoid reinvasion by Chilean needle grass propagules and other invasive weed species (Action 7)
- Insufficient funding is available to promote awareness and response to problem (Action 12)
- The maintenance of effective on-going control in core areas may be difficult and may result in the infestation of currently clean properties within these areas (Action 4)
- The *Pesticides Act 1999* makes it an offence to harm off-target species. Consequently, appropriate practices are required to minimise risks of off-target effects (Action 11)

The following contingencies cannot be overcome in Chilean needle grass control. These contingencies have been addressed by specific actions in Section 6 below:

- Chilean needle grass may occur in agricultural areas where the value of the land is often less than the costs of controlling the weed, or the weed occurs in non-arable land where rehabilitation will be extremely difficult (ARMCANZ & ANZECCFM 2001) (Action 7 and Action 12)
- Chilean needle grass is a threat along roadsides where coordinated and cooperative management is currently lacking. Funding for roadside work may be unreliable (Action 5 and Action 6)
- There are potentially insufficient resources available to significantly reduce threats to the threatened ecological communities (Action 7)
- The species is difficult to positively identify when it is not flowering.

6.0 ACTIONS AND PERFORMANCE INDICATORS

Current actions associated with the control of Chilean needle grass include activities such as field days (e.g. Mulwaree Shire will hold a field day in conjunction with NSW Agriculture in November 2002). In addition, initial surveys by CSIRO in Argentina have identified a number of pathogens and fungi which act on Chilean needle grass and may assist in control. At present it is unknown whether the studied biocontrols will be released in Australia (Briese *et al* 2001).

Proposed actions for control of Chilean needle grass during the period 2002 - 2007 are given below. As a general principle, prevention of new infestations in areas currently free of Chilean Needle Grass by controlling rare and isolated infestations should be given priority, followed by marginal infestations and then core infestations. However, it is important to continue strategic control in areas mapped as marginal and core (refer to Appendix 2) as per actions listed below. Actions flagged with an asterisk (*) are considered essential components of the plan.

ACTION		Performance Indicator	Who is to be responsible (add others involved)	Objective number
Mapping				
1	<ul style="list-style-type: none"> a) Complete more accurate mapping of Chilean needle grass (CNG) throughout the Region (e.g. at 1:25 000 scale (or larger)). b) Update mapped information (preferably on GIS) at least every second year. c) Seek NHT funding to assist with mapping: use Strategy 2.1.2 and 2.1.5 of the CNG National Strategy as justification d) See also Action 4 below (mapping in core areas) 	<ul style="list-style-type: none"> a) More accurate map produced by July 2003 (note that ID is difficult outside flowering, therefore should be completed between November and February) b) Maps updated at least every second year. c) NHT application submitted by May 2003 	ST&SCNPC (LCAs, DoA, RTA, NPWS, Environment ACT, Telstra, Country / Integral Energy, AGL / ACTEN)	4
Strategic response				
2*	Rare and Isolated populations <ul style="list-style-type: none"> a) All known isolated infestations eradicated¹. b) All rare populations eradicated¹ or reduced to the appropriate level² c) All locations with rare and/or isolated populations to be inspected annually. 	<ul style="list-style-type: none"> a) Currently known isolated infestations eradicated¹ by July 2006. Eradication works are difficult until declaration is achieved. Thus the eradication work schedule is as follows: Year 1: seek declaration, Year 2 - 5: 25% of eradication work occurs annually and is verified through annual reports. 	Affected LCAs (ST&SCNPC Paul Brown)	1

