Exotic stipoid grasses: impacts and control in Australia

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Victorian Government initiatives towards rapid response and prevention of invasive plant species

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Introduction

The Department of Natural Resources and Environment (DNRE) has recently funded two new initiatives to prevent and minimize the impacts of new invasive plant species, many of which are grasses and among them a selection of stipoid grasses. The first, the Pest Plant Distribution Prevention Strategy aims to prevent the sale, propagation, promotion or distribution by any means, of an extensive range of taxa. Plants are being assessed on their actual or potential threat to primary production, community health and the environment. Intentional distribution will be prevented by a legislative ban. Accidental spread will be covered by means of quality assurance programs such as vendor declaration systems.

The second initiative addresses the problem of new weed incursions in Victoria, with two new projects. The Weed Incursion Rapid Response project manages the issue strategically at the State level and border, whilst the Regional New and Emerging Weeds Officer will oversee responses at ground level.

Weed Incursion Rapid Response

This new Statewide project is managed by Victorian Coordinator Kate Blood, and includes creation and administration of the Victorian Weed Alert Plan, publicity and awareness, training of weed spotters and maintenance of the spotter network. The network will have a dedicated email discussion group and those persons wishing to participate are urged to contact Kate Blood at (+61) 03-5349 2833, or kate.blood @nre.vic.gov.au

The Weed Alert Plan calls for all new invasive species to be assessed for invasiveness and threats, using the Victorian Weed Risk Assessment process, and a recommendation given as to level of response. Species management plans will be produced, including recording, site protocols, monitoring procedures, control measures, off-label chemical recommendations (where appropriate), trace-back and trace-forward, etc. Investigation of weed spread vectors, e.g. Internet, mail-order, interstate trading, and performance audit of Regional works will be made. Obviously grasses are anticipated to feature as invasive species from time to time.

The New and Emerging Weeds Officer (NEWO), will administer a Statewide project, based in the Port Phillip Region. This person will manage on-ground works, ensure recording on the IPMS database, and ensure operations are carried out. The NEWO will also co-develop publicity, monitor potential new weed sources, and assist with training of NRE staff. Other NRE Regions will also have staff dedicated to managing new weed incursions.

Rapid response actions to date have included sites of the highly invasive stipoid grass Mexican feather grass *Nassella tenuissima* found and eradicated; hawkweeds *Hieracium aurantiacum* and *H. pilosella* recorded; Japanese knotweed *Fallopia japonica* recorded and contained; the aquatic rarity Senegal tea *Gymnocoronis spilanthoides* managed; new *Salvinia* infestations eradicated; several horsetail *Equisetum* sites found, and nursery surveys and trace-back operations conducted. It is predicted that although the projects will initially uncover new weeds and sites of infestation, the publicity, trace-back and strategic approaches will lead to many fewer cases of new weeds being introduced into Victoria.

Pest Plant Distribution Prevention Strategy

This project covers propagation, distribution and sale of plants, but does not include enforcement measures for existing infestations. Taxa will be declared under the 'Restricted Weed' category of the Catchment and Land Protection (CaLP) Act. Compliance will be enforced under the Act for acts of propagation, sale, trading, giving away, transporting or otherwise distributing declared plants. All plants that pose significant threats have been assessed. It is anticipated that over 300 taxa will be included.

Accidental (ie. contaminant) distribution of all plants will be managed by creating vendor declaration systems and codes of practice where existing quality assurance systems are not working or in place. The vendor declaration process is designed to be self-policing, with non-compliance generally a civil matter in the first instance. Vendor declaration procedures are being developed for hay, grain, topsoil and produce. Other processes are also being created for machinery such as harvesters and mowers.

The Pest Plant Distribution Prevention Strategy (PPDPS) is based on a proven model developed in New Zealand by Craw, Vervoort *et al*. It attempts to ensure a smooth transition from current and somewhat laissez-faire commercial practice to a more precautionary approach based on assessed threats, backed up by legislation. The Strategy will include taxa from national and other State lists, e.g. Weeds of National Significance, Australian Weeds Committee priority species, AQIS and NAQS lists, and all declared taxa from other States that pose potential threats to Victoria. The key tactic involves extensive and confidential consultation with the nursery industry, with withdrawal of listed taxa ahead of the legislative ban. The phase-out period allows for disposal of current stock and maintains industry profitability. Both the periods of phase-out and time before the Strategy is revisited are negotiable items with industry.

The PPDPS has a Communication Plan, and work is being done to reduce demand for key species by publicity on

their undesirable attributes. Advisory products are being created to ease the transition period. Stakeholder and expert input has been utilized and submissions have been received from Catchment Management Authorities, Victorian Farmers Federation, producer groups, Landcare, Coastcare, Friends groups, Cities, Shires, Consultants, other DNRE Divisions and other States.

