

Serrated tussock

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Introduction

Serrated tussock has been declared as the worst weed for decreasing carrying capacity. In 1988, serrated tussock was estimated to cost the Australian Wool Industry approximately \$12.9 million annually. A conservative figure given for the cost of lost grazing to serrated tussock in Victoria was \$5 million per year (Nicholson *et al.*). In 1997 the estimated area of serrated tussock in Victoria was 130 000 hectares but its potential spread has been predicted to be 4.1 million hectares in Victoria based on climatic models.

Serrated tussock is one of the twenty weeds of national significance due to its highly invasive nature, its negative impacts on agricultural production and its threat to biodiversity, particularly native grasslands.

During 1993–1994, the community within the Geelong-Ballarat-Melbourne area became increasingly concerned about serrated tussock and the alarming rate at which it was spreading throughout western Victoria. A community driven public meeting was convened to address the problem; particularly the threats posed to grazing industries and native grasslands if it were allowed to spread unchecked. From this meeting the *Victorian Serrated Tussock Taskforce* was formed. NB: Later this group became The Victorian Serrated Tussock Working Party (VSTWP).

The Taskforce was a community group, with its members representing the 27 Landcare groups operating within the Melbourne-Geelong-Ballarat infestation area. With the support of the Department of Conservation and Natural Resources the Taskforce's goal was to develop a strategic plan for controlling serrated tussock in Victoria. In October 1994 the Taskforce commissioned INLAND Agriculture Pty Ltd to produce a management strategy for Serrated Tussock. The resultant document, 'A Strategy for the Management of serrated tussock in Victoria' (VSTS) was produced by INLAND Agriculture's lead consultant Ian Aberdeen, and was published in April 1995. The strategy identified key causes of uncontrolled serrated tussock infestations as being:

- Lack of awareness by landholders.
- Lack of information regarding control techniques and legal obligations.
- Lack of motivation for landholders to conduct weed control, attributed to lack of enforcement and incentives.
- Need for research, analysis and

dissemination of results.

- Lack of Co-ordination of on-ground activities of land managers, both public and private.

In response to the completed Serrated Tussock Management Strategy, the Government established a Victorian Serrated Tussock Working Party (VSTWP) to help advance the program. The group reports to the Secretary of the Department, and has the following terms of reference:

- Oversee the refinement and implementation of the Victorian Serrated Tussock Strategy.
- Advise the Secretary, NRE and Catchment Authorities on the impact and control of Serrated Tussock.
- Co-ordinate action by local Government, Landcare groups and other groups on Serrated Tussock.

The VSTWP, in partnership with NRE, recognized the need for changes in the way it deals with Serrated Tussock. It aims to increase the effectiveness of existing inputs into its management through the acceptance of currently available opportunities.

Impacts on, and control of, exotic stipoid grasses in Australia

The topic of this conference is one of much concern in Australia today and also in which I have had a great deal of interest for a number of years. For some time I felt alone. Therefore I welcome this opportunity to address this relevant and timely seminar. Looking at the list of speakers and their topics my confidence continues to grow in reducing the impact of Serrated Tussock.

A very important paradigm shift made by the Working Party was that they would never achieve their vision if the focus remained on corrective strategies only. The Working Party clearly understood that to be effective they must adopt preventative measures attacking the underlying causes of infestations and not simply treating symptoms.

To address the issues outlined in the Strategy the Working Party objectives were set out as follows.

Increasing acceptance of the wider ownership of serrated tussock problems

Initially the extension and awareness programs exhibited many faults. The aim was

to make people (land managers, Government etc.) serrated tussock conscious. The initial program was prominently negative i.e. 'Welcome to the Nightmare' and the program quickly took on a fatalistic view of land managers being overwhelmed or if not, then one was doomed to be.

To the potential funding bodies, the initial awareness program was also seen as politically 'unattractive' as we had promoted the problem as complex, costly, beyond the scope of mere mortals and the actual remedial actions outside political time frames.

The process then was to turn this negative campaign into a short term, positive, accountable program that stakeholders and land managers would not only support but also actively contribute toward.

