

A Gap Analysis of

Regional NRM Organisations' Plant Biosecurity Preparedness and Surveillance Capacity



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NRM Regions Australia – 30 June, 2019

Executive Summary

Australia is fortunate to be free of many damaging plant pests that exist in other parts of the world. If introduced, these exotic plant pests will cause major damage to our economy, environment and people. Estimates of the annual cost of invasive plants alone to Australia is around \$5 billion (McLeod R, 2018). The addition of costs associated with plant pathogens (insects, disease, fungi, etc) results in major losses to the Australian economy. Between 20 and 40 percent of crops are lost to plant disease and weeds globally (Savary, etl 2012).

Preparedness and early detection are a critical component of the prevention of weed and pathogen infestation. It is generally accepted that the return on investment is 1:100 for prevention activities. The plant biosecurity is the shared responsibility of land managers, industry, the community and all levels of government.

Australia's 54 regional NRM organisations have established networks consisting of land managers, local community and industry groups and individuals that covers much of Australia's land mass plus coastal zones. This ideally places regional NRM organisations in a position to drive a shared responsibility approach where they can utilise these networks and build new networks where knowledge and capacity gaps exist in plant biosecurity preparedness and surveillance. This approach builds on the 'Plant Biosecurity Partnership' model, advocated by Plant Health Australia (Plant Health Australia, 2018).

The degree of regional NRM organisations involvement in driving a shared responsibility approach to plant biosecurity preparedness, surveillance and early response across the 54 regions is varied. Involvement ranges from one of being consider core business to others who consider it a lower priority. This project reviews the level of involvement of regional NRM organisations and what is needed to increase that involvement through a survey and discussion groups.

The targeted project outcomes included:

- Increased knowledge of NRM Regions capacity to increase the level of plant biosecurity preparedness, surveillance and early response at the local and regional scale;
- More informed and engaged regional NRM organisation staff regarding preparedness, surveillance and early response opportunities;
- More informed local and regional communities about plant biosecurity;
- Information and data that can inform the development of a strategic approach to further improve plant biosecurity preparedness, surveillance and early response at a regional scale and ultimately across the nation;
- Increased funding opportunities to lift the level of plant biosecurity preparedness, surveillance and early response at the regional and local scale.

Project background

The Department of Agriculture & Water (the Department) have contracted NRM Regions Australia (NRMRA) to carry out a gap analysis of regional NRM organisations plant biosecurity preparedness, surveillance and early response activities and capacity.

The draft gap analysis has been prepared based on information collated from of a survey completed by 51 of the 54 regions across Australia. This analysis has been distributed for further comment and review prior to the final submission is made to the Department.

The development of the report is a crucial first step in positioning NRM regions to explore future roles and identify opportunities where the various organisations may be able to participate in plant biosecurity. There are clear correlations between the roles that NRM regions carry out and the systemic gaps that exist within plant biosecurity. It is therefore imperative that this document forms a strong foundation for future work and articulates a pathway for how NRM may realistically become better engaged and build capacity in this area. Distinct strategies will assist the NRMRA and the Department in understanding how to facilitate the steps that are required to build capacity.

Findings

Fifty-one regional NRM organisations provided survey responses. These responses indicated that the existing involvement of regional NRM organisations in plant pest preparedness, surveillance and early response is relatively low for pathogen and invertebrate pests, particularly for the nationally declared high priority exotic plant pests. There is a significant increase in involvement in weed preparedness, surveillance and response activities. These activities primarily target endemic weeds or incursions from neighbouring regions or jurisdictions.

The component of preparedness, surveillance and response which regional NRM organisations identified as being most involved in is development and dissemination of education and awareness material. Early response was identified as another area in which regional NRM organisations play an existing role.

To the best of the respondents' knowledge, the level of existing involvement for land managers, peak industry bodies, commercial service providers and local governments are relatively low in preparedness, surveillance and response activities. The involvement of government and territory agencies is higher.

The findings revealed that a resource (funding and people) injection into regional NRM organisations would result in a significant increase in delivery of plant pests' preparedness, surveillance and response activities by the organisations. In conjunction with this there was a strong desire to see improved coordination across stakeholders resulting in more effective and efficient delivery of plant biosecurity activities. The regional NRM organisations are looking primarily at state/territory agencies to lead that coordination.

The level of knowledge which reside in regional NRM organisations is high for weed biosecurity but low to moderate for Australia's high priority exotic plant pests. Mechanisms were identified to lift that level of knowledge including staff education events, inclusion in early response activities and field training.

The responses highlighted capacity issues that are specific to regional NRM organisations and jurisdictions however these were few, as most issues were common across the nation. Lack of funding was highlighted as the largest single contributor to regional NRM organisations not being more involved in plant biosecurity. Improved coordination and leadership were cited often as a major enabler for NRM organisations becoming more involved in plant biosecurity preparedness, surveillance and response. Coordination in the context of on-ground delivery but also in the development and delivery of policy and research.

Opportunities

The project has identified a series of opportunities for improving regional NRM organisations' capacity to participate in plant pests' preparedness, surveillance and response. In summary the opportunities are:

1. Improve foundational knowledge and introductory training

The development of foundational knowledge for plant biosecurity requires consistent and agreed information to be transferred.

OUTCOME – regions gain foundational knowledge at a pace and circumstance that meets the varied structures.

2. Develop regional risk assessments and planning tools

Regions commence a regional planning process with external guidance that delivers specific risk assessment and strategic planning outcomes for the regions to build into local planning.

OUTCOME – Each region has a completed risk assessment and mapping process which is incorporated into the regional planning documents.

3. Build capacity in surveillance, diagnostic and early response skills

NRM regions will need to understand the basic principles for each of these skills. Specific training will develop the confidence in personnel, so they are more willing to participate.

OUTCOME – NRM personnel are trained in basic sampling and risk assessment and have introductory awareness of the Australian biosecurity and diagnostic system.

4. Coordinate strategic projects:

Implement a range of strategies to raise the profile of NRM regions in plant biosecurity at national scale.

OUTCOME – NRM regions are more fully represented in Australia's suite of biosecurity systems and events.