ACTION	Performance Indicator	Who is to be responsible (add others involved)	Objective number
<p>d) Management plans are required by all affected landowners.</p> <p>e) Request Landcare groups and others give priority to rehabilitation of sites where rare and isolated infestations have been eradicated¹ (also see Action 7).</p> <p>f) To assist in annually inspections an appropriate monitoring system and database is to be developed</p>	<p>b) Currently known rare infestations eradicated¹ by July 2006 or at appropriate level. Eradication or control work schedule is as follows: Year 1: seek declaration, Year 2 - 5: 25% of eradication work occurs annually and is verified through annual reports.</p> <p>c) Annual reports indicate inspections occurred.</p> <p>d) Annual reports indicate management plans exist.</p> <p>e) Sites where eradication has occurred are rehabilitated within 1 year.</p> <p>f) Monitoring system and database developed and implemented by June 2003</p>		
<p>3</p> <p>Marginal populations</p> <p>a) All known marginal infestations significantly reduced.</p>	<p>a1) At least 50% of properties affected inspected and appropriate action taken within 1 year of inspection.</p> <p>a2) Currently known marginal infestations reduced by 75% (region-wide) by July 2006. Year 1: seek declaration, Year 2 - 5: 25% of control work occurs annually and is verified through annual reports.</p> <p>a3) Majority of sites where control has occurred are rehabilitated within 1 year.</p>	<p>Affected LCAs</p> <p>(ST&SCNPC Paul Brown)</p>	2
<p>4</p> <p>Core populations</p> <p>a) Identify and map those parts of existing core areas where:</p> <ul style="list-style-type: none"> - control programs over next 5 years could reduce ranking to marginal - natural barriers/control lines could be expanded - significant sized areas are not affected by CNG - control is a priority (e.g. boundary of core areas) <p>b) Encourage and where possible assist landowners with clean properties in core areas.</p>	<p>a) Core area mapping completed by July 2004</p> <p>b) Actions recorded in annual report</p> <p>c) Best practice management practices developed at ST&SCNPC meeting of November 2004</p> <p>d) NHT funding submission sent by May 2002</p> <p>e) Areas of dense / extensive / inaccessible infestations identified and policy developed by July 2002</p>	<p>Affected LCAs</p> <p>(ST&SCNPC Paul Brown)</p> <p>Affected LCAs</p> <p>(ST&SCNPC Paul Brown)</p>	2

ACTION	Performance Indicator	Who is to be responsible (add others involved)	Objective number
<ul style="list-style-type: none"> c) Develop specific best practice management practices for core areas (e.g. CNG as a pasture plant and / or strategies to give desirable species a competitive advantage). Use a facilitator to help develop strategies for this and other similar issues (e.g. determine areas where species is a weed and where it is a pasture plant). d) Seek funding from NHT for work or adapt information from that which is produced under the National Strategy (Strategy 2.1.4) e) Identify areas where dense / extensive / inaccessible infestations occur and LCAs develop policy to assist landholders in meeting legal obligations in these areas 			
Prevention, regulation and rehabilitation			
5*	<ul style="list-style-type: none"> a) Weed declared as noxious in existing and potentially affected LCA areas (see Section 4.2 above) 	<ul style="list-style-type: none"> a1) Declaration and control issues discussed during July 2002 ST&SCNPC meeting a2) Submission requesting declaration in relevant LCAs (see section 4.2 above) sent by December 2002 a3) Declarations completed by July 2003 	<p>Relevant LCAs (DoA, ST&SCNPC)</p> <p style="text-align: right;">5</p>
6	<ul style="list-style-type: none"> a) Develop regional quarantine methods, including a code of practice and hygiene protocols. b) Ensure development approvals and ACT Land Management Agreements (LMAs) contain relevant weed prevention and management clauses. Develop a weed control protocol for incorporating into development approvals. c) Seek funding from NHT for work or adapt information from that which is produced under the National Strategy (Strategy 2.1.4.) d) Develop code of practice for road-side maintenance and protocols 	<ul style="list-style-type: none"> a) Code of practice etc adopted by ST&SCNPC by July 2003 b) All development approvals and LMAs in affected areas include Chilean needle grass control by July 2004. Protocol developed by July 2003 c) NHT funding submission sent by May 2003 if necessary. d) Roadside maintenance codes of practice and protocols developed 	<p>ST&SCNPC, DoA</p> <p style="text-align: right;">1</p>

