WEEDS OF NATIONAL SIGNIFICANCE

SERRATED TUSSOCK

(Nassella trichotoma)

Strategic Plan

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Supporting information about the National Weeds Strategy, Weeds of National Significance and progress to date may be found at www.weeds.org.au where links and downloads provide contact details for all species, their management committees and copies of the strategy.

This strategy was developed under the leadership of NSW Agriculture with full cooperation of all the States, Territories and Commonwealth of Australia.

Comments and constructive criticism are welcomed as an aid to improving the process and future revisions of this strategy.

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The National Strategy for Serrated Tussock is a National initiative by the Commonwealth, State and Territory Governments of Australia, in partnership with Australia's rural communities.

EXECUTIVE SUMMARY

Serrated tussock, *Nassella trichotoma*, has infested more than 1.1 million Ha of temperate Australia. More than 30 million Ha are threatened. This very invasive wind dispersed weed competes with desirable species and is not eaten by grazing animals.

The major challenges with serrated tussock are halting its spread, and the establishment of land management systems that reduce the impact and reduce the spread from densely infested areas that have naturally low productivity.

As a Weed of National Significance to Australia, this strategy provides a framework that sets direction and establishes a coordination process for the management of serrated tussock in Australia. The strategy ensures that governments commit considerable resources to help implement actions.

The vision of the strategy is that:

The impact of serrated tussock is reduced and its spread and establishment across Australia is prevented.

The strategy aims to deliver three desired outcomes.

1 Best management practices to reduce serrated tussock are available and adopted.

- Determine best serrated tussock management practices.
- Improve control techniques.
- Ensure best management practices are applied in the field.

2 The impact of serrated tussock is minimised.

- Promote best land management practices.
- Promote the best landuse.
- Identify the scale of the problem.

3 Communities will embrace their own serrated tussock management plans.

- Stakeholders develop plans.
- Plans are implemented cooperatively.
- Maximise community concern and support.
- Dedicated serrated tussock groups provide a focus.

This is a strategy for 2000 – 2004, but will have major implications for at least 20 years. A steering committee is proposed to manage the implementation of the strategy, annually publish a progress report, maintain an action plan, and ensure that the strategy is reviewed.

THE CHALLENGE

For serrated tussock, the challenge is:

The weed is very invasive.

Serrated tussock, *Nassella trichotoma*, is a very hardy wind dispersed weed. It continues to invade pastures and conservation areas across south-eastern Australia.

The impact is very high.

The impact of serrated tussock covers several issues, including agriculture, environment, and society. Once dense, pastures are useless for grazing. In conservation areas, serrated tussock greatly decreases biodiversity. The impact of serrated tussock greatly increases the cost of inputs and decreases returns.

Options for management are relatively limited.

Management techniques are not always effective or seriously impact on desirable vegetation. Methods to achieve management of serrated tussock need considerable development and extension. Opportunities exist in several areas including biological control, herbicide technologies, pasture management, and revegetation. We must identify and plan for threats that challenge existing tools.

Industry involvement.

Wool and Meat industries are clearly amongst the major beneficiaries of reducing the impact of serrated tussock. The challenge is to find ways to ensure these industries continue to take a leading role in serrated tussock management.

Issues are very broad.

The impacts of serrated tussock differ according to the situation, such as landscape, stage of invasion, social values, and landuse.

Land restoration is very difficult.

Some areas have naturally low productivity or present a significant challenge to land managers that want to remove serrated tussock. Opportunities to return social, agricultural or environmental values seem out of reach.

Communities need protection.

The threat of intractable serrated tussock to people down wind must be addressed. To address the spread, we must broaden our approach and include more techniques apart from enforced control. Opportunities exist for both the polluter and the people receiving the seeds. Some land managers are not concerned about serrated tussock, but communities expect that all land managers will control it.

Some landscapes are difficult to manage.

Best practice management to minimise establishment of serrated tussock may not be readily incorporated into some social, agricultural and environmental systems. We must find ways to get adoption of landscape best practices.

1 BACKGROUND

The National Strategy for Serrated Tussock is a National initiative by the Commonwealth, State and Territory Governments of Australia, in partnership with Australia's rural communities.

Considerable information on serrated tussock is available. The key aspects on serrated tussock that will affect the implementation of this strategy are presented here.

Several exotic stipoid grasses threaten Australian landscapes. Two members of this group, serrated tussock and Chilean needle grass, are Weeds of National Significance. The National Strategies for these two weeds do not exclude opportunities to help prevent the introduction, and promote better management of other similar significant stipoid grasses, such as:

Achnatherum brachychaetum
Achnatherum caudatum
Jarava plumosa
Nassella charruana
Nassella hyalina
Nassella leucotricha
Nassella megapotamia
Nasella neesiana
Nassella trichotoma
Nassella tenuissima
Piptochaetium montevidense

1.1 Biology of serrated tussock

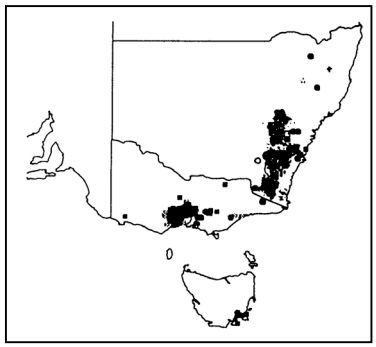
Serrated tussock, *Nassella trichotoma* Syn *Stipa trichotoma*, is a perennial grass, living to perhaps more than 20 years (figure 1).

