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To the Committee Secretariat

**Senate Environment and Communications - Inquiry into Environmental Biosecurity**

The Council of Australasian Weed Societies appreciates the opportunity to provide comments on the *Senate Inquiry into Environmental Biosecurity*. This Inquiry into Environmental Biosecurity is an important process that investigates the adequacy of arrangements to prevent the entry and establishment of invasive species likely to harm Australia's natural environment.

The Council of Australasian Weed Societies (CAWS) is an independent body with an interest in weeds and their management. The Council consists of delegates from weed societies from every state of Australia and the Plant Protection Society of New Zealand.

Due to our strong interest in understanding and controlling weeds we have focussed our submission on the threat of environmental weeds rather than other invasive species.

**The problem of environmental weeds in Australia**

Environmental weeds in Australia pose a severe and costly problem, causing significant ecological impacts. CSIRO estimates that on average 10 new plants establish in the wild each year, mostly from gardens.<sup>1</sup> This rate of establishment continues to grow as illustrated by Randall (2007)<sup>2</sup>.

Most environmental weeds in Australia have been deliberately introduced via legal means, a pathway not covered by this inquiry. Addressing this problem requires changes to laws and policies and improved ways of resolving conflicts between environmental risk and economic activity.

Examples of serious weeds in Australia that have established as a result of illegal or accidental introductions include those identified on the Department of Agriculture and Forestry's (DAFF) website<sup>3</sup>.

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<sup>1</sup> Groves, R. H., Boden, R., and Lonsdale, W.M. 2005. *Jumping the Garden Fence: Invasive plants in Australia and their environmental and agricultural implications*. CSIRO report prepared for WWF-Australia. WWF-Australia, Sydney.

<sup>2</sup> Randall, RP. 2007. *The introduced flora of Australia and its weed status*. CRC for Australian Weed Management publication.

<sup>3</sup> See: <http://www.daff.gov.au/animal-plant-health/pests-diseases-weeds/weeds/incursion>





Major pathways for environmental weeds include internet sales and mislabelling of nursery plants.

**The adequacy of arrangements to prevent the entry and establishment of invasive species likely to harm Australia's natural environment, including:**

- (a) recent biosecurity performance with respect to exotic organisms with the potential to harm the natural environment detected since 2000 and resulting from accidental or illegal introductions from overseas, including:**
  - (i) the extent of detected incursions, including numbers, locations and species, and their potential future environmental, social and economic impacts**

A recent example of a biosecurity threat that crosses both industry and environmental assets is the incursion of myrtle rust into Australia. Myrtaceous plants are one of the most significant families of Australian native plants, and impacts on the eastern states indicate that some of these species are highly susceptible and at risk of widespread decline. According to the Department of Parks and Wildlife (DPaW) in Western Australia, the likely impacts of myrtle rust if it arrived in Western Australia are unknown. There are approximately 1,215 species in the Myrtaceae family in Western Australia which could be at risk with conditions in the South West of Western Australia being favourable to the development of this disease<sup>4</sup>. It also poses a significant threat to many ecosystems along the east coast of Australia. CAWS notes that while the risks associated with myrtle rust were understood well before the rust arrived in Australia, this did not lead to proactive investments in prevention, even though it was recognized that little could be done to prevent spread if it were detected. It is critical therefore that improved processes and linkages need to be established between risk assessment and risk management processes nationally. For example, one only needs to look at the devastating impacts of *Phytophthora cinnamomi* (dieback disease) for an indication of the potential for devastating changes to natural ecosystems as an example of how poor management and research can have long-ranging impacts<sup>5</sup>.

- (ii) the likely pathways of these recently detected incursions and any weaknesses in biosecurity that have facilitated their entry and establishment**

Internet plant orders (seeds, bulbs/corms) both from overseas and within Australia (between states) and potential for quarantine systems failures in checking mail postal orders. This issue is discussed further below in section (b)(viii).

In addition, whilst weed hygiene checks in suspect locations such as those identified in weed hygiene procedures used by the construction and mining sector, of which excellent examples have been developed by both the Civil Contractors Federation (CCF)<sup>6</sup> and also by the Queensland Government, are undertaken, these are not necessarily utilised by all sectors or companies throughout Australia. Furthermore, potential gaps have been identified in quarantine systems where small wind-borne seeds from e.g. Asteraceae species stick to plastic packaging materials (through e.g. static electricity perhaps) used to cover goods and equipment being transported by road, rail and shipping vessels.