5. Enable community coordination and engagement

Utilise NRM regions existing processes, well embedded skills and knowledge about community engagement and awareness programs.

OUTCOME – The foundational knowledge gained by regions will be utilised to effectively inform and educate the community.

6. Prioritise research & development

Explore opportunities to partner with organisations such as the Centre for Invasive Species Solutions (CISS) and industry bodies to co-develop projects with NRM organisations.

OUTCOME – reduce the gap in scientific information that exists with respect to the impact of plant pests and diseases on the environment.

Introduction

Regional Natural Resource Management Organisations

Australia has 54 regional natural resource management (NRM) organisations. They are a mix of government agencies and non-government organisations (NGOs) that get national, state, regional and local priorities for natural resource management delivered on the ground.

The 54 regional NRM organisations cover Australia's land, estuarine and coastal areas. Many of these organisations have been in existence since the mid-1990s. While they have different constitutions (some are established by State Governments others through relevant Community Associations legislation and one, Ocean Watch, by the seafood industry) they have all been recognised as regional NRM organisations by the Federal Government as part of the Natural Heritage Trust and its successor programs including the National Landcare Programme.

All regional NRM organisations are governed by Boards of directors that represent their regional community's NRM perspectives and priorities. Boards are appointed by State/Territory governments in South Australia, New South Wales, Victoria, and elected or appointed by the community/stakeholders in Western Australia, Tasmania, Queensland, the Northern Territory and Ocean Watch. The ACT government is the regional NRM organisation for that Territory and has appointed an advisory committee to assist the department.

Plant Biosecurity

Plant biosecurity is a set of measures which protect the economy, environment and community from the negative impacts of plant pests. The National Biosecurity Strategy (2010) defines plant pests as "living organisms that have the potential to adversely affect food, fibre, ornamental crops and stored products, as well as environmental flora and fauna. Plant pests include insects, mites, pathogens, nematodes, snails and weeds."

The National Plant Biosecurity Surveillance Strategy has identified the following enabling activities as being essential if the above aims are to be achieved:

- Recognising work across the biosecurity continuum.
- Strengthening surveillance partnerships with stakeholders.
- Conducting risk and science-based surveillance.
- Ensuring the system is well regulated.
- Having surveillance based on measurable performance indicators and economic principles.

With the reduction in agricultural extension services in some jurisdictions, a loss of plant protection expertise has resulted. While there has been growth in the numbers of private crop consultants, the nature of their roles may limit their ability to devote time to activities such as plant biosecurity education.

A Symbiotic Relationship

Australia's regional NRM organisations' established networks of land managers, local community and industry groups and individuals, provide an opportunity to address some of the National

Plant Biosecurity Surveillance Strategy enabling activities and build capacity and engagement in plant pest preparedness, surveillance and early response.

Lifting regional NRM organisations' involvement in plant pest preparedness, surveillance and early response delivers on the organisations primary objectives of protect the biodiversity and productive capacity of their regional landscapes. It also presents a financial opportunity (the Agricultural White Paper identifies an investment of \$200 million to improve biosecurity surveillance) for the organisations and an opportunity to further engage with land managers who may not be engaged through existing programs and mechanisms. This approach builds on the 'Plant Biosecurity Partnership' model, advocated by Plant Health Australia (Plant Health Australia, 2018).

Regional NRM organisations are the custodians of Regional NRM Plans. They facilitate the development of these plans and aligning investor priorities with those reflected in these community-based plans. In many plans plant pests are identified as high priority threats and accordingly attract investment to manage these threats. In other plans, plant pests are identified as a contributing factor to threatening processes of high value assets such as wetlands and productive farming country. As a result, regional NRM organisations have built a reservoir of skills, knowledge and experiences in delivering biosecurity activities.

An example of this biosecurity delivery capacity is role NRM staff have played in introducing biocontrol agents. NRM staff provide several crucial links in the chain of innovation and development of biological control agents, from conception to deployment. NRM staff:

- Provide on-ground information to identify the failure of conventional control and the need for biological control solutions.
- Collect samples of weeds and related native species in biological control development, so that tests can be undertaken to ensure native species will not be impacted.
- Have local on-ground knowledge and well-developed networks making them ideally placed to promote biological control amongst land managers who may rely on conventional control methods and who may be unaware of the full range of biological controls, or unconvinced of their efficacy.
- Provide knowledge and advice to ensure the correct biological control agents are applied because the distribution and application of biological control agents often requires specialised knowledge.
- Collect and provide much of the data on weed and pest animal distributions before and after release, as well as spread of agents.
- Provide locally tailored integrated advice on weeds and pest animals to ensure maximum value is gained from biological control methods through the use of complementary conventional techniques.

To help recognise other work of regional NRM organisations to enhance activities and partnerships, the Department of Agriculture & Water have contracted NRM Regions Australia (NRMRA) to carry out a gap analysis of regional NRM organisations plant biosecurity preparedness, surveillance and early response activities and capacity. This project will identify

both existing and potential capacity along with, the factors that block or enable this, and suggestions to achieve that potential capacity.

The department is particularly focused on the capacity of regional NRM organisations to play a role in preparedness, surveillance and early response to incursions of the national priority exotic plant pests. This project draws out that capacity in the context of regional NRM organisations' existing and potential capacity to prepare for, detect and respond to both exotic and endemic plant pests in their regions that can be translated to or replicated for the national priority exotic plant pests.