Soil seed banks in Australia are typically large. Although vast majority of the seed has germinated, been eaten by ants, or otherwise lost within three years, some seed may be still viable after several decades. Seedlings are slow growing and weak. Serrated tussock plants older than two years may set seed. Seeds are adapted for wind dispersal. Seed that passes through stock may be viable.

This weed is highly invasive, most grasslands will be vulnerable. The sparser the pasture or scrub, the more successful is serrated tussock invasion. Serrated tussock has a wide climate adaptability. All soil types are vulnerable. Hot summer temperatures limit the distribution of serrated tussock, as does salinity. Serrated tussock is tolerant to drought, fire and grazing, and has few natural enemies in Australia.

1.2 Summary of Impacts

The weed has spread extensively. The estimated area covered by serrated tussock in Australia in 1999 was 1,000,000 Ha (figure 2). The species is not recorded in WA.



Potential distribution will concentrate on the temperate areas and includes all roadsides, pastures, and scrub.

Figure 2. *Estimated distribution of serrated tussock, 1999.*

The potential distribution of the weed has been predicted, using climate modeling and figure 3 shows where the weed could be a serious problem in Australia. However it could grow outside these areas in microclimates favoring its growth. This analysis does relies on climate data only and therefore does not make allowance for soil type, vegetation cover and other factors that affect its distribution. However it is clear that the species has not naturalised the full extent of its potential range and that prevention of spread is a worthwhile way to contain the impacts.

Infested areas need regenerating frequently, or needing to have a continuous serrated tussock management strategy. Serrated tussock is unpalatable and has very low digestibility. Grazing industries are affected by reduced production, and conservation is affected by reduced biodiversity. The processes of prevention of spread, controlling plants, and the impact of the

weed, has put incredible strain on families and community relationships.

1.3 History of management and spread

Serrated tussock is native to South America. It is uncertain how the weed was introduced into Australia. Serrated tussock was recognised as a difficult problem in numerous areas before World War II. Warnings have not been fully heeded by all land managers and weed authorities. Delays to commence programs, insufficient resources, poor land management practices, or not taking the weed seriously have all been contributing factors to its spread.

Management of a perennial grass weed in a perennial grass ecosystem is not easy. There have been problems distinguishing the plant, and options for control may be limited. Herbicides that provide some selective control make pasture improvement easier. Despite efforts from land managers and control authorities, the weed has continued to spread.

Where possible, land managers prevent introduction and prevent establishment of seedlings by ensuring pastures are competitive and shading. Seed set is prevented by destroying plants or topping, using a hoe or herbicides. Land managers have been able to control light and scattered infestations by spot and broadacre treatments and, where necessary, re-establish pastures. When serrated tussock is established as dense extensive infestations on non-arable land there are limited options. Successful programs have progressively destroyed the weed in manageable blocks and replaced it with dense pastures, scrub, or plantations.