<sup>4</sup> See: <http://www.dpaw.wa.gov.au/management/pests-diseases/206-myrtle-rust>

<sup>5</sup> See: <http://www.dpaw.wa.gov.au/management/pests-diseases/129-phytophthora-dieback>

<sup>6</sup> CCF, A Guide for Machinery Hygiene for Civil Construction. See <http://www.civilcontractors.com/resource-guide-for-machinery-hygiene-for-civil-construction-available-for-general-use>



- (iii) the extent of quarantine interceptions of exotic organisms with the potential to harm the natural environment, including numbers, locations, species and potential impacts

No comment.

- (iv) any reviews or analyses of detected incursions or interceptions relevant to the environment and any changes in biosecurity processes resulting from those reviews or analyses

No comment.

(b) **Australia's state of preparedness for new environmental incursions, including:**

- (i) the extent to which high priority risks for the environment have been identified in terms of both organisms and pathways, and accorded priority in relation to other biosecurity priorities

The Australian Weeds Strategy 2006 was endorsed by all Australian government through the Natural Resource Management Ministerial Council<sup>7</sup>. The strategy has as one of its seven principles:

"Prevention and early intervention are the most cost effective techniques for managing weeds." The first of the strategy's three goals is to "prevent new weed problems". Under this goal, a range of actions are proposed, including the identification of pathways, strengthening of pre-border and border controls, surveillance and contingency planning and the development of a national weed spread prevention plan.

The implementation report 2006-2012 that reviewed the Australian Weeds Strategy found that of the 45 actions, 27 were at least adequately complete (meeting at least 60% of outcomes), 15 had fallen short of expectations and three had not been implemented.<sup>8</sup> Nine of the fourteen actions under the prevention goal were adequately completed, however some 'completed' actions require more work, such as the promised creation of a National Weed Spread Prevention Plan and the development of contingency plans.

The Australian Weeds Strategy is now out of date and a new strategy is under development. It can be acknowledged that this strategy saw an increased focus on environmental weeds, the development of the Weeds of National Significance initiative and the establishment of a National Environment Biosecurity Response Agreement.

The National Environmental Alert Weeds list was established in 2000 and lists weeds in the early stages of establishment that have the potential to severely impact on biodiversity if they are not managed. Insufficient resources are available to undertake full eradication programs for these weeds. It is a lost opportunity that none of these weeds have yet been eradicated. The list is becoming out of date and requires regular updating.

**CAWS recommends** that the new National Weed Strategy is rapidly developed and that this strategy places greater emphasis on actions that achieve prevention and eradications through early action.

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<sup>7</sup> NRMCC. 2007. 'Australian Weeds Strategy – a national strategy for weed management in Australia'. National Resource Management Ministerial Council, Australian Government Department of the Environment and Water Resources, Canberra.

<sup>8</sup> Australian Weeds Committee. 2012. 'Australian Weeds Strategy Implementation Report 2007-2012.'



(ii) **the process for determining priorities for import risk analyses and the process for prioritising the preparation of these analyses**

CAWS believe that the import risk analyses processes have come a long way since the WWF publication's *"Front Door Wide Open to Weeds"* (by H. Spafford-Jacob, R.P. Randall and S.G. Lloyd) and *"Closing Australia's Quarantine Loophole to New Weeds"* (by Andreas Glanzig) were released.

Weed officers from around Australia (Csurhes et. al. 2006) recommended that a "more effective and efficient way to deal with such a large number of potentially invasive plant species may be to list species that are permitted to be sold and prohibit sale of all other species until they can be properly assessed for weed risk."<sup>9</sup> Such an approach was under active consideration by state and federal governments in 2007 and is now currently being considered for NSW. We support the approach of using the Permitted Lists at both the National and State levels of government for pre-border assessments prior to entry to Australia and between states such as for arrivals into Western Australia and Tasmania.