ACTION		Performance Indicator	Who is to be responsible (add others involved)	Objective number
7	<p>a) Liaise with Landcare groups to promote rehabilitation of native ecosystems following CNG control works. Identify priority for rare and isolated populations and other sites of significance (also see Action 2).</p> <p>b) NPWS identify strategies for protection of threatened grasslands</p>	<p>a) Letter sent to Landcare groups in CNG affected areas by July 2002. Majority of Landcare groups in affected areas involved in rehabilitation works by March 2004</p> <p>b) NPWS has addressed a ST&SCNPC meeting by July 2003</p>	ST&SCNPC and NPWS (Landcare, Bushcare)	6
Training, Education and Extension				
8*	<p>a) Training for Weeds Officers, Catchment, Landcare Coordinators and agronomists and selected field staff in land management authorities in species identification</p>	<p>a) 80% of targeted people can distinguish Chilean needle grass prior to January 2003 (<i>i.e.</i> when the species is flowering: November - February) and 100% by January 2004</p>	DoA Regional Coordinator	3
9	<p>a) CSIRO Entomology requested to establish a second CNG trial site in the Region (<i>e.g.</i> at ACT, Yarralumla or Captains Flat) for education and monitoring of control programs</p> <p>b) If CSIRO can not establish a second trial, then assist Environment ACT establish a trial site at Gungahlin Grassland Reserve, linking in with national trials</p>	<p>a) Submission sent by 30th April 2002.</p> <p>b) Agreement reached to assist by June 2002.</p> <p>Two trial sites established in the region</p>	ST&SCNPC Environment ACT	4
10	<p>a) Update best practice management, including treatment details as relevant to the region on completion of trials</p> <p>b) Adapt brochure and media campaign produced under national strategy 2.1.1, or seek NHT funding to develop these within the Region.</p> <p>c) In affected and potentially affected LCAs, information on identification, impacts and control of CNG to be disseminated in one or more of the following:</p> <ul style="list-style-type: none"> - Rates notices - Council pamphlets - Field day material <p>Absentee and small acreage landholders to be specifically targeted</p>	<p>a) Updates provided as information increases, with initial update prior to July 2004</p> <p>b) National Strategy brochure obtained by January 2003 or NHT funding submission sent by May 2002</p> <p>c) CNG brochures and/or discussion included in all field days in ACT and surrounding Tableland Councils over next 5 years.</p>	ST&SCNPC LCAs, DoA	4

ACTION		Performance Indicator	Who is to be responsible (add others involved)	Objective number
11	<ul style="list-style-type: none"> a) Promote methods of reducing off-target mortality at field days and in information brochures b) Ensure spray contractors and landholders undertaking chemical control are trained in the identification of CNG, in the calibration of equipment and the interpretation of chemical labels 	<ul style="list-style-type: none"> a) Methods of reducing off-target mortality during weed control are specifically addressed at all field days during 2002-2007. CNG brochures include methods of reducing off-target mortality b) By 2003 all spray contractors are to be trained in CNG identification: Chemcert, SMARTtrain or equivalent 	LCAs, DoA	4
Other actions				
12	<ul style="list-style-type: none"> a) Develop and implement incentive scheme options (e.g. monetary, equipment hire) b) Work with those involved in implementation of national strategy 2.4.1 regarding incentive schemes. c) Contact appropriate government and industry bodies for support. 	<ul style="list-style-type: none"> a) Discussed at ST&SCNPC meeting of March 2005. Stakeholders other than Local Councils involved in meeting discussion. b) WONS representative address March 2005 meeting on incentive scheme progress c) (If appropriate) Government and Industry support canvassed in letter or by a committee delegation prior to March 2003 	ST&SCNPC	7
13	<ul style="list-style-type: none"> a) Develop and implement an appropriate audit system, such as spot checks and surveys by independents. 	<ul style="list-style-type: none"> a) Discussed at ST&SCNPC meeting of March 2004. Audits underway by July 2004 	ST&SCNPC	4

*¹ refer to Appendix 1 for definition of "eradicate"

*² reduced to an 'appropriate level' means the population can be "maintained at a level where it has insignificant environmental and economic effect, with a minimum and preferably decreasing expenditure/effort". Insignificant environmental and economic effect means that the level of expenditure and effort required to keep the species at a 'rare level' is insignificant, and the population does not adversely and 'significantly' affect natural (including biodiversity), cultural and social values (Appendix 2)

It is anticipated that at a regional scale the application of the above actions should restrict the spread and reduce abundance of existing Chilean needle grass infestations. Development of identification skills, provision of education / extension programmes and promotion of adequate hygiene techniques are essential if the Plan is to succeed. It is anticipated that by following this Plan, the range and potential impacts of Chilean needle grass will be controlled. Appendix 3 provides a checklist to improve accountability and ensure the actions and performance indicators in Section 6 are met.

7.0 MONITOR AND REVIEW PROCESS

Stakeholders will provide an annual progress report which details their success in meeting the performance indicators within the Plan. This includes an updated distribution map required at least every second year. A brief regional report will be submitted to NWAC each year. The regional report will address any modifications to actions and performance indicators which may improve the outcomes of the Plan.

The Plan is to be reviewed and updated after five years *i.e.* prior to July 2007.