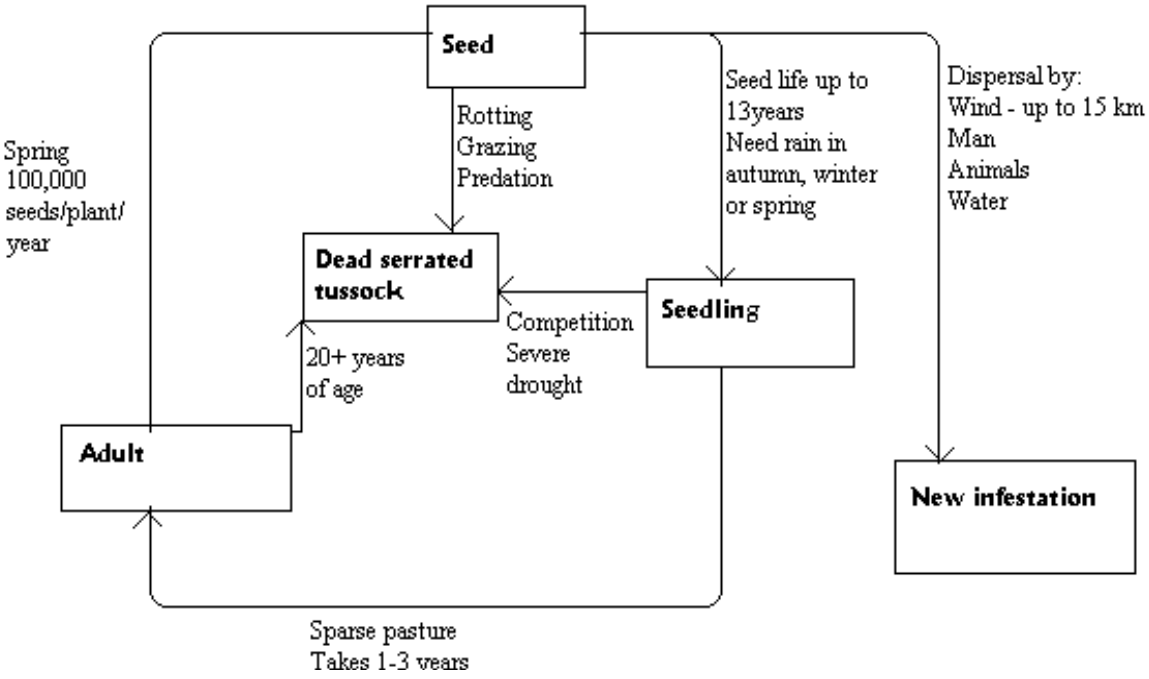


Figure 1. *Life-cycle of serrated tussock*

1.4 Socio-economic factors affecting management decisions

As serrated tussock is such a mobile weed, controlling it provides benefits to land managers and the community.
Some land managers do not have the skills, motivation, money, or infrastructure to adopt best grazing strategies. Because of their landscape, some land managers may have reduced options for control. And the current broadacre treatments severely damages vegetation and may be confrontational to meeting conservation goals.

The discontinuous availability of selective herbicides has placed many existing control programs in a flux. There is poor direction of control programs in some districts, and some partners and stakeholders are disillusioned. Planning and the demonstration of new efficient and effective local level management systems need to be key aspects of the whole program.

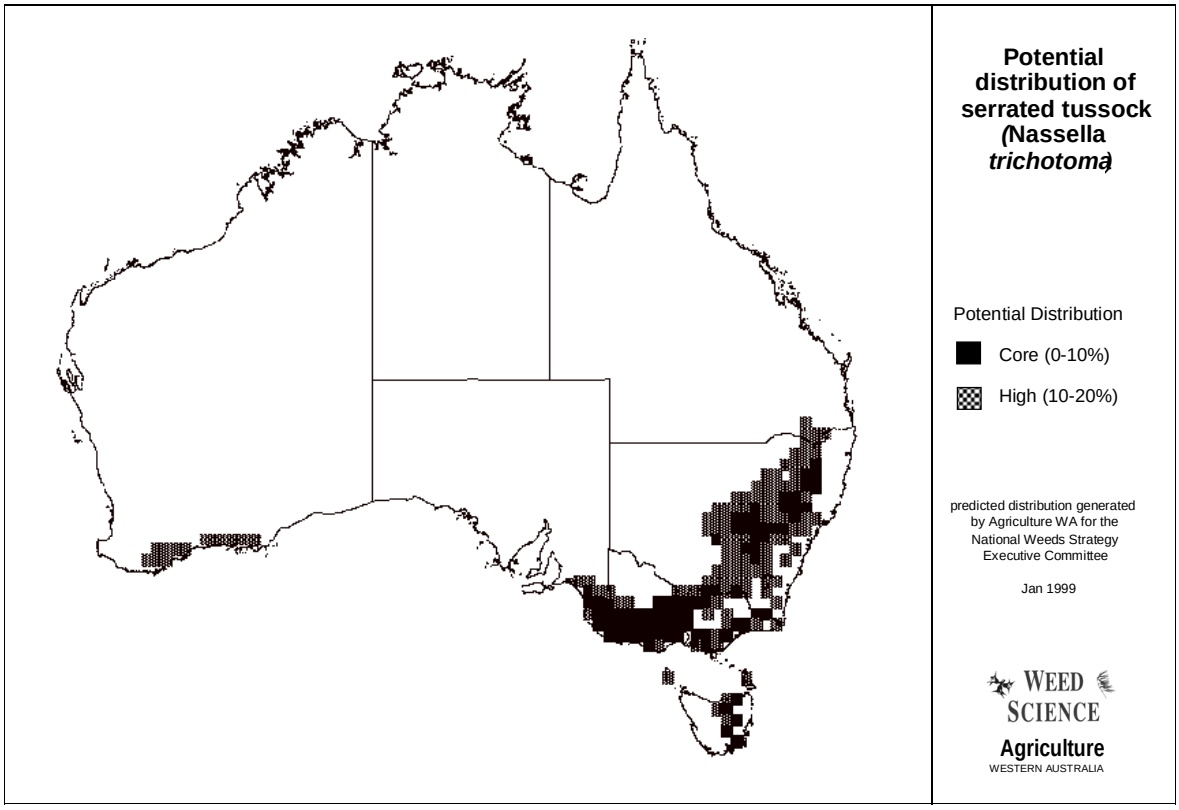


Figure 3. *Potential distribution of serrated tussock, based on climate analysis only.*

Noxious weeds programs have not always been successful for the control of serrated tussock. This may be because all control authorities do not have enough resources to follow up every land manager to ensure minimum required weed management responsibilities are met.