A regional community information and education program, essential to catalyse, support and sustain the management of serrated tussock was implemented. NRE officers (specialist short term contract resource officers) provide comprehensive awareness, property inspections and an extension program aimed at encouraging landowners to take all reasonable steps to eradicate or control serrated tussock. There is a critical need to increase community understanding of the economic and environmental ramifications of serrated tussock. All property and landowner details are recorded on the NRE Integrated Pest Management System and ACCESS databases. Key land management messages must be communicated to and received by the community so that long term attitude change and control is achieved.

Increasing acceptance of the role of local government and community groups in the co-ordination of on-ground serrated tussock activities

The serrated tussock program has formed integral partnerships with many stakeholders over the last five years, with many more opportunities yet to be explored for the future. The fostering of these local partnerships has been crucial for the ultimate aim of improved land management and coordinated strategic planning throughout the entire region. In particular local government has accepted a greater role and responsibility for weed management.

Many of these partnerships involve integration of investments of time and resources from a variety of stakeholders including Landcare Groups, private industry, other NRE programs and businesses such as Rabbit Buster, Agroforestry, Nutrient Management, Flora and Fauna, Parks Victoria, the Catchment and Land Protection Board, universities, and environmental bodies. These partnerships have provided vital links to additional resources, follow up control techniques and

assistance with awareness programs incorporating land management messages.

The conditions for effective action for the control of serrated tussock are largely in place. The key stakeholders – CMA's, (CaLP Board), Governments, Landcare, and Researchers, Rural industries and communities have generally recognized their responsibilities and have been acting on them. However much more needs to be done, and urgently, by those with the ability to contribute and importantly those with the responsibility to do so.

The greater involvement of 13 local governments (Shires) in serrated tussock management is a further step forward in the fight against this weed. The fundamental need is to encourage shires to develop a planned, coordinated strategic approach with determined outcomes and defined timeframes. Initiative funding, community awareness and extension programs and potential rebate programs based on the Melton Shire model are all strategic options available to shires.

Ensuring legislation facilitates appropriate management

Enforcement of the Catchment and Land Protection Act 1994 in relation to serrated tussock is considered to have the potential to ensure the adoption or cessation of particular activities, which aid or detract from weed management. In serrated tussock areas, the Working Party and Landcare groups have observed the reversal of traditional attitudes that oppose regulation of the use of rural land. Current community attitudes indicate that landmanagers are prepared to accept a high degree of regulatory action to involve all the serrated tussock affected properties in a timely and coordinated program.

The Enforcement Program continues to be the catalyst for the advancement of the control effort. Enforcement is not a mechanism for long term behaviour change by itself. However it has been critical in promoting on-ground control work, for seeking information for land management change and for seeking alternative land use i.e.: revegetation.

A key component is for extension officers and compliance staff to work with and provide landowners the opportunity to develop an agreed plan of action on broad acre, non-arable country. The objective is to prevent seed set and reduce infestations on an incremental basis, establishing long term control of serrated tussock on their properties. Time frames are negotiated between the Catchment Management Officer and the landowner. This process allows each landowner to be treated in a fair and reasonable manner.

Establishment of effective monitoring and evaluation mechanisms for serrated tussock management

'You cannot manage what you haven't measured' became the catch cry of this program. Every conceivable way of measuring serrated tussock infestations was explored including satellites and aerial processes but it actually required people on the ground. Priority was given to ensure that serrated tussock was accurately mapped and recorded to provide an accurate information base to determine the level of distribution of serrated tussock for which to plan the program

The data being collected provides benchmarks to base a percentage reduction figure as a performance indicator and to target future control programs. The data is recorded on the NRE Integrated Pest management System (IPMS) and Access databases. Local Government and Landcare groups have also been mapping and recording in conjunction with the NRE program.

A number of techniques have been used on the program to undertake monitoring and evaluation including roadside surveys and random point assessments. The best means of determining our success will be the efficient use of GIS systems and spatial mapping of infestations.

