15 November 2013

Weed Management Review
Natural Resources Commission
GPO Box 4206
Sydney NSW 2001

Dear Sir

Subject: Review of Weed Management in NSW - Submission

The Central West Catchment Management Authority is particularly interested in weed management and welcomes the opportunity to contribute to the review.

Weed management is an important issue for this area and the whole State. The Authority has delivered several projects as part of the National Weeds of National Significance program as well has interacted with local government and regional weed management committees in the region.

In the attachment we have addressed the questions asked by the Issues Paper. If you have further question do not hesitate to discuss with Richard Carter, Manager Land Services, Telephone 02 63638608.

Yours sincerely,

Chris Ambler
A/General Manager,
Central West CMA

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<td><strong>4.1 Community ownership</strong></td>
<td>Community groups, especially Landcare groups are very involved in weed management in NSW. The number of Landcare groups listing controlling weeds as the issues they address grow from just 557 in 1999 to 1163 (NSW Landcare, 2013). The growth continues despite no formal weed funding from the Commonwealth as the weeds are managed as part of broader biodiversity and agricultural sustainability programs (Department of Agriculture, Fisheries and Forestry, 2013). These groups seek good information and support from government and local weed control agencies. This is confirmed by the number of weed management publications the groups access from the DPI weeds program – either directly or via local councils. In one year over 156,000 weed management related publications were distributed to the community (Depts Primary Industries, 2013).</td>
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| Do you feel that the current education/awareness programs are working? Why? Why not? | In NSW there are many education and awareness programs, each with different objectives.  
**Training of Local Government Weed Officers**  
Some that are working are the training and education of local government weed management staff. With assistance from the NSW Weeds Action Program and previously from other grants, Department of Primary Industries via the Tocal College has used recognition of prior learning and delivery of subsidised training programs to ensure that the local government weed management staff have skills needed not only to treat weeds but also to plan and manage coordinated weed control programs. In the past few years the of Certificate IV in Weed Management (part of the AHC10 Agriculture, Horticulture and Conservation and Land Management Training Package) has become the standard for weed officers. Future directions should ensure those planning and coordinating local weed management programs have these minimum skills.  
**Awareness of new weed threats**  
The Weeds Action Program has focused on improving the awareness of new weed threats and targeted pathways. These have resulted in detections of 83 new weed incursions in 2011-12 (Dept Primary Industries, 2013) including weeds new to Australia.  
**Targeted education programs**  
Targeting specific audiences have been successful for example school children in NSW (Schembri, et al., 2008), the NSW Weed Awareness Strategy (Schembri & McCaffery, 2008), and a range of targeted communication services (Verbeek, 2009).  
**Awareness of the broader community of weed issues**  
Work by the Cooperative Research Centre for Australian Weed Management identified that the broader community was not aware of weeds as an issue nor did they understand the impact of weeds on food production systems or biodiversity (Martin, 2009). |
most recent Who Cares about the Environment survey in 2012 did not indicate community concerns about weed and did not ask specific questions about weeds (NSW Office of Environment and Heritage, 2013). Earlier surveys of community attitudes reported that weeds and pests were better managed in 2009 compared to 2006 (DECCW, 2010). There have been no reports of success in general community awareness of weeds.

| What are possible means for improving incentives for collaborative actions or penalising non-involvement/requiring involvement? | When considering weed management incentives and dis-incentives for collaborative actions should be considered depending on the scale. For early stage pest invasion, the impact locally is often very small compared to the cost of control to prevent spread and a much larger impact. In these cases some form of incentive is usually needed – be it regulation or subsidies to ensure control is achieved to the desired level to locally eradicate – such as parthenium - or to contain to existing range.

Widespread weeds generally should be managed without enforced control. Where a widespread weed threatens nearby assets, be it agricultural resources or biodiversity incentives provide a useful mechanism. In the Central West we recently completed programs addressing widespread weeds including willows and serrated tussock using incentives. Incentives allow for initial activity however on-going support is needed to maintain the level of control achieved.

| How can we improve community ownership of weed management? | The Local Land Services is well placed to improve community ownership of weed management.

| At what scale (local, regional, state) are awareness-raising programs most effective? | The experience with parthenium and other early stage incursions is that awareness is a key to success. The Statewide Parthenium Weed Committee and regional groups such as Macquarie Valley Weeds Committee has regularly organised television and other media campaigns to coincide with time when the plants are most likely to be found. Similarly the incursions of aquatic weed were detected by using targeted media campaigns (The Profit Foundation Pty Ltd, 2009).

| 4.2 Policy and regulatory framework | The development of the NSW New Plant Incursion Plan (NSW Government, 2009) and supporting plans to detect and manage new incursions have been successful. They detect new weeds early when eradication of sites and containment is achievable.