1.5 Development of this strategy

Stages in the development of the National Strategy for Serrated Tussock are shown in the figure.

During the community consultation phase, nearly 600 copies of the draft strategy were circulated to 80 organisations. Responses were received from 32 organisations and individuals. These responses included helpful additions; comments on unclear text, context, and grammar; and technical aspects. Where possible, responses to the draft have been included.

There were 12 responses that directly challenged governments to increase resources spent on serrated tussock control. Many of the responses noted that some of the actions are already in place or proposed. Many of the responses recognised how current or proposed actions could be implemented differently in their districts – where reasonable flexibility has been provided in the actions to allow varying methods to reach the same goal.

Key organisations supported the revised strategy.

1.6 Relevance to other strategies

The National Serrated Tussock Weed Management Strategy has been established to provide a framework for coordinated management of these plants across the country. To date most infestations of these plants are limited to scattered areas of Tasmania with widespread infestations in New South Wales, Victoria and ACT, but serrated tussock has the potential to increase in both density and distribution throughout these jurisdictions and into South Australia and Western Australia. The strategy is linked to other national and state resource plans and groups already involved in serrated tussock management at the regional and local level.

1.7 Process followed in developing of this strategy

Stages in the development of the National Strategy for Serrated Tussock are shown in the figure 4.

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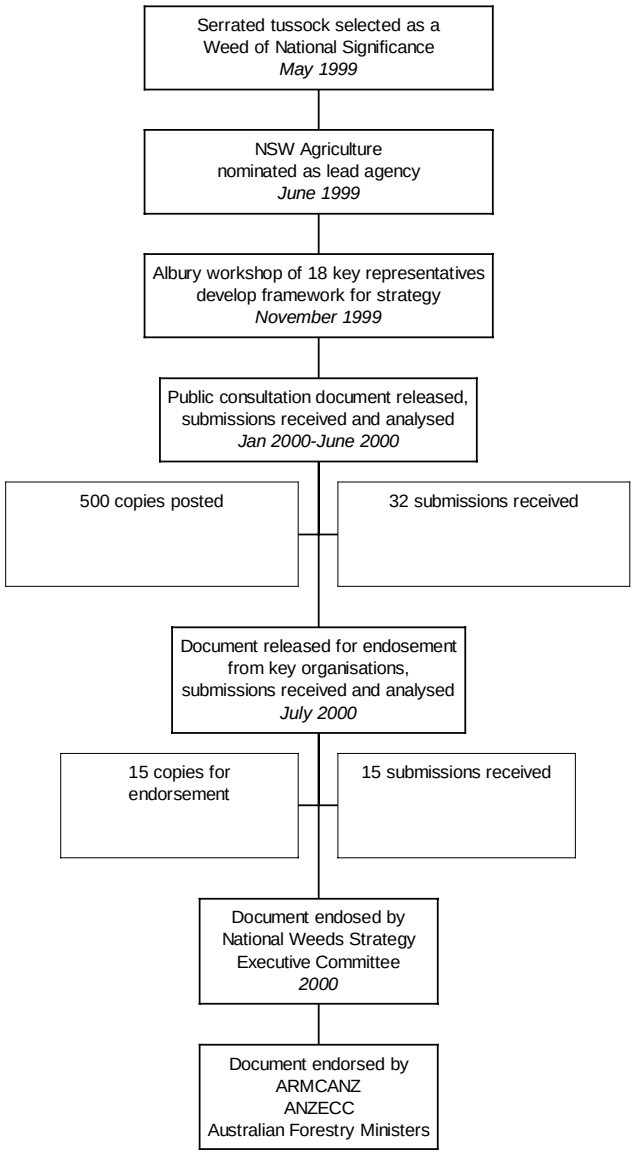
Figure 4 Process followed in developing the strategy



1.8 Policy and strategy linkages

Table. Other key programs and strategies that should be considered when implementing the National Strategy for Serrated Tussock.