Project Objectives

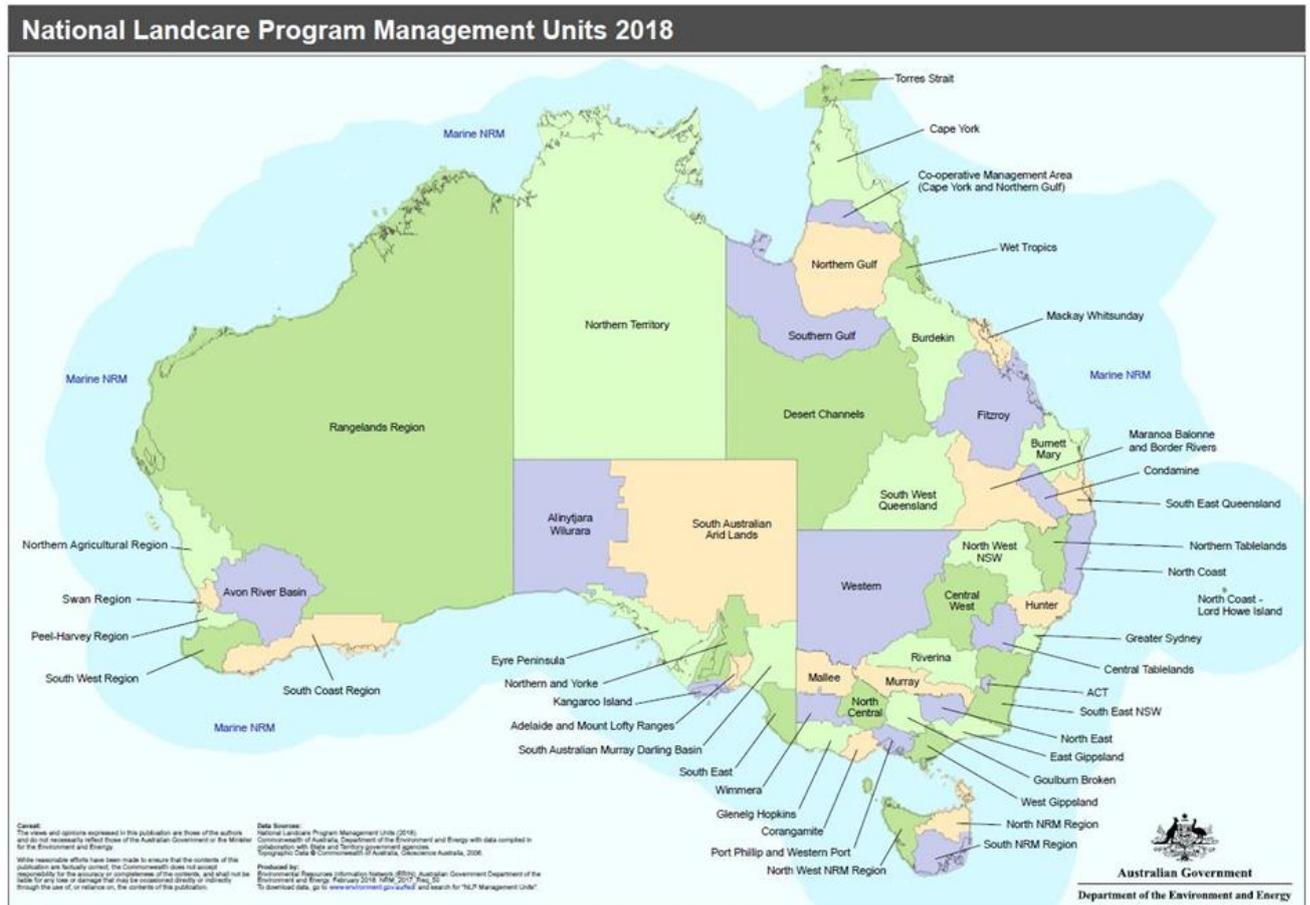
The objectives of this project include:

- identifying what plant biosecurity preparedness, surveillance and early response activities are currently being undertaken and by who within the 54 regional NRM organisations across Australia;
- identifying networks for increased engagement and opportunities for new linkages and capacity building to address identified gaps in Emergency Plant Pests (EPP) prevention, and preparedness nationally;
- build the awareness of regional NRM organisations to the opportunities (landscape integrity, investment and engagement) that exist in driving a shared responsibility approach to plant biosecurity activities;
- build regional NRM organisations staff knowledge of plant biosecurity preparedness, surveillance and early response; and
- increase department's knowledge of the existing and potential capacity of regional NRM organisations to play a critical role in enhancing Australia's plant biosecurity preparedness, surveillance and early response capacity.

The Review Process

Scope

The project area was all of Australia. Regional NRM Organisations' Boundaries are outlined in the National Landcare Program map below.



Note: South West Queensland, Condamine Alliance and Maranoa Balonne and Border Rivers management units are now managed through a single organisation, “South Queensland NRM”.

Methodology

The project was delivered through a combination of contracting external services and utilising existing capacity within NRM Regions Australia (NRMRA), the State level regional arrangements, and individual NRM Regions. The NRMRA Biosecurity Working Group will act as a project steering group.

The process was iterative to build upon each step and to verify results along the way. Steps will include:

1. Informing/engaging CEOs (or equivalents) in every region.
2. Identifying responsible staff in each region.
3. Summary fact sheet on plant health targeted to NRM Region.
4. Targeted written surveys to these staff.

5. Follow-up phone interviews.
6. State level group meetings where possible.
7. Synthesis and verification with regions.
8. Oversight by the Biosecurity Working Group.

Initial communication with the GM/CEOs of NRM Regions provided a project scope including project objectives. A request for the most appropriate person to complete the survey was made to regional NRM organisations' CEO/GM. The survey was sent to CEO/GMs for circulation to their preferred staff person.

A survey (*Attachment 1 – page 25*) was developed in consultation with the Department of Agriculture and Water Resources Plant Biosecurity team, Biosecurity Working Group and Professor Jim Cavaye of the University of Southern Queensland.

In combination with the survey, opportunities to engage at the jurisdictional scale through State meetings was utilized to generate group discussions, around opportunities to increase NRM Regions capacity pertaining to plant biosecurity preparedness, surveillance and early response at a whole of State scale.

Project Outputs

Project outputs include:

- Database of appropriate contacts in each NRM region across Australia.
- Summary fact sheet on plant health targeted to NRM Regions (*Attachment 1 – page 25*).
- Targeted survey (*Attachment 2 – page 27*).
- Compilation of information and data.
- Final report.

Expected Outcomes

Expected outcomes include:

- Increased knowledge of NRM Regions capacity to increase the level of plant biosecurity preparedness, surveillance and early response at the local and regional scale;
- More informed and engaged regional NRM organisation staff regarding preparedness, surveillance and early response opportunities;
- More informed local and regional communities about plant biosecurity;
- Information and data that can inform the development of a strategic approach to further improve plant biosecurity preparedness, surveillance and early response at a regional scale and ultimately across the nation;
- Increased funding opportunities to lift the level of plant biosecurity preparedness, surveillance and early response at the regional and local scale.