**CAWS recommends** that a permitted list approach be implemented for the sale and movement of weeds across Australia.

(iii) **the current approach to contingency planning for high priority environmental risks and the process by which they were developed**

As part of the National Weed Strategy, a pathway risk analysis for new weeds was conducted via a survey of over 100 weed experts. This report found that, "Trade in Fodder, Ornamental plants and Aquarium plants, contamination of Agricultural produce and Machinery and vehicles and natural Water movement currently pose the greatest impact risk of weed ingress."<sup>10</sup>

Since this time, there are no national contingency plans to lower the risk from all high priority identified weed pathways for environmental weeds, however some states have developed their own contingency plans for new outbreaks of weeds. Some specific measures introduced included the construction of 75 vehicle wash-down facilities in Queensland.<sup>11</sup>

**CAWS recommends** that a national contingency plan and risk reduction program be developed for high priority weed pathways.

(iv) **the adequacy of current protocols and surveillance and their implementation for high-priority environmental risks**

At the post-border phase, in terms of the adequacy of current protocols and surveillance and their implementation for high priority environmental risks, the following factors are under-resourced, under-rated and under-represented at the state and local government levels:

- Standardised and commonly accepted surveillance protocols, which are broadly promoted and understood (i.e. this is associated with appropriately qualified and trained personnel);

<sup>9</sup> Csurhes, S. Randall, R., Goninon, C., Beilby, A., Johnson, S. and Weiss, J. 'Turn the tap off before you mop up the spill': exploring a permitted-list approach to regulations over the sale and interstate movement of potentially invasive plants in the States and Territories of Australia, Proceedings of the 15<sup>th</sup> Australian Weeds Conferences. C Preston, JH Watts, ND Crossman, Weed Management Society of SA Inc: 95-98.

<sup>10</sup> Sinden, B., Meulen, A., Coleman, M., Reeve, I. 2008. 'Pathway risk analysis for weed spread within Australia (UNE61).' Final Report to Land & Water Australia. University of New England Armidale, NSW.

<sup>11</sup> Australian Weeds Committee. 2012. 'Australian Weeds Strategy Implementation Report 2007-2012.'



- Availability of appropriately qualified and suitably trained people and personnel (professional taxonomists) to identify invasive plant species at all life stages;
- Adequate promotion of community reporting programs – i.e. secure and appropriate levels of on-going funding for these programs, including information on how these programs work.

Note, whilst community weed reporting programs are invaluable to enable a broader reach throughout the massive landscape that is Australia, they cannot in any way be considered a substitute for skilled and trained professional personnel. In addition, these programs appear to differ between the states and territories.

**CAWS recommends** that it would be worthwhile to undertake an analysis of the different weed reporting schemes to investigate the 'good/bad/gaps' of these schemes and promotion of 'lessons learned' to share information between the schemes.

**CAWS recommends** that increased resources are allocated to improve the number of skilled people that can identify plant species and to expand weed reporting systems.

**(v) current systems for responses to newly detected incursions, the timeliness and adequacy, and the role of ecological expertise**

CAWS supports the current arrangements such as the Declared Pest/Plant legislation and regulation at the State level. This works well for identifying many priority risk plant species. However we note that for example, in Western Australia (WA), this list is predominantly associated with agricultural risk rather than environmental risk. In states outside of WA, the lack of a permitted list approach means that constraints are not placed on emerging weeds until they are declared as pest plants. This is not the best preventative approach. On a positive note, an example of where the current arrangements have worked well include the early identification of a *Parthenium hysterophorus* (Parthenium weed) incursion into WA that was detected in the Pilbara through a regular weed inspection and control program undertaken by trained and skilled personnel and being implemented by Apache Energy in 2011 (see Attachment 1).

In summary, the key factors to this success were regular surveillance, implementation of a rapid response including available expertise to correctly identify the plant species, and agreement on roles and responsibilities and availability of resources to identify the extent of the infestation and to undertake the eradication work within a short time-frame. This case study further illustrates the importance of the implementation of good weed hygiene management practices and the requirements for appropriate resourcing of weed surveillance and management.

Through this experience, as well as a plethora of literature throughout Australia and other parts of the world, it is well recognised that research plays an essential role in providing tools for a timely response. This includes ecological information and potential distribution maps of new incursions to assist in risk assessments, taxonomic or other diagnostic tools to correctly identify and map the current extent of the organism and the development of new management techniques to tackle these novel organisms. However, CAWS has concerns that such research, especially in the field of weed management, has been on the decline. Yet, most of this information is needed before a response or subsequent funding is provided, whether or not a national cost share is agreed upon.

