The Secretary
Senate Environment, Communications, Information Technology
and the Arts References Committee
Parliament House
CANBERRA ACT 2600

WMSSA
WEED MANAGEMENT SOCIETY OF SOUTH AUSTRALIA INC.

Re: Inquiry into the regulation, control and management of invasive species and the Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002

October, 2003

Dear Sir/Madam,

The Weed Management Society of South Australia Inc. (WMSSA Inc.) wishes to make a submission to the Inquiry into the regulation, control and management of invasive species and the Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002.

A number of issues raised in the terms of reference have major significance to the WMSSA Inc. Our submission follows the terms of reference:

(a) the nature and extent of the threat of invasive species pose to the Australian environment and economy

In South Australia (SA) there are many weeds of concern, with economic, environmental and social impacts in a range of landuses including cropping, forestry, pastures, native vegetation, waterways and urban areas. Many of SA's weeds are also problems in other southern states, particularly Victoria and Western Australia. There are over 90 weed species that are proclaimed plants on the state's register. Nine Weeds of National Significance (WONS) are naturalised to various degrees across SA; bridal creeper, boneseed, Athel pine, blackberry, gorse, Chilean needlegrass, willows, parkinsonia and mesquite. Other weeds of state significance include silverleaf nightshade (*Solanum eleagnifolium*), feral olives (*Olea europaea*), Cape broom (*Genista monspessulana*), African boxthorn (*Lycium ferocissimum*) and major crop and pasture weeds such as wild

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oats (*Avena* spp.), annual ryegrass (*Lolium rigidum*), salvation Jane (*Echium plantagineum*) and capeweed (*Arctotheca calendula*). SA also has the only known infestation of branched broomrape (*Orobanche ramosa*) in Australia. This parasitic weed is a massive threat to the productivity and market access of Australia's agriculture, and is subsequently the subject of a nationally funded eradication campaign.

Three case studies are presented below to illustrate the management problems posed by weeds in SA:

Olives (*Olea europaea*)

- The olive (*Olea europaea* L.) was cultivated on a large scale in SA in the late 1800s and early 1900s. However many plantations were then abandoned due to low demand for olive oil. Native and feral birds subsequently consumed the unharvested fruit crops and feral olive infestations commenced in the Mt Lofty Ranges east of Adelaide. Today, feral olives are SA's worst tree weed, being widespread across southern SA, with severe infestations in the Adelaide region. Bird dispersal brings the weed into tracts of native vegetation, with catastrophic long-term results. In a Flinders University study, native plant species diversity and canopy cover was found to be 50% and 80% lower respectively, in a native eucalypt woodland heavily invaded with feral olives. This demonstrates the serious environmental threat posed by the weed. Feral olives also pose a significant human health and safety issue. Their pollen is highly allergenic, and is a major cause of respiratory illnesses in the Mediterranean Basin. Fuel loads are also very high in infestations, posing major fire threats to property and people in peri-urban areas.
- Feral olives are a classic conflict of interest between economic development and environmental protection. The 1990s have seen resurgence in the olive industry, and subsequently a threat of greater feral olive problems in SA and in other parts of temperate Australia. In order to manage the risk, feral olives have been proclaimed across SA, so landholders have a legal responsibility for their control. However in practice this is difficult to enforce, with costs of up to $15,000 per hectare to remove a dense infestation of feral olives. The Animal and Plant Control Commission in conjunction with an Olives Advisory Group developed risk assessment and management guidelines. Local governments can use these guidelines to determine whether a proposed orchard poses an unacceptable risk to nearby native vegetation, and hence deny planning approval. However, there has been inconsistent adoption of the guidelines. They also do not apply to small olive groves for personal consumption.
- A national strategy to managing feral olives is needed, to avoid a repeat of the severe infestations which are now faced in the greater Adelaide region. The remnant grassy woodlands to the west of the Great Dividing Range in eastern Australia are particularly at risk. Priority needs to go early intervention in areas of high biodiversity value. Olive plantations have an obligation to control any escapees from their properties.

Asparagus species (bridal creeper, bridal veil, climbing asparagus)

- Bridal creeper, *Asparagus asparagoides*, is South Australia's worst environmental weed. It is widespread in bushland across the southern settled areas of the state, it impacts severely on biodiversity by smothering native plants, and it has spread rapidly with fruits eaten by birds and foxes. Due to regrowth from a dense root system it is near impossible to eradicate with herbicides. Fortunately, due to State/Commonwealth investment in biological control, it appears that bridal creeper can be suppressed. In particular, the bridal creeper rust, *Puccinellia myrsiphylli*, is causing dramatic levels of defoliation at sites where it has been released in the past several years.
- Bridal creeper is a Weed of National Significance (WONS). Unfortunately it achieved this status by being ignored as a garden escape for decades until it was very widespread and beyond containment. Biocontrol offers promise of it being "delisted" in the future as a WONS. However, we have other *Asparagus* weeds, which are now threatening to replace bridal creeper. Two of key concern are bridal veil, *A. declinatus*, and climbing asparagus, *A. scandens.* Bridal veil is more aggressive than bridal creeper, and infestations have been found on the Eyre, Yorke and Fleurieu Peninsulas, Kangaroo Island and the Barossa Valley. Climbing asparagus is New Zealand's worst *Asparagus* weed, and three small infestations are known in the Mt Lofty Ranges, east and south of Adelaide. It is fundamental that we invest in searching for, containing, and where possible eradicating infestations of new Asparagus weeds. We simply cannot afford to repeat the past mistake of ignoring bridal creeper until the widespread damage to biodiversity had already been done.
- Various regional Natural Heritage Trust (NHT) projects have tackled bridal creeper and bridal veil in South Australia in recent years (totalling approximately $0.5 million in Commonwealth NHT funds since 1996). The focus has been on protecting high value conservation sites from invasion and spread, regional containment and local eradication. The greatest investment for bridal creeper has been the identification and release of biocontrol agents. In particular, a CSIRO project on the national redistribution of agents (which has received $ in NHT funds for since 2002) has been very effective in engaging community groups in biological control.