Constraints

The major constraint faced was respondents making time to complete the survey. The ability of NRM Regions to effectively engage in the project and provide requested information is competed with their need to meet end of financial year project milestones and reporting requirements.

Review Findings

The findings have been drawn from a set of written questions and matrixes aimed at identifying:

- what plant biosecurity preparedness, surveillance and early response activities are currently being undertaken by the regional NRM organisation;
- to the best knowledge of the regional NRM organisation, which stakeholder is doing what in their region;
- where regional NRM organisation are not engaged in delivery, is there an opportunity to become engaged and what is required for this to happen;
- how well are plant biosecurity preparedness, surveillance and early response coordinated in the region and how can it be improved; and
- regional NRM organisation staff knowledge of plant biosecurity preparedness, surveillance and early response for plant biosecurity and how can this be improved.

Current Activities of NRM Organisations and non-NRM Stakeholders.

Diagram 1 - Current Plant Biosecurity Preparedness, Surveillance Activities of NRMs.

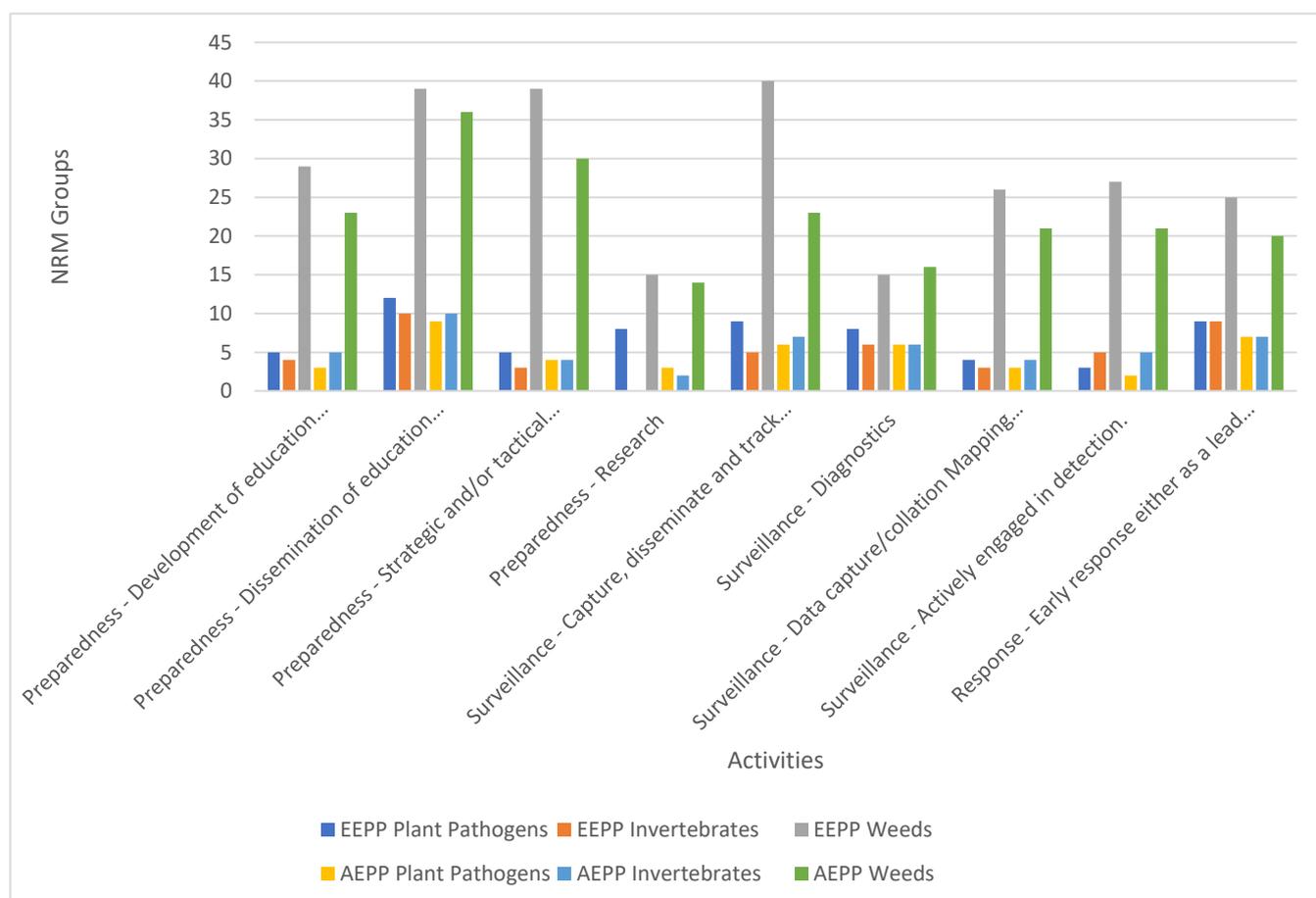


Diagram 1 indicates that 50% or more of respondents are engaged in plant biosecurity activities relating to environmental weeds. A slightly smaller percentage are engaged in plant biosecurity activities relating to agricultural weeds. This is reflective of the priority that natural resource managers in their regions place on the management of existing and potential weed incursions.

The primary pathogen that was identified as being targeted by several regional NRM organisations is phytophthora. Others may have been targeted but weren't identified.

One regional NRM organisation identified as previously having been involved in surveillance of fruit fly but are no longer involved due to funding constraints.

Dissemination of education programs ranked highest as the area in which regional NRM organisations are most engaged in. This aligns with the general ethos of regional NRM organisations who identify one of their primary responsibilities is to lift the capacity of natural resource managers through the provision of information.

Few regional organisations identified themselves as leaders of early response activities but did state that they have or do play a supporting role.

Diagram 2 - Current Involvement of Non-NRMs IN Plant Biosecurity Preparedness, Surveillance and Response Activities.