Introduction of more appropriate incentives / assistance for land managers to comply with weed management responsibilities

The VSTWP believe there is scope for greater uses of more innovative incentives to encourage appropriate serrated tussock management. The group acknowledges that incentives are an adjunct to other strategies used to change behaviour i.e. awareness and regulation. A criterion has been developed to determine priority projects for incentive funding.

The development of local serrated tussock management strategies by Landcare groups will best determine the work agreement of on-ground actions for the Landcare areas. These plans must address the long-term management of the land resource and demonstrate the long-term landholder commitment. Incentives are directed towards priority areas or community groups who can demonstrate Co-operative simultaneous projects across adjoining lands in order to ensure long-term weed control. These projects will also produce clearly measurable outcomes.

Increase the knowledge and technologies currently available for control of serrated tussock.

Today we have seen a number of speakers highlighting the efforts toward understanding serrated tussock and will be provide the technology required assisting the overall effort.

There has been some lateral thinking to the long term control of this weed and some good examples include integrated

management involving grazing, burning, multiple row shelter belts, spray topping with low rates of glyphosate and flupropanate and catchment and farm planning. A search for pathogens with biocontrol potential is currently underway to select a short list of pathogens for more detailed study.

Farm Forestry Strategy – opportunities exist for the development of larger scale commercial tree plantations to deliver improved land management outcomes on degraded land systems and create economic and employment opportunities in the process.

The key to overcoming the serrated tussock problem lies with our ability to achieve community support in embracing new and modified land uses that can out-compete this aggressive weed. The scene is now set to implement a landmark revegetation program within the catchment to support landholders in their quest to return these largely degraded landscapes back to natural bushland and permanent tree cover.

Permanent tree cover will play a critical role in achieving long term control of this weed and support for the development of revegetation programs urgently required if we are to be successful in achieving large-scale revegetation of infested lands.

Conclusion

The program celebrates community endorsement and the Working Party along with its partners is justifiably pleased with its progress to date. The Program is now recognized as the most definitive weed model in Australia and has been commended by community, Landcare, industry and inter state agencies.

To date there has been significant reductions in seed set and the size of serrated tussock infestations in the south-west region of Victoria. However in the outer north west area of the Port Phillip region there are significant challenges, for example urban/rural interface areas and a lack of community networks due to the diverse backgrounds and interests of landholders. The Tullamarine Airport acquisition of land, 'green belt' planning restrictions, land use capabilities and a lack of land management skills all have a detrimental effect on the ability of land managers to manage serrated tussock on their land.

The past year saw a great deal of planning and effort aimed at making this serrated tussock program fulfil the Strategy's objectives. As those who have followed the progress over recent years will know, it has been our firm belief that we can stop seed set, we can significantly reduce the infestation size and we are continually seeking and implementing lateral ideas for landscape change on non-arable areas.

I believe if we can continue to support the initial commitment and enthusiasm,

which produced the Victorian Serrated Tussock Strategy and formation of the Working Party. Starting with the new year we will have a profound influence on prevailing attitudes within rural communities and will create the potential for far reaching improvements in the management of serrated tussock across Australia.

Lack of readily applicable knowledge is still a considerable constraint to serrated tussock management in this state. A natural response is to call for more expenditure on research, however, the type of research which has traditionally occurred and the relationship between research, extension and the land manager is a key to the problem.

Mr. Chirnside strongly believes there is a definitive place for 'left field' research to extend our traditional research boundaries. It is very clear that to develop more sustainable farming systems then land managers must become more involved throughout the process of generating and applying knowledge. We are seeing this involvement on the increase.

But this is not the perfect model and there are many gaps and therefore challenges ahead. There is a need to find solutions to the long-term control of tussock on non-arable marginal country; we need to maintain political support and further our involvement of local government. The legislation needs streamlining and linking information from shires, PMIS and GIS together to name a few.

Looking to the future, I remain convinced that the strategies which have been enunciated in recent times for the management of serrated tussock remain appropriate and are what the Working Party will continue to pursue.