CAWS notes that whilst industry bodies such as the GRDC continue to have a role in funding agricultural weeds research, the decline in funding for weed research is largely in the area of environmental weeds. Environmental weed impacts is a 'public good' issue and therefore requires government leadership and political will to ensure that this area does not suffer and leave the nation's environmental assets vulnerable to exposure from gaps in environmental biosecurity.



Therefore, it is essential that an adequate contingency fund to allow early and adequate response to environmental biosecurity threats where the public as a whole is the primary beneficiary (rather than an industry sector) is available. This type of response also needs to have clearly defined national management plans and structures similar to those that are in place for plant and animal diseases that threaten primary industries.

In addition, there is now a significant gap in research into environmental weeds due to the cessation of the funding, and subsequent existence of, the Australian Weed Management CRC (Weeds CRC). This CRC did play an important coordinating role for RD&E relating to weeds. The absence of the Weed CRC has made the need for the coordination of weed research at the national level more pressing.

**CAWS recommends** that the Australian Weed Management CRC, or a similar organisation, be reinstated as a matter of national priority to undertake and coordinate research efforts relating to invasive species impacting on the environment such as weeds.

**CAWS recommends** that a national contingency fund be established to respond to environmental biosecurity threats.

**(vi) the extent to which compliance monitoring and enforcement activities are focused on high priority environmental risks**

CAWS believes that monitoring and enforcement activities in general are woefully funded, and in general appear to lack political support, and therefore credibility in the broader community. Biosecurity funding is disappearing at the WA, Queensland, Victoria and other state government levels as limited funding is directed elsewhere in both the Agricultural and Environmental government agencies. It appears to be similar at the Federal government level. This is leaving gaping holes in professional monitoring expertise and 'eyes' in the broader community and also in the ability to undertake follow-up where incursions are identified.

The WA Auditor General, in its recent review of the impact of plant and animal pests, supported this finding, concluding that the department of Agriculture and Food, WA "conducts little or no enforcement activity to ensure landholders control pests on their land" and was without an "effective statewide pest management framework"<sup>12</sup>

**CAWS recommends** that governments reinstate resources to weed monitoring and enforcement.

**(vii) the adequacy of reporting on incursions, transparency in decision-making and engagement of the community, and**

There are good examples of incursion reporting and engagement of the community throughout Australia. For example, in Western Australia the Department of Agriculture and Food WA (DAFWA) have the Pest and Diseases Information Service (PaDIS) as a mechanism for community to report suspect plants and animals. This is often broadly promoted through the media as a result of the Department's media statements and through environmental and natural resource management networks. A recent example of this in WA was associated with the DAFWA media on Cactus plants, particularly wheel cactus, detections and the resulting increase of reports of cactus population

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<sup>12</sup> Office of the Auditor General. 2013. Managing the Impact of Plant and Animal Pests: A State-wide Challenge. Report No 18. Perth.





locations received from the community<sup>13</sup>. However, the promotion of similar reporting mechanisms at the national level do not appear to have the same level of promotion and support at the broader community level.

**CAWS recommends** that public reporting of incursions, community involvement and transparent decision-making are essential elements of good biosecurity.

**(viii) institutional arrangements for environmental biosecurity and potential improvements; and**

In terms of institutional arrangements and areas for potential improvements for managing new biosecurity threats to the natural environment, these are likely to be associated with a failure of border security or occur due to the spread of existing species into new environments such as the escape of garden plants from horticultural management. New incursions that may be the result of regulatory process failings at national or state levels are likely to incur a substantial future cost on governments, industry and the community for their management. Therefore there is a need to establish, and to communicate, agreed cost-sharing arrangements involving national and state governments, and where relevant industry, to allow an early and rapid response to incursions to minimise future costs.

The most effective response to new incursions requires enhanced shared responsibility and improvements in:

- surveillance and contingency planning for high risk threats
- decision-making for cost sharing in eradication programs; and
- contingencies to mitigate against system failures and processes for transition to containment or management.

This should also consider the establishment of coordinated and/or collaborative national information systems for biosecurity data and analysis to allow better alignment of priorities and improved communication and collaboration across all sectors. The involvement of adequately funded research is crucial to this process.