Scope Scale	Pest Management	Natural Resource Management
Land/Property	Landholder Management Plans. Control schedules	Property Management Planning.
Utilities	Rail, road and utility corridor management plans.	Environmental Impact Assessments.
Neighbourhood	Community action strategies	Landcare groups and plans, roadside conservation and other greening projects.
Local Government	Local Government Pest Management Plans	Local conservation strategies, local Agenda 21 programs, Integrated Local Area Planning, local environment plans.
Within State regions	Regional and/or local weed plans and species strategies.	Management plans, Total Catchment Management Committees, Soil Conservation District Boards, regional environmental plans and other regional initiatives, Mulga Lands Strategy, State of the Environment Reports, development control plans. Landcare groups and plans.
State/Territory	State weed plans and species strategies. Specific cases, eg Military (NT)	Conservation Strategies, State components of Decade of Landcare Plans, Sustainable Development, Catchment/ vegetation management plans, State biodiversity strategies, Forest policy, forest practices agreements, river, estuary and wetland policies.
Multi-State regions		Strategies under Murray-Darling Basin Initiative, including natural Resources Management, Algal Management.
Commonwealth	Policies, strategies, plans and controls applied to own land (Conservation and Military)	Decade of Landcare, Natural Heritage Trust, forest practices agreements, World heritage areas, Ramsa sites.
National	National Weeds Strategy Weeds of National Significance Species Strategies	National Strategy for Ecologically Sustainable Development. National Strategy for the Conservation of Australia's Biological Diversity, National Water Quality Management Strategy, National Strategy for Resource Management.
Multi-national		Binding and non binding agreements or conventions negotiated in United Nations or OECD forums dealing with varying topics including biodiversity, marine resources, environmental reporting, ozone depletion and desertification. World Conservation Union.

2 STRATEGIC PLAN

VISION

Consultation, outlined in the appendices, indicates that Australians share the following vision:

The impact of serrated tussock is reduced and its spread and establishment across Australia is prevented.

The longer term vision for serrated tussock will be met by implementing actions progressively. This section outlines strategies that will be developed and implemented in order to meet this long term vision. The context of these strategies is established by examination of weed management principles, other strategies, and legislation. Three goals are established, and actions are outlined. Annually a prospectus of proposed activities will be prepared. This strategy relies upon adequate resources being provided by governments and other stakeholders.

Principles underpinning the plan

The National Weeds Strategy promotes four principles for the management of Weeds of National Significance. The relevance of these principles for serrated tussock is outlined in Table 1.

Relevance to other strategies

Good management of serrated tussock will not occur in isolation. There are other programs that are complimentary to this strategy, or must be considered by the people who are implementing this strategy. These are outlined in the appendices. There are existing and developing strategies in weed, vegetation, conservation, agriculture, and natural resource management. These strategies exist at the national, state, regional, and local level. These strategies must be integrated with the implementation of the National Strategy for Serrated Tussock.

Quarantine and legislative controls

The Commonwealth prevents introduction of all *Nassella* species into Australia through quarantine legislation managed by AQIS. Western Australia and Tasmania have programs to prevent introduction of serrated tussock. All states and territories should consider restricting the deliberate trade of serrated tussock propagating material and similar invasive exotic stipoid grasses.
Serrated tussock is a truly noxious weed. Legislation has an important role. As situations vary across Australia, the regions or states should determine regulatory programs. When reviewing programs, legislators should ensure that they complement the goals of this strategy.

The invasion of serrated tussock may be considered to be a threatening process to the conservation of biodiversity. Federal or state control may be used in the future to manage this.

States use legislation to ensure that land managers meet benchmark levels of control. Serrated tussock has legislative controls in states where it could establish, as shown in Table 2.

Table 1. The relevance of weed management principles for serrated tussock.

Principle of weed management	Relevance for serrated tussock
1. Weed management is an essential and integral part of the sustainable management of natural resources and the environment, and requires an integrated multi-disciplinary approach.	Successful serrated tussock managers maintain dense pastures or minimise disturbance, and use integrated treatments that cause the smallest off-target damage.
2. Prevention and early intervention are the most cost effective techniques that can be deployed against weeds.	Early vigorous campaigns prove the most effective against serrated tussock.
3. Successful weed management requires a coordinated national approach that involves all levels of government in establishing appropriate educational, coordination, research and legislative frameworks in partnership with industry, land managers and community.	Serrated tussock is a difficult weed. Communities that work together to address their problems are the most successful. Where communities are supported by regional, state and national programs, their fight against serrated tussock has been most successful.
4. The primary responsibility for weed management rests with land managers/land managers but collective action is necessary where the problem transcends the capacity of the individual land manager to address it adequately.	Land managers need considerable support to fully understand the management of this most difficult weed. Support is needed for the numerous areas where serrated tussock treatments are cost prohibitive for individuals, but cost effective for communities and regions.

Table 2. Legislative control of serrated tussock in Australia.

Jurisdiction	Declaration
Federal	All *Nassella* species are prohibited from entry.
Australian Capital Territory	Declared plant for destruction or reduction in the whole territory.
New South Wales	Declared as a noxious weed in 47 local control authority areas.
South Australia	A notifiable plant that must be destroyed throughout the state.
Tasmania	A declared weed that must be eradicated and not be brought into the state.
Victoria	Regionally prohibited in 6 regions, and regionally controlled in 4 regions.
Western Australia	A prohibited plant that must not be brought into the state.

2.1 Best management practices

Desired Outcome

Best management practices to reduce serrated tussock are available and adopted.