Key messages

- This project has many positives as previously outlined such as the development of strong networks with local government.
- Support for groups in developing and implementing local strategies and property plans.
- Continuing research projects (grazing/herbicide/biocontrol).
- NHT revegetation projects (includes species/land type trials).
- Support for groups using appropriate incentives and marketing.
- Recognition as the best Weed Management Model in Australia.
- Strong partnerships with community, CMA's, local government and NSW Agriculture. Focus on long-term land management (PMP).
- Co-operative programs with other NRE-CAS businesses.
- Consistent and integrated approach to funding.
- Forums for research, legislation and industry codes of practice.

A rate rebate incentive scheme to manage exotic stipoid grasses

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Summary

A rate rebate scheme that stimulates private landholders to control noxious weeds including exotic stipoid grasses has been operating successfully in the Shire of Melton since 1994. The scheme's success is due, primarily, to the financial incentive, frequent and direct Council-landholder interaction and co-ordinated enforcement approach undertaken with Natural Resources and Environment. Melton Shire Council is committed to reducing the area of the Shire degraded by weeds and so invests \$1.2 million annually on weed management.

Introduction

In 1994 Melton Shire Council introduced what was then a radical incentive scheme to reduce the vast areas of the Shire that had become infested with noxious weeds, in particular the exotic stipoid grass serrated tussock. The scheme has continued in operation since that time and has resulted in a significant reduction in the area of degraded land within the Shire. As the scheme has evolved it has broadened its scope to address other exotic stipoid grasses such as Chilean needlegrass.

Background

The rate rebate scheme was introduced in response to community concern regarding the increase in land degradation within the Shire. Noxious weeds, pest animals and soil erosion, were identified as community priorities (Shire of Melton Local Conservation Strategy 1994). This increase in land degradation was driven by several factors including: rapid land use change; land speculation; encroaching urbanization; and an increase in absentee landowners. Exotic stipoid grass infestations are the most serious form of land degradation within the Shire.

Today, the Shire's growth rate is amongst the highest in Victoria. Broadacre farming is rapidly being replaced with more intensive agribusinesses, rural living opportunities and increasing urbanization. Unfortunately, the changes in land use have resulted in an influx of landholders with little or no previous land management experience.

Melton Shire Council has pledged to preserve the integrity of the natural environment to help ensure a high standard of living for all residents in Melton Shire (Shire of Melton Corporate Plan 2001-2004). Therefore, Council is committed to

reducing the area of the Shire affected by land degradation. However, the financial cost to Council is considerable. Council forgoes \$1.2 million annually in rates revenue to combat land degradation.

Melton Shire Council's approach to land degradation, including weed control, is multifaceted. Council is active in improving community awareness and knowledge, demonstrating best practice, providing leadership and working in partnership with all stakeholders. The cornerstone of the Shire's approach, however, is the nationally renowned and award winning Environmental Enhancement Policy that provides an incentive, in the form of a rate rebate, to undertake actions such as weed control.

Environmental Enhancement Policy

The Environmental Enhancement Policy rewards successfully implemented good land management practices on non-urban land. The aim of the Policy is to stimulate landowners to undertake specified works that will improve the environment on their properties, principally by addressing land degradation. The Policy has been designed to encourage rural landowners to engage in an on-going commitment to reducing land degradation in partnership with the Shire of Melton.

The Environmental Enhancement Policy identifies a set of actions that, if successfully undertaken by landowners, will make them eligible to retain the rebate on municipal rates made by Council. All properties greater than two hectares in the Non-Urban Zones are eligible for the rebate. The policy requires strict compliance with the terms on which the rebate was granted. Compliance involves the successful implementation of specified environmental works prior to March 31 each year.

Policy operation

Municipal rate notices are issued to landowners with the rebate having been granted, but subject to strict compliance with the terms of the Environmental Enhancement Policy. The Policy requires forms detailing proposed and completed works be submitted to Council at appropriate times of the year.

Development of proposed works

A form detailing the proposed works must be completed by the landowner and submitted to Council. The land degradation