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# Assessment of landscape-scale cross-tenure collective action on the management of widespread invasive species

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## BACKGROUND

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Invasive species are one of Australia's most persistent agricultural and environmental challenges. The mobility of invasive species makes them a landscape-scale problem that requires cross-tenure collaboration. The NSW Natural Resources Commission has identified that insights from individuals and organisations involved in land management are critical to better understand the current issues with, and opportunities for, improved invasive species management.

**The aim of this research is to provide an assessment of landscape-scale cross-tenure collective action for the management of widespread invasive species from the perspective of local councils and managers of utilities and infrastructure.**

## METHODS

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Thirty-four interviews were conducted with 37 staff from 31 organisations across NSW. This included 19 staff who work for **local councils** and 18 staff who work for **organisations that manage utilities and infrastructure**, including electricity, gas, water, roads, and rail. These two groups of organisations are referred to as 'council' and 'utilities and infrastructure', respectively.

Interviewees were asked about:

- their role in managing invasive species;
- the most significant issues affecting the management of widespread invasive species;
- the nature and extent of collaboration with private land managers and other organisations;
- changes to invasive species management practices and collaboration since the introduction of the *NSW Biosecurity Act 2015* (the Act); and
- what they see as the barriers and enablers of landscape-scale cross-tenure collective action.

Most of the interview discussion focused on management of weeds because most organisations invest more time and resources into managing weeds than pest animals. Many interviewees discussed management of priority invasive species in addition to widespread invasive species.

## KEY CHANGES AND SUGGESTIONS

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Analysis of the interviews identified three key changes to invasive species management and collaboration since the introduction of the Act. These include:

1. A shift towards evaluating biosecurity risk of weed species to enable asset protection
2. A positive shift in relationships between councils and private land managers
3. Limited changes to landscape-scale cross-tenure collective management of weeds associated with the introduction of the Regional Weed Committees

The following table summarises the interview results. It includes key changes associated with the Act, benefits and challenges that these changes have created, and opportunities for improvement. The headings in the table indicate who raised each change, benefit, challenge and suggestion.

## KEY CHANGES

Key change 1	Benefits	Challenges	Opportunities
<p>Most council and some utility and infrastructure staff identified a shift towards evaluating biosecurity risk of weeds to enable asset protection. This generally translated into a <b>shift away from managing widespread weeds towards new and emerging plant species</b>.</p> <p>No change was documented regarding management of pest animals.</p>	<p><b>Council, utilities and infrastructure</b></p> <p>It is now easier to allocate funding – resources are first allocated to higher-risk invasive species and pathways as well as protecting the highest value assets.</p> <p><b>Council</b></p> <p>No longer spending effort managing entrenched widespread weeds.</p> <p>More time and resources available to identify and manage new and emerging species, including after natural disasters. This means it is easier to tailor invasive species management to the local context and respond to changing circumstances.</p> <p><b>Utilities and infrastructure</b></p> <p>The introduction of the General Biosecurity Duty has resulted in better weed hygiene practices, such as Come Clean, Go Clean.</p> <p>Regional Weed Plans can guide prioritisation of which species to manage on own properties.</p>	<p><b>Council, utilities and infrastructure</b></p> <p>There is lack of clarity and understanding of what “asset protection” means.</p> <p><b>Council</b></p> <p>Significant resourcing is required to evaluate biosecurity risk but there is limited staff and funding available to undertake such evaluations.</p> <p>There is a lack of funding available for asset protection.</p> <p>Reduced management of some widespread species means they are spreading to new areas.</p> <p>There is a sense of disappointment in seeing widespread species increasing in density after years of control.</p> <p><b>Utilities and infrastructure</b></p> <p>Priority invasive species are not consistent across jurisdictional boundaries, which is challenging when their land spans multiple jurisdictions.</p> <p>It is difficult to evaluate “high risk” for invasive animal species.</p> <p>It is hard to know which invasive species occur across large tracts of land, especially when the organisation is reliant on contractors and infrastructure-focused staff to do control work.</p>	<p><b>Council, utilities &amp; infrastructure</b></p> <p>Landscape-scale agreement is needed to identify which are the priority assets and the key invasive species threats to those assets to enable better coordination of efforts across tenures. This could be lead by regional coordinators.</p> <p><b>Researchers</b></p> <p>In identifying landscape-scale assets, consideration needs to be given to what ‘assets’ mean beyond environmental and production, such as social and cultural assets.</p> <p><b>Utilities and infrastructure</b></p> <p>There is a need for the NSW government to develop an invasive species data sharing platform to facilitate real-time sharing of data across organisations on where and when control has been undertaken to better protect shared assets.</p>