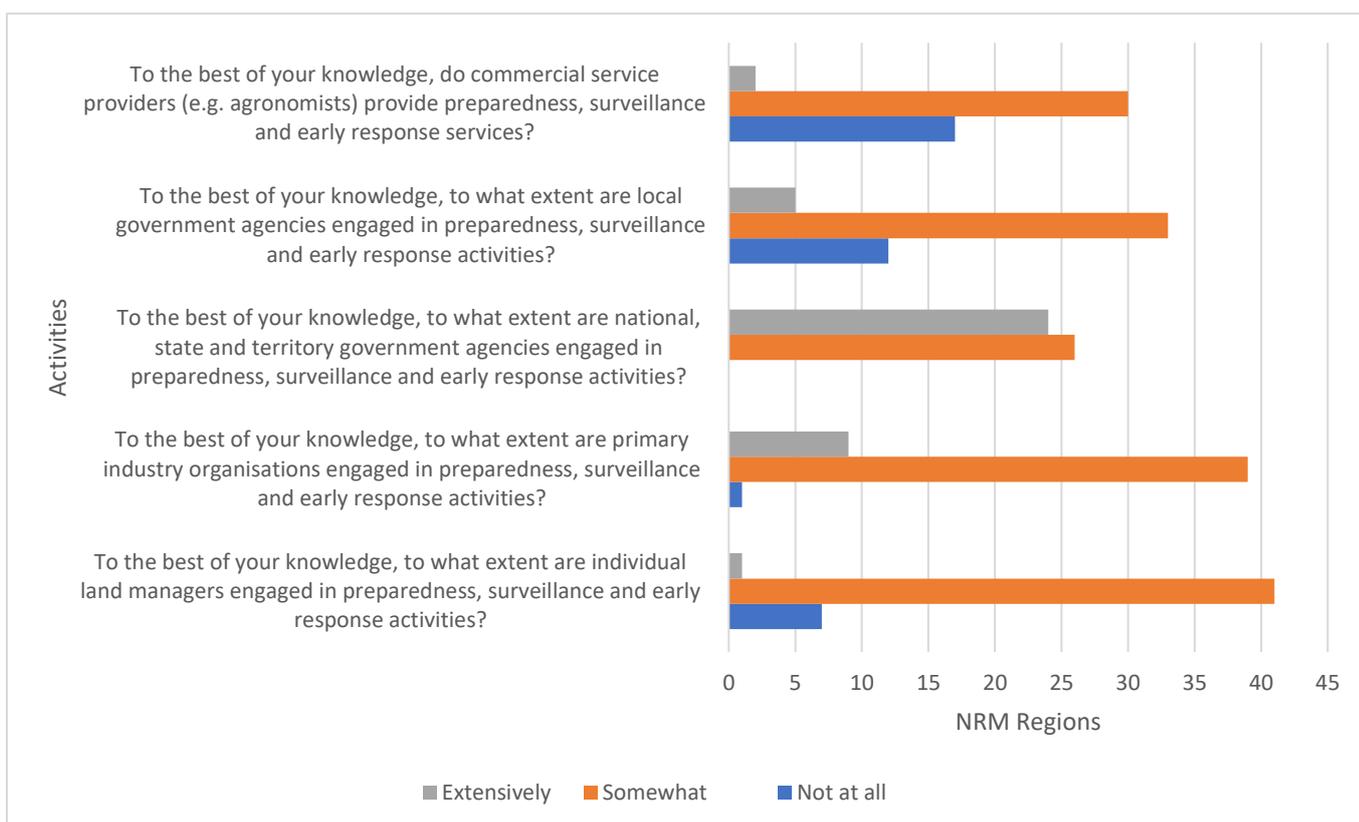
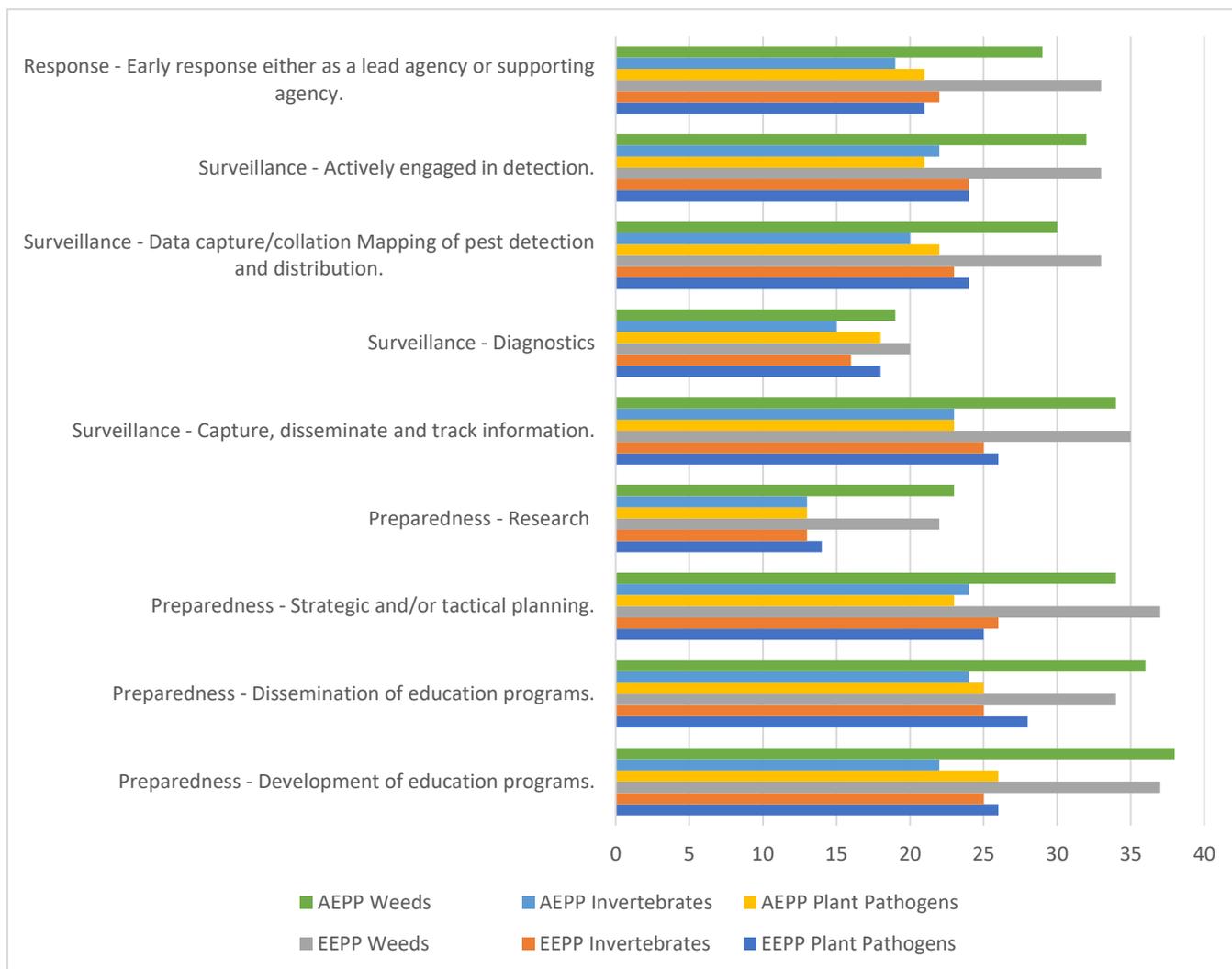