The Australian Weeds Strategy and the NSW Invasive Species Plan provide a useful framework for roles and responsibilities. In a review of the legislation in Australia it was questioned whether the
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<td>Are current regulations appropriate and effective for managing emerging and widespread weeds?</td>
<td>No. It is well known that widespread weeds are not well managed by using regulation. Benefits of enforced weed control program overstate the benefits they receive where the council or neighbour covers the cost. Governments are very poor at estimating the benefits of enforced control of widespread weeds (Carter, 2000; Auld &amp; Menz, 1987). Systems applying in other states may improve on the current system, especially where councils cover the costs of controlling all “noxious” weeds on roads, the Government on government land and LHPAs (soon to be LLS) cover costs on travelling stock reserves. In South Australia the cost of widespread weed control on public roads is met by the adjoining land holder (Anon., 2004). Extension and Coordination activities, rather than regulation are often the best way for governments to intervene in weed management programs (Carter, 2000, pp. 95-99). The assignment of responsibilities – to land owners, councils and public authorities is problematic. While regulatory responses are needed for new incursions and containment programs for early stage invaders, applying the same responsibilities for widespread weeds will fail. The government’s involvement in widespread weeds should be limited to biological control, especially of weeds of natural environments, water ways and biodiversity and extension and education where there are knowledge gaps. The grains industry has already taken the lead in research, development and adoption of improved weed management within that industry sector.</td>
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<td>What are the opportunities for greater alignment of regulation and policy?</td>
<td>Carter (2000, pp. 98-99) tabulates the advantages of extension, coordination and enforced control activities for weeds. Successful weed management will depend on the achievable objectives for a program. In the early stages of an invasion all three are needed. There may be benefit for coordination and extension activities for widespread weeds however enforced control is unlikely to succeed. In fact attempting to enforce widespread weed control distracts from important programs that attempt to contain weeds such as parthenium in NSW that are not widespread (Carter, 2000, p. 99).</td>
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<td>What are your views on the appropriateness of current compliance and enforcement arrangements? How can compliance and enforcement be more effective?</td>
<td>Enforced control of widespread weeds is expensive. Attempts to enforce control of widespread weed generally fail due to the hidden costs of compliance met by those who do not benefit. Enforced controls as part of an eradication or containment program are very effective. In NSW the success in identifying and treating alligator weed in the North Coast is one example. Compliance is most effective where the outcomes of the program are achievable. Program addressing widespread weeds that only reduce populations provide few long term benefits. The objective of weed control programs should be the same</td>
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Should public land managers be held accountable to the same extent as private landholders? If so, how?  
irrespective of land tenure. The Noxious Weeds Act provides that public land holders must stop weeds from spreading while the private landholders have specific action required based on the class of weed. The outcome is the same, however enforced control is easier to regulate. It is possible to determine if a landholder has treated a weed - it is not easy to access whether a weed has been prevented from spreading from public land.

Again if programs are planned with reasonable objectives, government and public landowners should co-operate. Where program are designed with unreasonable objectives – such as requiring government land managers to suppress widespread weeds to the same level as a grazier would on adjoining grazing land may be unreasonable as all that would result in is a change in abundance of the weed.

What would be a more appropriate and effective weed listing approach?  
Enforced action should only follow from a plan to manage a weed species. The Weed Risk Assessment System is a good way of assessing, especially for weeds that are not widespread (Standards Australia, 2006). The NSW Weed Risk Assessment System provides a basis of assessing feasibility (Johnson, 2009).

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<th>4.3 Institutional arrangements</th>
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<td>What works well with the current institutional arrangements?</td>
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<td>The thing that works well in the current arrangements are:</td>
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<td>1. Local ownership of management of widespread noxious weeds - where the decisions about the level of co-ordinated control is locally decided by local weed control authorities.</td>
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<td>2. Regional cooperation in some areas – where regional priorities are determined and other agencies including government land managers along with key industries are represented to provide a regional approach. This allows Government agencies and Local Control authorities to determine priority weeds for coordinated management.</td>
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<td>3. Central group with strong technical ability to produce and maintain information resources such as websites and publications which local authorities may use.</td>
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<td>4. Central group developing Statewide policies and plan addressing priority issues such as new weed incursions and weed threats.</td>
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<td>5. Local government have a mechanism to collect rates from landholders reflecting the benefits landholders receive from services. Council choose the level of funding based on their identified needs. This allows councils with concerns about specific weeds to design programs and to coordinate them in their local area.</td>
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What do you believe is the appropriate scale (state, regional, local) for delivery of weed management?  
The distributive model for weed management is effective for weed management. Regional organisation determining policy and priorities at a regional level for widespread weeds and a State body for new incursions and early stage invaders.
### Key Weed Management Activities, Including Strategic Planning, Enforcement, Education and Extension Services?