In the event of a key stakeholder failing to meet an objective as given in the Plan, the Committee will assist the stakeholder to meet requirements: *e.g.* determine an appropriate action for the stakeholder and / or other members of the Committee. If the stakeholder is still unable to meet the objective, the Committee will review the mechanism and performance indicators related to the required action.

8.0 BENEFITS

Efforts to restrict the spread and abundance of existing Chilean needle grass infestations as outlined in this Plan will benefit industry, the environment and the community. Chilean needle grass is estimated to cost primary industry \$25/ha with productivity estimated to decrease by up to 50% in heavily infested areas (ARMCANZ & ANZECCFM 2001). Efforts to prevent establishment of infestations will therefore save industry both control and opportunity costs.

The environment will benefit through Chilean needle grass control works and extension / education initiatives with alleviation of threatening processes affecting native flora and fauna species. Native grasslands are rare and marginalised, thus control of competitive introduced species such as Chilean needle grass may assist in conserving these vegetation communities and ultimately, assist in the conservation of biodiversity.

The community will benefit through Chilean needle grass control by avoiding trickle-down economic impacts from the agricultural sector. The environmental values of native grasslands in the Region will also be enhanced through control and prevention of Chilean needle grass infestations.

9.0 RESOURCES

References

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Personal communications

Kriticos, D. CSIRO Entomology, Canberra.

Appendix 1: Current and proposed declarations for Chilean needle grass in the Region

LCA	Current declaration	Proposed declaration
ACT	D	D
Bega Valley	-	-
Bombala	-	-
Cooma-Monaro	W2	W2
Crookwell	-	-
Eurobodalla	-	W2
Goulburn	-	W3
Gunning	-	W3
IDWA	-	-
Mulwaree	-	W3
Queanbeyan	-	W2
Shoalhaven	-	-
Snowy River	W2	W2
Southern Slopes	-	W3
Tallaganda	-	W3
Wingecarribee	-	W3
Yarrowlumla	-	W3

Appendix 2: Density classes used to map Chilean needle grass

Density / distribution class	Comment
Core	<p>A 'core' area is where, using realistic resource levels and advances in technology^{*1}, it is NOT FEASIBLE in the long term^{*2} to:</p> <ul style="list-style-type: none"> - significantly reduce^{*3} the density and distribution of the species, OR - maintain the current density and distribution of the species, with a decreasing amount of expenditure/effort^{*4} <p>Note: Although core areas are ultimately likely to be lower priority areas, they will continue to require at least site specific control measures. However for the ST&SCNPC to support grant funding for these sites they will need to meet the 'core area' priority criteria in the Regional Strategy Plan.</p>
Marginal	<p>A 'marginal' area is where, using realistic resource levels and advances in technology, it IS FEASIBLE in the long term to,:</p> <ul style="list-style-type: none"> - significantly reduce^{*3} the distribution and density of the species, or - maintain the density and distribution of the species, with a decreasing amount of expenditure/effort
Rare and/or isolated	<p>A 'rare and/or' isolated area is where, using realistic resource levels and advances in technology, it IS FEASIBLE in the long term to:</p> <ul style="list-style-type: none"> - eradicate^{*5} the species where it occurs as an isolated^{*6} population - where the population is rare^{*7} to: <ul style="list-style-type: none"> - eradicate the species, OR - maintain it at a level where it has an insignificant environmental and economic effect^{*8}, with a minimum and preferably decreasing expenditure/effort
Absent	<ul style="list-style-type: none"> - requires a high level of certainty that weed is absent. Rare and/or isolated may be a better class to use if uncertain. - may represent all of the area not covered by the first 3 classes - where possible, indicate what environmental constraint or history is causing the absence

*1 'realistic resource levels and technology advances' should be based upon your experience over the last 5 years with some informed judgement on what is expected over the next five years. If in doubt assume a continuation of the same level of funding and effort. Resources include funding and labour. Technology includes new control techniques such as biological control and integrated management.

*2 'Long term' means greater than 5 years.

*3 Significantly reduce means reduce by approximately 75% from 2001 levels of distribution and abundance in 5 years

*4 'Decreasing expenditure/effort' means that the amount of funding, resources and effort (including 'non-costed' labour from private land owners/managers) to control the weed over the past five years will decrease over the next five years.