Key change 2	Benefits	Challenges	Opportunities
<p>Some council staff identified a <b>shift in their relationships with private land managers</b>. Utility and infrastructure staff indicated limited changes to their relationships with private land managers since the introduction of the Act.</p>	<p><b>Council</b>  Less focus on enforcement of widespread weeds improves relationships with the community.  The lack of legislation requiring land managers control widespread invasive species makes it easier to visit private properties, assist land managers, explain the General Biosecurity Duty and discuss control options.  The angst private land managers used to feel about widespread weeds is waning.  It is an easier message to sell that all land managers have responsibilities for managing invasive species.</p> <p><b>Utilities and infrastructure</b>  The General Biosecurity Duty requirement to control invasive species, combined with internal Key Performance Indicators and a drive to keep customer complaints to a minimum, provides an opportunity to be a good corporate citizen.</p>	<p><b>Council, utilities &amp; infrastructure</b>  A poor understanding of the Biosecurity Act, the General Biosecurity Duty, and the significance of invasive species among the general population makes engagement difficult.  Poor invasive species management by private land managers undermines relationships and landscape-scale control.</p> <p><b>Council</b>  What is ‘reasonably practicable’ may not be sufficient to prevent spread of invasive species and impacts relationships among neighbours.  It can be difficult to explain to the community why certain invasive species need to be managed in some places and not others.  No longer managing widespread weeds that are a priority for the community undermines relationships.</p> <p><b>Utilities and infrastructure</b>  Public opinion against some invasive species management practices, such as shooting of pest animals, affects relationships and control efforts.</p>	<p><b>Council, utilities &amp; infrastructure</b>  A state-wide campaign led by the Department of Primary Industries is needed to raise the profile of invasive species, and to explain asset protection, everyone’s General Biosecurity Duty, and the need for, and benefits of, working together.</p> <p><b>Researchers</b>  An education campaign needs to be multi-year and go beyond the usual approach to invasive species education that relies on newspaper articles and brochures.  The Department of Primary Industries and Local Land Services need to include social metrics in the evaluation of invasive species management programs and projects to ensure diverse stakeholders are engaged, that social networks are expanding, that understanding of invasive species issues are improving and that there is enhanced capacity for asset protection across all stakeholder groups.</p>

<b>Key change 3</b>	<b>Benefits</b>	<b>Challenges</b>	<b>Opportunities</b>
<p>Most council, utilities and infrastructure staff who are members of Regional Weed Committees identified <b>limited changes to landscape-scale cross-tenure collective management</b> of weeds as a result of the establishment of the committees. Utility and infrastructure staff who are not currently members of Regional Weed Committees could see the value of them and expressed an interest in being involved.</p>	<p><b>Council, utilities &amp; infrastructure</b>  The ability to network with a large number of organisations is valuable. Regional Weed Committees provide an opportunity to share information about common problems and effectiveness of management options.</p> <p><b>Council</b>  Regional Weed Committees enable cross-organisational and cross-tenure collaboration on weed outbreaks. Regional Weed Committees can develop and share educational resources that are available to all committee members to share.</p> <p>The ability to request that utility and infrastructure providers nominate someone to contact has made engagement easier.</p>	<p><b>Council, utilities &amp; infrastructure</b>  There is limited funding and support for regional coordinators.</p> <p>The size of regions is often too large relative to the scale of invasive species challenges.</p> <p>It is difficult to develop an agenda that meets the needs and interests of all participating organisations.</p> <p>There is a lack of asset mapping and prioritisation of regional assets.</p> <p>There is a lack of data sharing across organisations about invasive species management practices.</p> <p><b>Council</b>  It is often difficult to identify who to engage from the utility and infrastructure organisations.</p> <p><b>Utilities and infrastructure</b>  It is not possible to attend the meetings of all Regional Weed Committees because their land spans many regions.</p> <p>There is a lack of engagement of utilities and infrastructure staff by Regional Weed Committees.</p>	<p><b>Council, utilities &amp; infrastructure</b>  Local Land Services needs to provide greater funding and support for regional coordinators to develop inclusive meeting agendas, define regional assets, lead cooperative invasive species management programs, regularly revise and revisit regional plans and ensure they align with site and local government plans (e.g. as per Bushfire Management).</p> <p><b>Utilities and infrastructure</b>  Regional coordinators should invite bush regeneration professionals onto Regional Weed Committees</p> <p>Local Land Services should work with the Department of Primary Industries to investigate the use of regulatory drivers or formal agreements, such as Memoranda of Understanding, to facilitate participation in regional committees and activities.</p> <p><b>Researchers</b>  Regional coordinators should invite contractors to attend Regional Weed Committee meetings.</p>

Beyond these three shifts, interviewees identified a range of other organisational barriers that undermine landscape-scale management of invasive species. These include:

#### **Councils, utilities and infrastructure**

- Limited staff and funding for invasive species management within organisations
- Limited understanding of invasive species management by other staff within organisations
- Small number of experienced contractors available to undertake invasive species control

#### **Councils**

- Lack of support for compliance actions from council management

#### **Utilities and infrastructure**

- A lack of enforcement of the legislation reduces organisational drive for invasive species management.

These barriers indicate potential opportunities for the NSW government to:

- **Address the skills and staff shortages** by investing in education and training programs, like the former Green Corps program, that will increase the number of graduates with skills and interest in becoming biosecurity officers or invasive species management contractors.
- **Review the General Biosecurity Duty obligations to the Biosecurity Act and other legislation that governs how utility and infrastructure organisations manage land**, such as development consents, that require participation in regional invasive species committees, nomination of a key contact, and collaboration (including sharing information or participating in coordinated activities) with adjoining land managers.

## **CONCLUDING REMARKS**

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Many of the challenges of managing widespread invasive species across NSW are consistent with the issues identified in past research on collaborative initiatives in Australia and internationally. There is a need for better definition and mapping of the assets to be protected; greater engagement with diverse stakeholders involved in managing widespread invasive species (particularly utility and infrastructure organisations); a broader education campaign about invasive species to build social expectations and capacity for collaborative management; and better sharing of information about where and when management activities take place.

Regional Weed Committees provide an institutional mechanism to facilitate collaboration, yet there is significant scope to further invest in landscape-scale cross-tenure management of invasive species. This includes reconsidering the membership of regional committees and their agendas to ensure that these committees are relevant to all participants. Regional committees would also evaluate the value of engaging in more collaborative forms of invasive species management beyond sharing information.

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## **ENQUIRIES**

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