Objectives

By the end of 2005:

- Land managers in areas where serrated tussock is threatening or sparse will recognise the weed and will prevent it from establishing.
- Land managers will ensure that infestations on arable areas are suppressed using best management practices.
- Land managers will ensure that infestations on non-arable areas are contained using best management practices.

Background to the goal

Programs to manage the weed will be different between the two extremes, from where serrated tussock is early in the invasion process, to where it is extensively established over landscapes. Land managers must be proactive to prevent introduction and establishment. Clean areas must be kept clean. Wherever possible, serrated tussock should be controlled. Land managers with larger areas of serrated tussock need to implement programs to progressively reduce the weed. This may mean that new land management systems, or land uses, such as revegetation, need to be implemented – communities need support to achieve this.

"Best practice" refers to the most effective practices that land managers are implementing. Best practices may vary with land management systems, land use, and stage of invasion of serrated tussock. As new techniques are developed, best practices change. The on-going philosophy of serrated tussock management has been the maintenance of dense perennial vegetation and continuous vigorous control. Best management practice treatments embrace this philosophy.

Serrated tussock is not controlled and is spreading. Communities must use all possible tools and instrumental mechanisms to bring about change to serrated tussock management.

Relatively few management options are currently available for serrated tussock control. Resources need to be applied to develop and implement integrated management techniques to target weaknesses in the life cycle and habitats of serrated tussock.

Performance indicators

Land managers recognise serrated tussock.
Small infestations and those on arable areas are controlled early.
Minimum accepted management practices are implemented.

Outcomes

- Halting the spread of serrated tussock.
- Reduction in the area of serrated tussock.

Strategy	Actions	Responsibility[#]	Priority
2.1.1 Determine best serrated tussock management practices.	1. Survey effectiveness of current treatments used	State, regional and local weed, land management, advisory, and control organisations.	1
	2. Prepare recommendations on best management practices and range of minimum accepted practices.	Regional and local weed, land management, and control organisations.	2
2.1.2 Improve control techniques.	3. Annually identify research needs, develop projects and priorities.	Research funding organisations. Research organisations. State agencies. Community organisations.	1
	4. Develop, research, trial and demonstrate integrated practices.	Research organisations, as above.	2
2.1.3 Ensure best management practices are applied in the field.	5. Prepare strategies that will help land managers implement best practices.	Regional and local weed, land management, and control organisations.	1
	6. Highlight strategies that need support from external organisations.	Regional and local weed, land management, and control organisations.	1
	7. Regional and local strategies are implemented, monitored, and evaluated.	Stakeholders of regional and local plans.	1

[#] See section 4.

2.2 Managing the impact

Desired Outcome

The goal: The impact of serrated tussock is minimised.

Objectives

By the end of 2005:

- Serrated tussock management is integrated with natural resource management systems.
- Support is available to help land managers implement integrated management.
- Support is available to land managers when necessary to implement landuse changes.
- The serrated tussock problem is quantified.

Background to the goal

Good land management practices help prevent, or will reduce the impact of, many land degradation problems. For serrated tussock and agriculture, only the densest pastures seem to be resistant. In conservation areas, serrated tussock invades many areas where there is no readily observable disturbance. Land managers with good pastures or near pristine conservation land must expect some invasion of serrated tussock. However, it is very clear that sparse pasture or native vegetation that is highly disturbed is very vulnerable to serrated tussock invasion. Land managers with susceptible land should be proactive by caring for the land and minimising disturbances.

This Goal considers the direct environmental, agricultural, and social impact of serrated tussock. It considers the proactive and reactive natural resource management that land managers must apply. Integration with natural resource strategies is critical.

Performance indicators

Integrated land management systems are applied to reduce the impact of serrated tussock.

Landuse is cognisant of community serrated tussock programs.

The rate of spread of serrated tussock.
The impact of serrated tussock is quantified.

Outcomes

- Natural resource organisations integrate serrated tussock management into their guides on best landscape management practices.
- Land managers apply land management practices and landuses that do not promote serrated tussock.

Strategy	Actions	Responsibility[#]	Priority
2.2.1 Promote best land management practices.	1. Develop long-term, whole of landscape, conservation and vegetation plans and guides that promote practices to reduce serrated tussock invasion and impact.	Land management organisations with cooperation from weed control organisations.	2
	2. Land managers helped to increase skills, finances, and abilities to implement best land management practices.	State and National Governments, and investors. Land management, and weed control organisations.	2
Promote the best landuse.	3. Provide support to help changes in landuse.	State and National Governments, and investors.	2
Identify the scale of the problem.	4. Quantify the impact of serrated tussock.	Government agencies.	3

[#] See section 4.

2.3 Community benefits and commitment

Desired Outcome

The goal: Communities will embrace their own integrated serrated tussock management plans.

Objectives

- Organisations prepare and implement integrated natural resource plans that focus on serrated tussock reduction.
- Support to implement serrated tussock management plans is provided from a broad range of partners.