Perennial Grass Weeds

- There is a wide range of perennial grass weeds threatening agriculture, the environment and public safety in South Australia. These are the "hidden weeds", as most people in the community do not distinguish different grasses, let alone recognise them as a threat. There are at least ten species of significant current and/or future impacts.
- A group of grass weeds with mutual concern to graziers and conservationists are the non-palatable invaders such as Chilean needlegrass (*Nassella neesiana*), Coolatai grass (*Hyperrhenia hirta*), Texas needlegrass (*N. leucotricha*), serrated tussock (*N. trichotoma*) and African feathergrass (*Pennisetum macrourum*). These grasses overtake pastures and invade native grasslands and woodlands. Chilean needlegrass and serrated tussock are WONS, and a NHT project has just commenced (albeit two

years after initial project submission to the Commonwealth!) to determine the current distributions in South Australia of such stipoid grasses. Coolatai grass has formed tall (1.5 m) monocultures in council reserves and parklands in northern suburbs of Adelaide, increasing the risk of fires in urban environments. Investment in surveillance, education of landholders on grass weed identification and development of effective control techniques is vital to achieve containment of these serious weeds.

- Another group of grass weeds represents a conflict of interest between agriculture and the environment. Pasture grasses such as phalaris (*Phalaris aquatica*), perennial Veldt grass (*Ehrharta calycina*), tall wheatgrass (*Thinopyrum ponticum*) and buffel grass (*Cenchrus ciliaris*) can provide valuable livestock fodder when managed well, and also contribute to mitigating dryland salinity in rural environments. However, such grasses have also invaded a range of natural environments, including native grasslands, woodlands, mallee, heath and swamps. Some such grasses have been widely planted for many decades and their containment is not feasible. However, for recent grass introductions the feasibility of risk management practices such as buffer zones for plantings in the vicinity of native vegetation should be examined.

(b) the estimated cost of different responses to the environmental issues associated with invasive species, including early eradication, containment, damage mitigation and inaction.

A basic principle of weed management is that prevention is the most cost-effective action, avoiding significant economic and environmental damage. Cost-effectiveness then declines as one moves through eradication, containment and damage mitigation. It should be noted however that this decline is mainly due to the weed becoming increasingly widespread, and hence having had greater impacts before intervention. Eradication, containment and damage mitigation (e.g. biocontrol) still have high benefit:cost ratios. The dual considerations of a weed's potential threat and the feasibility of managing this threat should determine the most appropriate response.

(c) the adequacy and effectiveness of the current Commonwealth, state and territory statutory and administrative arrangements for the regulation and control of invasive species

- The Weed Risk Assessment System used at the Commonwealth border by Biosecurity Australia has been a very effective means to screen species coming into Australia. Of concern has been the limited resourcing of this system, leading to delays in assessments (frustrating both plant importers and weed managers).
- The EPBC Act has scope for national declaration on the trade of invasive species, but no efforts to implement such a list are evident. There is a major opportunity here for a joint Commonwealth-State/Territory approach on the regulation of trade in invasive garden plants. The approach to date of seeking voluntary removal from sale of known

garden invasives has increased awareness of the issue, but not resulted in high levels of compliance. Garden plants are the main source of future weed threats, and effective, preventative intervention is vital.

- The *Animal and Plant Control (Agricultural Protection and Other Purposes) Act*, 1986, has been effective in South Australia for containing the spread of well-known agricultural weeds (e.g., salvation Jane, *Echium plantagineum*). However, it does not work well in practice for new weeds or environmental weeds. Where a new weed is limited to several properties, there is a hesitance to enforce a high level of control (and hence cost burden) on a few landholders. For environmental weeds, there is a hesitance to enforce control in bushland, where there is no short-term economic gain to control and where major landholders (e.g., national parks) simply do not have the funds for control.
- South Australia has a poor level of funding for weed management. Whereas Queensland, New South Wales and Victoria have one to several well-staffed research stations focused on weeds, the South Australian government has only several full and part-time weed research staff scattered across various organisations. The Animal and Plant Control Commission has had successive declines in its operating budget for the past decade. National Parks budgets for weed control works have similarly been cut to only thousands of dollars per park, with a major reliance of Friends groups for the bulk of weed management activities. The South Australian Weeds Strategy has been unfunded since its development, except for the formation of a state committee. South Australia needs to invest in weed surveillance and early intervention. A proactive approach with the garden industry to remove invasive, unproclaimed garden plants from sale needs to be funded and enforced. Greater investment is needed in research to develop cost-effective techniques for controlling some of our most intractable weeds.