Inclusion of grass species

As stated above, the list of proposed taxa is currently confidential, to protect commercial interests. However the following taxa have been assessed, and it is anticipated that many of them will be declared as noxious weeds:

1. All *Nassella*, *Achnatherum*, *Aegilops*, *Cortaderia*, *Spartina* spp., i.e. these genera entirely.
2. Some *Aira*, *Alopecurus*, *Ammophila*, *Andropogon*, *Arundinaria*, *Arrhenatherum*, *Arundo*, *Avena*, *Briza*, *Cenchrus*, *Chloris*, *Critesion*, *Ehrharta*, *Glyceria*, *Jarava*, *Panicum*, *Pennisetum*, *Phyllostachys*, *Vulpia*, *Piptochaetum*, *Piptatherum*, *Sporobolus* spp.

Next steps

DNRE is currently considering if any of the proposed taxa have potential worth in primary production. Any values will then be offset against threats. The list of plants will then be offered to Nursery and Garden Industry Victoria for negotiation and phase-out from trade. It is anticipated that declaration will be effected early in 2003, however by that stage all key taxa should have long disappeared from trade.

Impacts and control of exotic stipoid grasses in Australia – what have we learnt since 1998?

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Summary

A comparison was made between the broad principles, outlooks and practical strategies for control of exotic stipoid species in Australia, as expressed in the outcomes of the 1998 Nassella workshop and the outcomes of the 2002 Exotic Stipoids workshop. All of the broad principles identified in 1998 were confirmed as still relevant for 2002. Some principles were extended. In addition several new key principles arose. In particular the need for education, training and coordination to identify exotic stipoids entering Australia, or new areas within Australia, was clearly identified. The need to develop risk analysis for each potential exotic stipoid species or groups of species was also identified, as was the need to integrate ecological and economic understandings of exotic stipoid control, so as to best direct available resources. All of the key strategies for management and control of exotic stipoids from 1998 were also still relevant in 2002. The need for targeted research, education and management that took account of the different stipoid species and the individual geographic and land management contexts for control was highlighted. Also identified was a need for effective coordination of effort, across species, land use types and regions.

Introduction

In 1998 a major two day *Nassella* Workshop was held at Victoria University, St. Albans to bring together current understandings about the biology and control of serrated tussock (*Nassella trichotoma*) and related species in Australia. The outcomes of the 1998 workshop were reported in a special edition of Plant Protection Quarterly (Volume 13 No. 2). In March 2002, a group of over 160 people representing a wide cross-section of stakeholders involved in the control of the south American *Nassella* and related species assembled at Victoria University, St. Albans to review what had been achieved, what had been learnt, and what new initiatives were required, since the 1998 workshop.

The original *Nassella* workshop in 1998 was notable for two key reasons. Firstly, although the major focus of the workshop was on control of serrated tussock, nevertheless other exotic stipoid grasses which had existing or potential weed attributes were included for discussion. Secondly, the workshop brought together for the first time representatives from agricultural and conservation backgrounds and attempted to identify a set of broadly common principles and preferred directions for all stakeholders. These were reported on page 103 of Plant Protection Quarterly, 13 (2).

The purpose of this paper is to review the outcomes of the 1998 workshop, to ask 'how far have we achieved our aims?' and to begin to identify any new key areas, issues and aims arising from the 2002 workshop.

At the beginning of the 2002 workshop, participants were reminded of the 1998 outcomes and provided with a questionnaire which asked them to reflect on these outcomes, and what new areas or issues they considered to be relevant. In total, at the end of the workshop and in the week following, thirty-six questionnaire responses were received, across a range of stakeholders. The responses in these questionnaires were compared with the summarized outlooks of participants at the 1998 Nassella workshop. The broad views expressed in the papers presented to the 2002 workshop, which are published in this volume of Plant Protection Quarterly, were also include in the analysis of outcomes and directions.

Broad principles and outlooks of the 1998 workshop – how relevant for 2002?

The 1998 workshop identified seven main principles and outlooks, and these are considered in turn below in light of what arose at the 2002 workshop.

1. Exotic stipoids have high seedbank and recruitment – so these species need special control strategies. Is this still relevant? What approaches are needed?

There was a mixture of feeling between the importance of coming to terms with the population dynamics of exotic stipoids, and its variations across south-eastern Australia, and implementing the common elements of integrated weed control, which are largely know already, and which can be applied for exotic stipoids. Planning is currently under way to determine population dynamics for serrated tussock and Chilean needlegrass (Kriticos this volume). These data for other widespread exotic stipoid species are also required. The outcomes of these studies