Background to the goal

Local communities are able to resolve most problems relating to serrated tussock. Unfortunately, serrated tussock issues are complex. Communities need assistance to understand and resolve the more complex issues with this weed.

Serrated tussock affects agriculture directly. It affects people who are forced to control serrated tussock due to noxious weed legislation. It affects biodiversity. The focus must include commitment and incentives for all land managers.

We must maintain and build on existing regional and local serrated tussock plans, and ensure that they are integrated with natural resource management strategies. Options developed need to be partnership driven – the responsibility for serrated tussock does not rest with one organisation.

Strategies

- Stakeholders develop plans.
- Plans are implemented cooperatively.
- Maximise community concern and support.
- Dedicated serrated tussock groups provide a focus.

Performance indicators

Cooperative regional, local, and property plans are supported by communities.

Land managers working together through action plans towards mutually beneficial outcomes.

Dedicated serrated tussock organisations provide information, recommendations, and acknowledgment, to communities and government.

Outcomes

- Costs of serrated tussock management are shared with the community.
- Management plans for serrated tussock are prepared and implemented by communities.

Strategy	Actions	Responsibility[#]	Priority
2.3.1 Stakeholders develop plans.	1. Regional, catchment, and local consultation and planning processes ensure integrated programs are developed and resourced.	Regional and local weed, vegetation and land management organisations.	1
	2. Farm serrated tussock plans are developed.	Land managers, agribusiness, and government PMP staff.	2
2.3.2 Plans are implemented cooperatively.	3. Coordination and liaison occurs during plan implementation.	State and national governments. Regional and local weed and land management organisations.	1
	4. Progress and outcome reporting systems of plans occur. Publicity programs occur.	State and national governments. Regional and local weed and land management organisations.	1
	5. Provide support and mechanisms to implement serrated tussock management plans.	Local, state and national governments. Regional and local weed and land management organisations.	2
2.3.3 Maximise community concern and support.	6. Implement community awareness programs.	Regional and local weed and land management organisations.	3
2.3.4 Dedicated serrated tussock groups provide a focus.	7. State or regional serrated tussock working parties are supported to help meet the goals of this strategy.	State and national governments. Regional and local weed and land management organisations.	2

[#] See section 4.

3 MONITORING AND EVALUATION

Individuals and organisations may take several roles to implement this strategy, as shown in the appendix. The National Strategy for Serrated Tussock encourages communities to develop their own serrated tussock management programs. The strategy also clarifies a role for government. And the strategy acknowledges the continuing role of Serrated Tussock Working Parties.

NSW Agriculture is responsible to ensure that this strategy is effectively managed. This will be handled by use of a small steering committee, sponsored by government, with representatives from local government, a regional natural resource organisation, a conservation organisation, an agricultural industry organisation, a Serrated Tussock Working Party, and NSW Agriculture. The terms of reference of the steering committee are shown in the appendices.

Monitoring and evaluation methodology

A considerable number of local serrated tussock management programs will be implemented through the term of this strategy. During the development of these programs evaluation systems should be considered. Programs that seek support from this National Strategy for Serrated Tussock must have an agreed monitoring, evaluation and reporting system. This may require the preparation of interim and final reports.

The steering committee will annually publish a progress report. This will rely on community groups, local and regional organisations, industry organisations, and government agencies to provide summaries of their recent activities and proposed activities. The report will contribute to the national state of the environment reporting process. The report will be presented to the National Weeds Strategy Executive Committee. Summaries will be published to help the development of integrated programs across Australia. These summaries will include a prospectus that highlights priorities and commitment for projects for the coming years.

This National Strategy for Serrated Tussock will be reviewed once every five years. This process will require community consultation and endorsement by governments.

Performance indicators

The performance indicators listed within the strategy will be used to validate progress towards the goals and expected outcomes.

National approach

Across Australia organisations are currently committing considerable resources and coordination skill to managing serrated tussock. Resourcing and coordination is occurring at all scales, for example:

- Urged by NSW Serrated Tussock Working Party, nearly $250,000 has been raised from rural industries, state and local government, Catchment Management Committees, and Landcare to investigate prospects of biological control of serrated tussock.
- Mount Piper Landcare Group developed a weed plan, which focuses on serrated tussock, to ensure a more cooperative and efficient approach to weed management.

Current inputs to manage serrated tussock must be maintained. This National Strategy for Serrated Tussock provides a framework for national cooperation and coordination by:

- Providing a vision, direction, and realisable goals and objectives.
- Establishing a system of nationwide cooperative research and demonstration.
- Highlighting where land managers generally need help because they and their communities cannot cope. Establishing priority opportunities for National Heritage Trust, and other government and private investors.
- Integrating the National Weeds Strategy's goals, priorities and actions for a Weed of National Significance.