Diagram 2 indicates to the best of the knowledge of the regional NRM organisations, the five categories of service are engaged somewhat in plant biosecurity activities. The written responses indicate this engagement is primarily in the management of endemic weeds for land managers. The stakeholder who has the most extensive involvement is state governments.

Activities Regional NRM Organisations would deliver with adequate resourcing.

Diagram 3 - Activities Regional NRM Organisations would deliver with adequate resourcing.



When compared to Diagram 1, this diagram indicates the level of engagement in preparedness, surveillance and response rises significantly if adequate resources were available to regional NRM organisations. Involvement in weed activities shows only a small increase when compared to diagram 1.

There has been an equal lift in engagement across the activity categories of production and dissemination of education material, planning, capture and tracking of surveillance information and data and early response.

Other enabling factors beyond resourcing have been identified in the jurisdictional responses on pages 16-25.

Regional coordination of plant pest preparedness, surveillance and response.

Diagram 4 - Regional Coordination of – Preparedness, Surveillance and Response Activities.

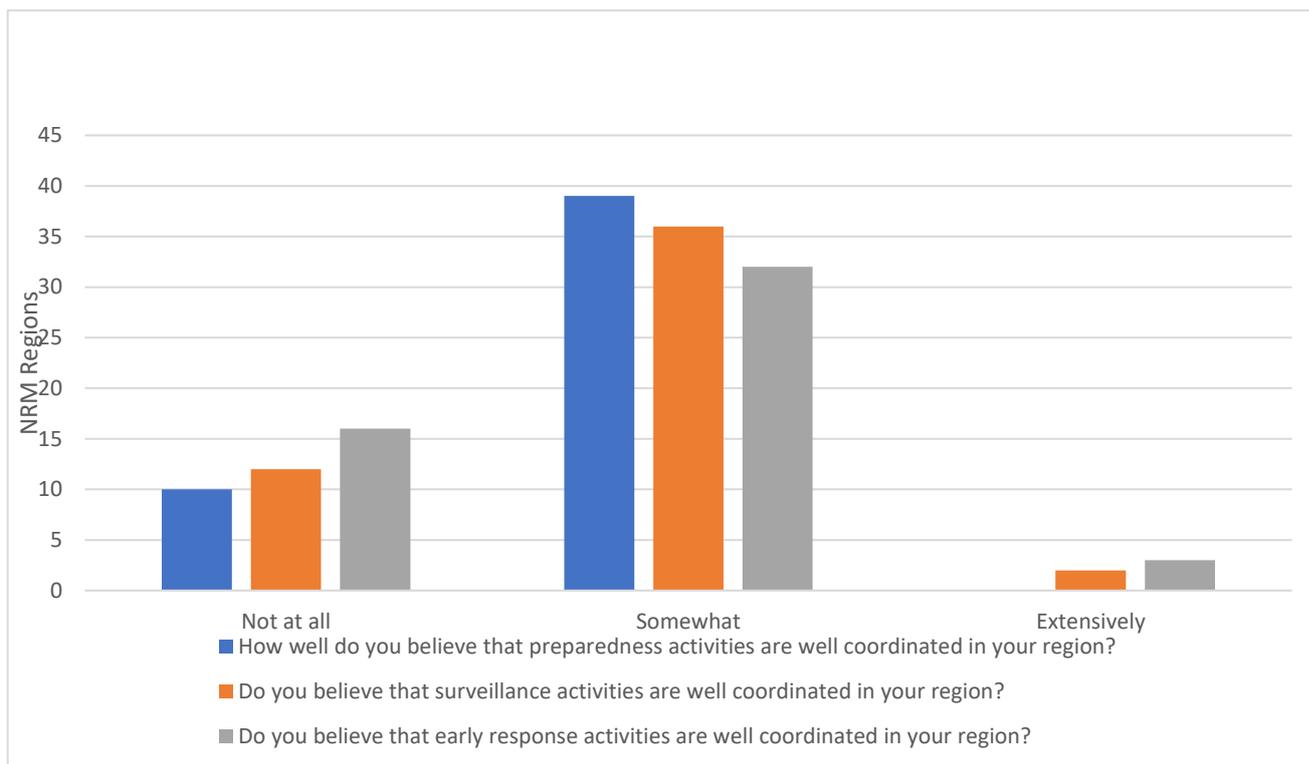


Diagram 4 indicates that there is a moderate level of regional coordination occurring in most of the regions for the areas of preparedness, surveillance and early response.

Diagram 5 – Who should take the lead role for a coordinated approach?