It is well recognised that the potential to eradicate such organisms is only feasible if they prevented or are detected early before significant spread or reproduction occurs<sup>14</sup>. It is important therefore that Australia needs to have an ongoing highly effective biosecurity and quarantine system in place. This system needs to exclude not only threats to primary production and human health but also to the natural environment. In addition, Australia needs to implement regular surveillance of key risk pathways and ensure adequate planning and resources to respond rapidly when new incursions are detected. While such measures are relatively well developed for biosecurity threats to primary industries and health, overall the systems are less well developed for threats to the natural environment.

The following examples are key environmental biosecurity risks, i.e. potential new sources of threats, which pose a significant threat to environmental assets that require substantial improvement.

Example 1: Internet sales

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<sup>13</sup> For example, see: <http://www.merredinmercury.com.au/story/2323644/invasive-wheel-cacti-presents-prickly-problem/?cs=1478>

<sup>14</sup> The Invasion Curve is broadly used by many government agencies and academic papers.



Mail-order internet sales represents a growing pathway for illegal weeds entering Australia. At present Ebay allows the sale to Australia of Mexican Feathergrass seeds from countries such as China and the US. While this is a difficult area to regulate, there appears to be little compliance activity directed at reducing the risk from this pathway.

#### Example 2: Mislabelling of Garden Plants

One of the key environmental biosecurity risks which poses a significant risk to environmental assets that requires substantial improvement is the area of garden plant labelling. Garden plant labelling is not standardised throughout Australia, with many plants labelled with only common names and there have been a number of cases where plants have been misidentified by plant wholesalers and distributors. It is well recognised that garden plants pose a significant threat to Australia's biodiversity, this is through the Australian Government's listed Key Threatening Process "*Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants*". There is a broad range of literature that also identifies the risk of garden plant escapees to the natural environment. Mislabelling of plants provides a mechanism by which invasive plant species can be more easily spread, and consequently escape and establish in new environments if they are not detected early by persons who have good plant identification skills and/or are willing to report the matter.

**CAWS recommends** that a national standardised plant labelling scheme be required that includes the botanical or scientific name of a plant as well as the common name.

**CAWS recommends** that attention is given to improving biosecurity systems and institutions that protect the natural environment, modelled on existing systems used for biosecurity for primary industry and health.

#### (c) **any other related matter.**

##### **Economic benefits of weed prevention**

CAWS would like to emphasise that strong action directed at prevention and early action will be far less costly than bearing the ongoing management costs resulting from the establishment of new weeds. This principle has been accepted in the National Weed Strategy and state-based policies relating to biosecurity and weeds.

Significant economic benefits arise from policies and legislation aimed at preventing the introduction and establishment of invasive plant species in Australia. One study estimated that the Commonwealth quarantine permitted list system in place since 2006 will prevent the legal importation of new invasive ornamental plants that would have otherwise cost Australia \$20 billion over the next 100 years<sup>15</sup>.

Within Australia, the economic benefit of action to ban the sale of the ornamental tussock grass, Mexican feathergrass (*Nassella tenuissima*), by several jurisdictions, combined with eradication of any known infestations and specimens, has been estimated to be worth \$39 million (which is the cost to just agriculture from impacts associated with its early invasion phase).<sup>16</sup>

<sup>15</sup> Keller, R.P., Lodge, D. and Finnoff, D.C. 2007. Risk assessment for invasive species produces net bioeconomic benefits, *Proceedings of the National Academy of Sciences*, Vol 104, No.1:203-207.pg.205

<sup>16</sup> Centre for International Economics (CIE) 2001. *The CRC for Weed Management Systems: an impact assessment*. Report by the Centre for International Economics, Technical Series No. 7, Cooperative Research Centre for Australian Weed Management, Adelaide.





In practice, the allocation of resources to weed prevention does not match the emphasis suggested in policy documents or accept the wisdom that there are large costs savings to be made from prevention.

Yours sincerely

Anna-Marie Penna  
Vice President

**Attachments:**

1. Penna, A-M. and MacFarlane, M. (2012). *Parthenium Incident in the Pilbara, Western Australia – How is this a 'Good News Story'?*, 19<sup>th</sup> Australian Weeds Conference, Melbourne