*5 'Eradicate' means: (a) remove or destroy all above ground biomass of the weed species population. This definition recognises the weed seed bank will remain viable and follow up work may be required beyond the term of this plan.
(b) remove populations of the weed from the local area to the extent that little or no follow up is required *i.e.* the weed seed bank is largely exhausted. It is recognised that this may not be achievable within the currency of the plan.

*6 'Isolated' means the population is considerably separate from other local populations (*i.e.* seed source from other local populations can not re-establish the local population) and is small enough to be eradicated. If eradicated it is assumed re-invasion is unlikely to occur.

*7 'Rare' means a species is very uncommon, but unlike isolated may be scattered over a wider area at a very low density.

*8 'Insignificant environmental and economic effect' means that the level of expenditure and effort required to keep the species at a 'rare level' is insignificant, and the population does not 'adversely and significantly' affect natural (including biodiversity), cultural and social values.

Appendix 3: Checklist for completion of control actions

Year	Action (see Sect. 6)	Action	Responsibility	Sign and date when completed
2002	2a	Seek declaration in affected LCAs	ST&SCNPC Chairperson	
	2b	Seek declaration in affected LCAs	ST&SCNPC Chairperson	
	2c, d	Inspections included in annual reports and management plans submitted	Paul Brown	
	3a2	Seek declaration in affected LCAs	ST&SCNPC Chairperson	
	4b	Actions to assist landowners with clean properties in core areas recorded in annual reports	Paul Brown	
	4d	NHT funding submission sent by May	ST&SCNPC Chairperson	
	4e	Areas of dense / extensive / inaccessible infestations identified and policy developed by July	ST&SCNPC Chairperson	
	5a1	Declaration and control issues discussed during July ST&SCNPC meeting	ST&SCNPC Chairperson	
	5a2	Submission requesting declaration in relevant LCAs sent by December 2002	ST&SCNPC Chairperson	
	7a	Letter to Landcare groups sent by July 2002	ST&SCNPC Chairperson	
	9a	Submission to CSIRO sent by 30 th April 2002	ST&SCNPC Chairperson	
	9b	Agreement to assist Environment ACT by June 2002	ST&SCNPC Chairperson	
	10b	NHT funding submission sent by May	ST&SCNPC Chairperson	
	10c & 11b	CNG discussion and methods of reducing off-target mortality during weed control included in ACT and surrounding tablelands field days	Paul Brown	
2003	1a	More accurate mapping completed throughout Region by July 2003	ST&SCNPC Chairperson	
	1c	NHT application submitted by May	ST&SCNPC Chairperson	
	2a	25% of isolated infestations in the Region eradicated	Paul Brown	
	2b	25% of rare infestations in the Region eradicated or at appropriate level	Paul Brown	

Year	Action (see Sect. 6)	Action	Responsibility	Sign and date when completed
	2c, d	Inspections included in annual reports and management plans submitted	Paul Brown	
	3a2	25% of control work completed for currently known marginal infestations	Paul Brown	
	4b	Actions to assist landowners with clean properties in core areas recorded in annual reports	ST&SCNPC Chairperson	
	6a	Code of practice <i>etc.</i> adopted by July 2003	ST&SCNPC Chairperson	
	6b	Weed control protocol prepared for inclusion in development approvals by July 2003	ST&SCNPC Chairperson	
	6c	NHT funding submission sent by May (if necessary)	ST&SCNPC Chairperson	
	7b	NPWS addressed a ST&SCNPC meeting by July 2003	ST&SCNPC Chairperson	
	8a	100% of Weeds Officers and DoA Agronomists attend training session prior to March 2003	Mich Michelmore	
	10b	National Strategy brochure obtained (if possible)	ST&SCNPC Chairperson	
	10c & 11a	CNG discussion and methods of reducing off-target mortality during weed control included in ACT and surrounding tablelands field days	Paul Brown	
	12c	Government and Industry support canvassed in letter or by a committee delegation	ST&SCNPC Chairperson	
2004	2a	50% of isolated infestations in the Region eradicated	Paul Brown	
	2b	50% of rare infestations in the Region eradicated or at appropriate level	Paul Brown	
	2c, d	Inspections included in annual reports and management plans submitted	Paul Brown	
	3a2	50% of control work completed for currently known marginal infestations	Paul Brown	
	4a	Core area mapping completed by July 2004	Paul Brown	
	4b	Actions to assist landowners with clean properties in core areas recorded in annual reports	Paul Brown	
	4c	Best practice management practices developed at ST&SCNPC meeting November 2004	ST&SCNPC Chairperson	
	6b	All development approvals in affected areas include Chilean needle grass control by July 2004.	ST&SCNPC Chairperson	