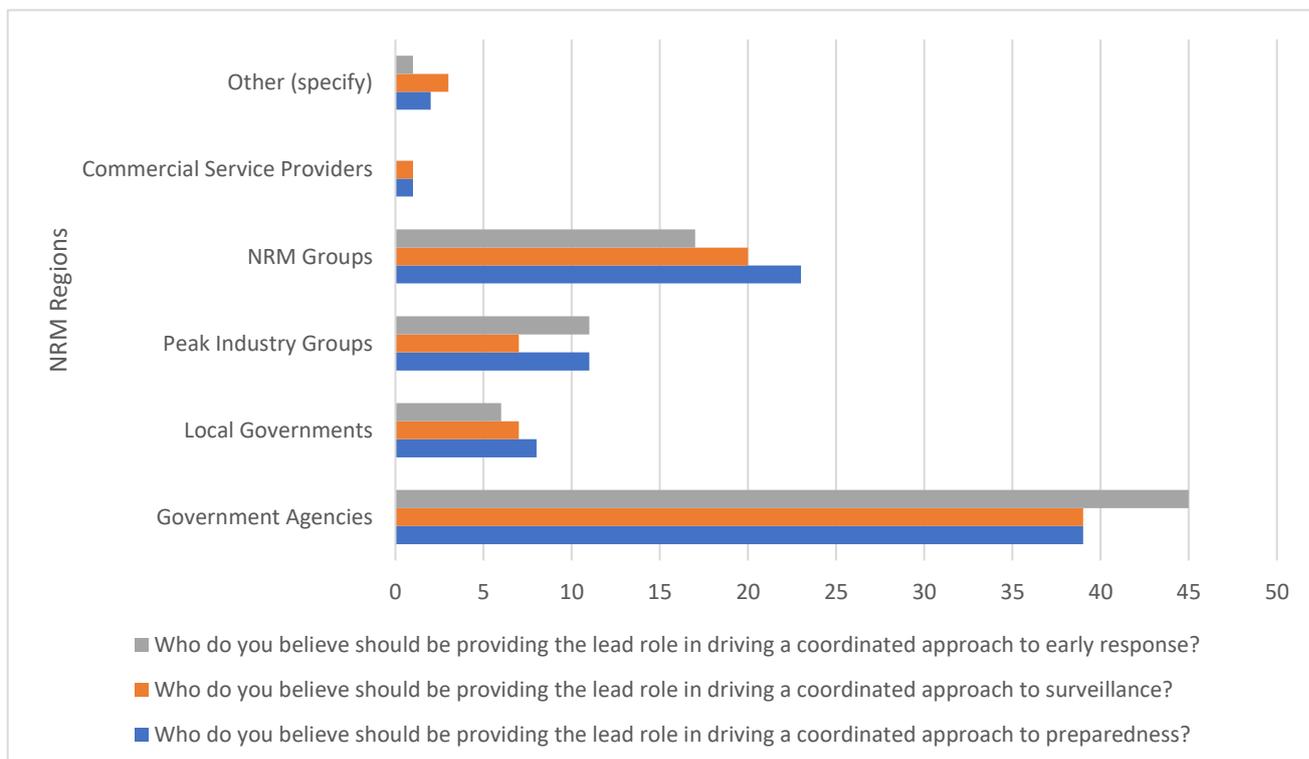


Diagram 5 identifies government agencies as the most cited stakeholder to take the lead role in driving a more coordinated approach. Nineteen regional NRM organisations identified NRM organisations as taking a lead role in preparedness.

Several respondents identified a shared leadership role rather than a single group across the stakeholder groups.

Enabling factors to improve plant pest preparedness, surveillance and early response regional NRM organisations' engagement, regional coordination and staff knowledge.

Responses to the enabling factors have been presented under jurisdictions due to the varying structures of regional NRM organisations at the jurisdictional scale influencing the different roles they play in the biosecurity area.

New South Wales

New South Wales' Local Land Services (LLS) are regionally based government agencies that deliver services in the areas of:

- sustainable agriculture extension
- biosecurity
- emergency management where agriculture and animals are impacted
- natural resource management.

Enabling factors to lift LLS involvement in plant pest biosecurity.

A summary of the NSW LLSs' responses:

- Access to existing education programs and research for dissemination.
- Consistency of approach across the state with more integrated and regional support programs.
- Contracted projects with Industry bodies such as Horticultural Australia or research providers such as CSIRO.
- Maintenance of organisational knowledge and experience in plant industries.
- More research and science-based field activities.
- Closer alignment, co-ordination and integration with Department of Primary Industries' activities.
- Increased resources including staff with expertise, and staff time.
- Coordinated engagement with landholders (particularly horticultural) who have higher priority issues (in regard to potential threats, not actual or increased).
- More workable confidentiality policies that allow access to information and data.

Enabling factors to improve coordination in plant pest biosecurity.

A summary of the NSW LLSs' responses:

- Agreed definition of roles and responsibilities.
- Planned coordinated strategy across borders.
- Finalisation and adoption of the MOU between NSW DPI and LLS – which is currently being developed.
- Use examples from Animal Biosecurity structure to clarify Plant Biosecurity structure in LLS.

Strategic Planning approaches.

A summary of the NSW LLSs' responses:

- LLS lists of existing or threatening priority plant pests only exist for weeds.
- Integrated LLS plant pest plans only exist for weeds. LLS rely on NSW DPI to develop these plans.
- LLSs are involved in the delivery of stakeholder plans including:
 - Weeds Action Plan (WAP)
 - Regional Strategic Weed Management Plan
 - Community Engagement Plan
 - Individual Plant/Pests Management Plans (weeds)

LLS staff knowledge of priority plant pests and how this can be improved.

Respondents generally reported a low to moderate level of staff knowledge of the National Priority Plant Pest.

Suggestions on how to increase staff knowledge included:

- Sharing of information material such as publications.
- Delivery of training activities to lift practical experience.
- More exposure of staff to incursion sites to give them firsthand understanding and knowledge of exotic pests.

Queensland

Eleven of Queensland's 12 regional NRM organisations are not for profit non-government entities. Torres Strait Regional Authority is established under a Commonwealth Act. The organisations don't have any regulatory or statutory role although they are referred to in some State Acts. They work to sustain, protect and improve the state's natural resources.

NRM Regions Queensland supports the state's regional NRM organisations to deliver sustainability outcomes by coordinating statewide programs, providing mentoring and leadership, advocacy for improved investment in natural resource management, and identifying areas for training and improvement.