Investment principles

Public funding of projects under the National Strategy for Serrated Tussock will be based

upon a number of important principles, including:

- activities supported will be subject to a competitive process, rigorous assessment, and ongoing review;
- communication of knowledge and progress will be an integral component of projects;
- all projects, where feasible, will have national, land system, or regional application;
- management of serrated tussock and its impacts will not be viewed in isolation from other weed and resource management issues;
- program outputs will include options, practices, and principles that increase the confidence of resource managers to design and implement integrated treatments that manage serrated tussock and its impacts;
- research and development outputs will be interpreted and presented, as part of integrated extension programs, to meet the needs of policy makers, opinion leaders, land managers, local government, Landcare groups, and state agencies;
- publicity of achievements and recognition of the source of funds and other resources.

4 STAKEHOLDER ROLES AND RESPONSIBILITIES

Public land managers

State government departments with responsibilities for conservation, environment and resources, to ensure that the social, economic and environmental impacts of serrated tussock are kept to a minimum throughout Australia by ensuring serrated tussock control is undertaken on all state-managed lands under their jurisdiction, including:

- National Parks and Reserves (National Parks and Wildlife Service).
- State Parks.
- Other Government land.

Federal government departments and corporations

- Ensure quarantine controls on entry of serrated tussock (AQIS)
- To ensure uptake by Departmental staff to restrict movement of weeds (agencies that manage land and travel on non-government land)
- To ensure serrated tussock control is undertaken on all federally managed lands (Defence, Environment Australia and other Commonwealth departments/ corporations that manage land)
- Oversee and manage federal funds including Natural Heritage Trust and National Weed Program (Environment Australia, Agriculture, Forestry and Fisheries – Australia).

Other state government departments

To ensure serrated tussock control is undertaken on all other state-managed lands throughout Australia, including:

- State road reserves (roads department).
- Unallocated State land.

Local governments

To ensure that social, economic and environmental impacts of serrated tussock are kept to a minimum throughout their municipality.

- In each affected municipality serrated tussock control is undertaken on all lands managed by local governments.
- Assist in information exchange

Community groups

Encourage local involvement in the management of public lands.

- "Friends of" (and other) groups to actively manage weed infestations (including serrated tussock) on public lands where appropriate, under the direct supervision of public land managers.
- Landcare groups to actively manage serrated tussock infestations on public lands, with the approval and supervision of the land manager concerned.

Private land managers

To control serrated tussock on their own lands:

- Include serrated tussock management in property management plans.
- Participate in regional/catchment groups.

Community groups

Landcare groups to actively manage serrated tussock infestations on private lands, with the approval and supervision of the land manager concerned.

Industry

Industries will benefit from the actions resulting from the national *Serrated Tussock Strategic Plan*, such as those grazing sheep and cattle. Thus it is reasonable to expect their full involvement in their implementation and funding.

Roles and responsibilities

Table. General categories of partners and stakeholders for the National Strategy for Serrated Tussock.

Weed Enforcement and Management Agencies	Land managers	Groups	Support and Policy Systems	Industry
Weed control authorities: Government, councils and other authorities Supervisors Weeds officers	Rural land owners: Farmers. Urban. Local government. Stock route managers Forests. Other private land managers. Federal government lands (Defence, Environment Australia and other Commonwealth departments/corporations) State/Territory Govt Departments: Land and Water Conservation agencies. Corridor/transport managers. National Parks.	Regional weed management organisations: Serrated Tussock Working Parties. Regional Weeds Advisory Committees. Community weed management groups Farmers organisations, and NFF. Conservation Councils. Landcare..	Government agencies: Australian Quarantine and Inspection Service Natural Heritage Trust/National Weeds Program (Environment Australia and Agriculture, Forestry & Fisheries - Australia) Agriculture and natural resource departments. Environment protection authorities. National Registration Authority. Property management planning groups. Research organisations: Government research agencies Other weeds research organisations Regional land management organisations: Regional vegetation committees. Catchment management committees Neighbouring weed control authorities. Funding bodies: Rural assistance authorities. Native vegetation management fund agencies.	Research funding organisations, such as: Woolmark MLA LWRRDC RIRDC Chemical companies Retailers Contractors Forestry

(Names and precise structure will vary from state to state)

Appendix 1. Serrated Tussock Steering Committee

Terms of reference

Provide the national management framework for serrated tussock as a Weed of National Significance, and advise the National Weeds Strategy Executive Committee on progress.

Provide guidance, direction and policy advice for the implementation of the National Strategy for Serrated Tussock and action plans, and review progress.

Oversee the preparation of annual budgets, identify funding sources and make applications consistent with the needs of the strategy.

Project officers will service the steering committee. The officers will provide support, coordination, prepare reports, and act as a contact for the implementation of this strategy.

Development of action plans

A prospectus of proposed activities to meet the goals of this National Strategy for Serrated Tussock will be prepared annually. The prospectus may relate to activities or concerns for stakeholder groups:

- Property on-ground actions
- Local planning and plan implementation
- State and National support
- Research
- Project management.

Stakeholders will be invited to implement the actions in the prospectus.