Year	Action (see Sect. 6)	Action	Responsibility	Sign and date when completed
	7a	Majority of Landcare groups in affected areas involved in rehabilitation works by March 2004	ST&SCNPC Chairperson	
	10a	Updates on best practice provided prior to July 2004		
	10c & 11a	CNG discussion and methods of reducing off-target mortality during weed control included in ACT and surrounding tablelands field days	Paul Brown	
	13a	Audit system discussed at March 2004 ST&SCNPC meeting. Audits underway by July 2004	ST&SCNPC Chairperson	
2005	1b	Maps updated at least every second year	ST&SCNPC Chairperson	
	2a	75% of isolated infestations in the Region eradicated	Paul Brown	
	2b	75% of rare infestations in the Region eradicated or at appropriate level	Paul Brown	
	2c, d	Inspections included in annual reports and management plans submitted	Paul Brown	
	3a2	75% of control work completed for currently known marginal infestations	Paul Brown	
	4b	Actions to assist landowners with clean properties in core areas recorded in annual reports	Paul Brown	
	12a & b	Incentive scheme options discussed and WONS representative address meeting at March 2005 ST&SCNPC meeting	ST&SCNPC Chairperson	
2006	2a	100% of isolated infestations in the Region eradicated by July 2006	Paul Brown	
	2b	100% of rare infestations in the Region eradicated or at appropriate level by July 2006	Paul Brown	
	2c, d	Inspections included in annual reports and management plans submitted	Paul Brown	
	3a2	100% of control work completed for currently known marginal infestations by July	Paul Brown	
	4b	Actions to assist landowners with clean properties in core areas recorded in annual reports	Paul Brown	
	10c & 11a	CNG discussion and methods of reducing off-target mortality during weed control included in ACT and surrounding tablelands field days	Paul Brown	
		5 year review of Plan completed	ST&SCNPC Chairperson	
As required	2e	Eradicated rare and isolated infestation sites are rehabilitated within 1 year	Paul Brown	

Year	Action (see Sect. 6)	Action	Responsibility	Sign and date when completed
	3a1	Properties inspected and action taken within 1 year of inspection	Paul Brown	
	3a3	Majority of sites where marginal infestations have been controlled are rehabilitated within 1 year	Paul Brown	
	10c	Brochures distributed and/or discussion included in all field days in ACT and surrounding Tableland Councils over next 5 years	Paul Brown	
	11a	Methods of reducing off-target mortality during weed control are specifically addressed at all field days during 2002-2007. CNG brochures include methods of reducing off-target mortality	Paul Brown	

Appendix 4: Bombala Shire Council application for declaration amendment for Chilean needle grass

Application For

Weed Control Plan and Declaration Amendment

To Assist Local Control Authorities to implement local weed control plans

Name Of Local Control Authority	Bombala Council
Address	PO Box 105 BOMBALA NSW 2632
Administrative contact (name, position, fax, phone, email)	Jill Hampshire – Finance Manager. Phone: (02) 6458 3555 Fax: (02) 6458 3777 Email: bombala@acr.net.au
Technical contact (name, position, fax, phone)	Ken Roberts – Chief Weeds Officer Phone: (02) 6458 3555 Fax: (02) 6458 3777 Email: bombala@acr.net.au

Name of Local Control Plan	Stop! Chilean needle grass!
Botanical name	<i>Nassella neesiana</i>
Common name	Chilean needle grass
Identification confirmed by RBG	Yes
Start date of plan	01 January 2002
Completion date (not to exceed five years)	31 December 2006
Current declaration	<i>Not declared</i>
Proposed declaration	W4E
Aims:	Chilean needle grass is destroyed in our Council
Objectives:	<ul style="list-style-type: none"> • To provide an ongoing awareness and education program so that landowners, land managers and Noxious Weeds staff can identify and control Chilean Needle Grass. • Facilitate control programs by community groups and adjoining landowners. • Where necessary, vigorously use the Noxious Weeds Act to support those who have an effective control program or are free of Chilean Needle Grass.

Commitment: We have committed funding for achieving objectives, performance indicators, and reporting requirements as listed in the plan. Where necessary, we are prepared to use enforcement measures required by the proposed declaration.

*Signature:

Date:

* General Manager or authorised person

[Plan then follows]