Depending on the type of activity the delivery similarly should be at the appropriate scale. Local government is well placed to manage very local issues. The introduction of Regional weed committees has developed effect policy at a regional level by including government land managers in the discussion.

### What Changes to Current Institutional Arrangements Would You Propose?

The current arrangements do not work for some widespread weeds where local authorities ask for enforced control without any means to effectively enforce the level of control.

There are opportunities to use the Local Land Services to deliver strategic planning, education and extension services. With amendment changes the special responsibilities of councils to coordinate weed control on private lands could also be delivered by Local Land Services.

Academics have looked at the issue. Martin *et al* (2012) considered that people’s attitudes, activities and motivations related to weeds must change for weed management to be more effective. He argued that where institutional arrangements have failed to change the behaviour of people in a society, it is necessary to change the governance system. He proposes strong institutional mechanisms to ensure that those who are responsible for the introduction or the spread of a weed; and resources to compensate for ‘market failures’ where it is not possible to account fully for costs and benefits. They however only recommended research but not solutions.

### How Can Strategic and Coordinated Planning for Weed Management Be Improved?

Strategic planning for weed control at a catchment and landscape level operates well where all key stakeholders, including government agencies responsible for land issues develop programs together. Areas where government agencies are less involved developing delivery policy have difficulty in gaining cooperation from government landholders.

### How Can Accountability and Performance Within the Management System Be Improved?

Catchment Management Authorities will bring to Local Land Services, strengths in monitoring evaluation and reporting. There is an opportunity for these skills to used regionally to improve performance in weed management.

### 4.4 Evidence-Based Decision Making

**What Are Examples of Effective Weed Management Information and Mapping Systems?**

The NSW Herbarium is the major source of information about presence of plants in NSW. The records are easily searched and technically accurate. For new incursions and early stage introduction this facility should continue to be the major repository of information.

For widespread weeds, local control authorities hold the majority of...
the data. This does not assist state-wide or regional planning as the data is often limited to species actively controlled in the area.

Technological changes allow for distributive data systems. While it would be great to have a state-wide mapping system there are limits to the usefulness of data collected from many sources. If privacy and quality of data are able to be overcome a distributed database may help develop information to improve decisions on weed management.

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<th>Are you aware of any examples of standardised monitoring, evaluation and reporting processes that may also be effective for weed management?</th>
<th>No.</th>
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<td>What tools are you aware of that should be considered for state-wide weed monitoring?</td>
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<td>Who is best placed to make evidence-based decisions regarding the management approach for weeds (i.e. eradicate, contain, do nothing)?</td>
<td>A State Government Agency with sufficient technical skills is well placed to make technical decisions about prevention and eradication program. Regional organisations, including the Local Land Service could develop the skills to determine programs to be delivered in a region.</td>
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4.5 Research and development

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<th>Is the current investment in research sufficient (e.g. amount of funding, time scale of funding)?</th>
<th>The investment in weed research relevant to NSW has moved dramatically over the past 20 years with a general shift from State Department to Universities with rural industry research and development corporations driving the research direction. The major impact of this is that weed specific research has become limited to widespread weeds of agricultural systems, with few funds provided to research new weed incursion. Industry bodies will continue to support research weed issues impacting on the agricultural industries. The major gap is for weeds impacting on biodiversity, community and social values, water resources and vegetation.</th>
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<th>How can available research dollars be used more effectively, better prioritised and coordinated and/or better leverage additional investment?</th>
<th>The majority of weed related research is conducted by universities and State research providers. In the past organisations such as the Cooperative Research Centre for Australian Weed Management coordinated much of the research and integrated development and adoption program. Without this type of organisation NSW relies on the industry sectors coordinated research.</th>
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<td>Are you are aware of any additional barriers to effective implementation of weed research outcomes?</td>
<td>The Local Land Services is well placed to improve adoption of weed management with adequate support.</td>
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<td>How can the dissemination of research results and the adoption of new controls and technologies be improved?</td>
<td>The Local Land Services is well placed to improve adoption of weed management with adequate support.</td>
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<td>What roles and responsibilities should research and development corporations have with respect to weeds?</td>
<td>Research and development corporations (R&amp;DCs) are necessarily National and focus on issues that impact on production of specific industries. Weeds with impact that is not associated to specific industries or have mainly on social and environmental impacts are unlikely to be supported by R&amp;DCs. During the period from 1995 to 2007 the two Weed Cooperative Research Centres provided some valuable support for both agricultural weed and environmental weeds research, with the Department of Primary Industries largely developing NSW specific solution through the Weed Research and Development Unit and the Weed Biological Control Unit. The formation of the Local Land Services will necessarily change the model with Agriculture NSW having little capability in weed management</td>
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### References


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Martin, P. et al., 2012. *Innovations in Institutions to Improve Weed Funding, Strategy and Outcomes*, Barton, Canberra: RIRDC.