(d) the effectiveness of Commonwealth-funded measures to control invasive species

- The WONS program has been an excellent initiative. However, Environment Australia was only able to provide one year of funding for its eight weeds (with a disproportionately large amount going to one weed, *Mimosa pigra*). No serious weed is controlled in one year, and "on-ground" projects need at least three years to achieve sustainable progress in controlling infestations. There have been difficulties in the time it has taken for projects to be finally approved for NHT funding, with eventual contract dates mis-aligned with weed growth cycles (for searching and control). NHT investment in biocontrol research has been vital to success against certain WONS (e.g., bridal creeper).
- The objective basis for the selection of weeds on Environment Australia's Alert List has not been made clear. Whilst it is a vital initiative to target new environmental weed threats, the national list approach does not match well with the new NRM regions focus of NHT. It would be better to encourage regions to invest in surveillance, risk assessment and early intervention programs for new environmental

weeds. This is more strategic than the national list approach. The New Zealand Department of Conservation is the international leader in this field, with a funded surveillance and containment strategy in place for regional conservancies.

- Funding of the Cooperative Research Centre for Weed Management Systems, and the follow-up funding of the CRC for Australian Weed Management (hereafter the Weeds CRC), has been an excellent investment. This has led to significant levels of interstate collaboration, leading to new technologies, biocontrols and management approaches. South Australia has been a major beneficiary of the Weeds CRC.
- Commonwealth Government spending on weeds has been disproportionate to the costs inflicted by weeds. For example the National Action Plan for Salinity represents a commitment to spend $1.4 billion against an estimated annual social costs of salinity of $200 million. This compares to an estimated annual cost of weed species to agriculture of $4.0 billion per annum in control costs, lost production and crop contamination and Commonwealth Government spending of $20 million allocated for the WONS program.

(e) whether the Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002 could assist in improving the current statutory and administrative arrangements for the regulation, control and management of invasive species.

- The categorisation of invasive species currently present in Australia is a good initiative, provided this is done on an objective basis, using a standard risk assessment process. Formal classes of "eradicable" and "substantially containable" species will provide a quantitative measure of the number of species, magnitude of threats and total cost of effective intervention against these species. The class of "beyond eradication" is less useful, as this downplays the benefit of investing in research (e.g., biocontrol) to manage widespread species of significant environmental or economic impact. Most of the WONS would fit into this "beyond eradication" category, yet strategic investment to limit their future impacts has been vital. The amendment should aim foster better investment in management of key invasive species threats across the current distribution spectrum from pre-introduction to widespread species.
- The current Weed Risk Assessment (WRA) system used by Biosecurity Australia for new plant imports is effective, scientifically-based, and accepted under international trade agreements and standards. The specific exclusion of pasture grasses and ornamental plants is simplistic and unscientific - species posing weed threats should be detected by the WRA system anyhow. Such exclusions will only foster illegal trade in undeclared seed imports such as through Internet transactions. The majority of Australia's future weeds are already in our gardens. Resources are much better spent on surveillance and early intervention within the country, rather than unnecessarily tightening border controls.
- The amendment does not capture those native species that could be invasive when established out of their original native range. Current examples in SA include

Cootamundra wattle (*Acacia baileyana*) and Sweet pittosporum (*Pittosporum undulatum*). The definition of invasive species needs to be better established to include species that cause or may cause adverse impacts on local native species and ecosystems when introduced beyond their accepted normal distribution. It is appreciated that adverse impacts and species distributions cannot always be objectively established.

- The preparation of threat abatement plans is welcome, but these will be ineffective unless the Commonwealth and States/Territories have a formal, ongoing funding agreement to enact the plans. The WONS plans that have been prepared are essentially threat abatement plans, but actions have stalled when funding assistance from governments have stopped.
- The Invasive Species Advisory Committee and the rules which will govern its operation need to provide for independence from the Minister, with the Committee having powers to make recommendations public.
- The amendment should not make it more difficult to investigate and import potential biocontrol agents. There is an irrational public fear about biocontrol agents to control invasive species. Many in the community are concerned that the species themselves will become invasive, yet there are exhaustive assessment and quarantine protocols already in place. The acceptance of ongoing biodiversity loss by an environmental weed and the potential for significant off-target damage through indiscriminant use of herbicides is a much greater risk than the introduction of a thoroughly researched biological control agent.

We thank you for the opportunity to provide a Senate Committee submission on the nationally significant threat of invasive species.

Yours sincerely,

Dr David Bass, President
Mr Neville Crossman, Secretary
Mr Noel Richards, Treasurer
Dr John Virtue, Member
Executive Committee of the Weed Management Society of South Australia Inc.