Enabling factors to lift Queensland NRM organisations' involvement in plant pest biosecurity.

A summary of the Qld NRM organisations' responses:

- Formal support from stakeholder organisations in the region to ensure on-going commitments to pest biosecurity.
- Connection to the knowledge experts to assist; systems support and assistance with establishing citizen's science applications.
- Having a clear role that is defined by policy.
- Biosecurity Officers permanently based in the NRM region with some emphasis on some experience and longevity.
- Access to consistent and flexible funding to allow changes in priority pest plants to be managed, and to allow a rapid response to new biosecurity threats.

- Simpler data capture needs and supporting tools, recognition of efforts beyond state and local government activities.
- Single free access database to be developed to capture field data.
- Mechanisms to facilitate continued adoption of new technologies.
- Lack of access to areas where incursions may occur.
- Removal of duplication of authority and entry powers with respect to surveillance activities.
- Increased authority – Queensland NRM officers are non-statutory and lack necessary authority.

Enabling factors to improve coordination in plant pest biosecurity.

A summary of the Qld NRM organisations' responses:

- Improved cross regional/jurisdiction coordination.
- A more collaborative and collegiate relationship with State, federal and local governments.
- Provide a more holistic view of biosecurity across our region for the State and Local Government bodies who take a lead role in the Biosecurity space in QLD.
- Increased clarity and agreement around roles and responsibilities.
- There needs to be greater support, with formal commitments, from the organisations involved in all aspects of pest plant biosecurity. This commitment needs to be established at the organisational level to ensure pest management staff within organisations have on-going support.
- There needs to be more cohesive planning between all groups to deal with plant and pest animals.

Strategic Planning approaches.

A summary of the Qld NRM organisations' responses:

- Most regions have a list or access to a list of priority plant pest, for example the Burdekin Dry Tropics NRM Regional Pest Management Strategy (under review) indicates an extensive list of priority and alert plant pests for the region.
- Majority of regional bodies are involved in implementing Local Government pest plans whilst several regions use Regional Organisation of Councils' (group of Local Governments) pest plans.
- Only one region has a pest plant preparedness, surveillance and early response plan and that is for an endemic weed (Prickly Acacia).

Queensland NRM organisations' staff knowledge of priority plant pests and how this can be improved.

Respondents generally reported a moderate level of staff knowledge of the National Priority Plant Pests.

Suggestions on how to increase staff knowledge included:

- Identify a pathway that that allows NRM staff to be educated and in turn share this knowledge with community.

- Funding for training and the provision of regionally relevant communications materials.
- Including the surveillance for and recording of priority pests into all project data collection.
- Utilising existing relationships with key partners (e.g. state agencies, local governments etc.)
- Awareness raising at staff meetings or field days with poster displays or presentations.
- Establish a state and national network so staff know where to go for information and advice if an incursion occurs.

South Australia

South Australian regional organisations are government agencies with a community-based Boards. Each regional Natural Resources Management (NRM) Board develops its own Regional NRM Plan designed to meet the needs of the local regions and contribute to state level planning. They are also responsible for developing, managing and implementing local programs and promoting community engagement and education. The South Australian regional NRM arrangements are under review with a new structure to be established by the end of 2019.

Enabling factors to lift South Australian NRM organisations' involvement in plant pest biosecurity.

A summary of the SA NRM organisations' responses:

- Increased funding and staff resources to maintain and increase skills and expertise.
- Dedicated biosecurity staff in regional organisations.
- Biosecurity activities to be incorporated into the regional NRM Plan to enable resources to be allocated to the activity/ies.
- Educational resources developed – electronic and hard copy
- Better/more access to science, expertise and latest technologies.
- Improved mapping and data management / sharing capability available.
- Promote the importance of plant pest biosecurity to increase the relevance of the issue and deal with competing priorities.
- Funding models to take in account the distance and logistics/logistics costs in a very large, little populated region.
- SA NRM reform and current legislative and governance changes in SA needs to be established soon.

Enabling factors to improve coordination in plant pest biosecurity.

A summary of the SA NRM organisations' responses follows:

- The proposed 5-year action plans for pest plants and animals under the Landscapes SA Bill, currently progressing through Parliament, will support planning and action if adequately resourced.
- Programs that encouraged collaboration between local government, NRM organisations and allied industries such as transport organisations would stimulate activity at an urban scale that would have statewide benefits.
- A more coordinated and strategic approach from national and state bodies.
- Funding to support long term planning at the regional scale for pest plant management.
- Roles and responsibilities better defined.

- Federal funding for coordination delivery.
- Coordination and role clarity would need to be clearly defined.

Strategic Planning approaches.

A summary of the SA NRM organisations' responses:

- Most regions have lists of priority weeds but not all plant pests.
- Each region provided Primary Industries and Regions SA with top 10 biosecurity issues.
- Majority of regions have integrated pest plans but in reference to weeds only.
- The Coastal team have a series of action plans for particular geographic areas within the region that guide on-ground works.
- Other stakeholder plant pest plans accessed by NRM organisations include:
 - State wide declarations, Weeds of National Significance plans, Local Government roadside vegetation plans.
 - Local Government weed control plans.

South Australian NRM organisations' staff knowledge of priority plant pests and how this can be improved.

Respondents generally reported the level of staff knowledge good for weeds, low to moderate for National Priority Plant Pests.

Suggestions on how to increase staff knowledge included:

- Involvement in scenario planning and training in biosecurity surveillance, monitoring and response.
- Educational workshops, training in awareness, provision of strategies and plans for pest plant paths of spread.
- Provide specific training through authorities responsible for the administration at state and commonwealth levels.
- Training, online research, factsheets, speaking with counterparts in other regions or states, weed conference(s).

Western Australia

Western Australian regional NRM organisations consists of seven regional NRM groups which are not-for-profit organisations, primarily funded by the Australian Government to deliver the National Landcare Programme.

Each regional group has developed a regional strategy and investment plan that address significant NRM issues within their region. The plans incorporate environmental, social, and economic factors.

NRM WA (former Regional Leaders Group) is an unincorporated body which comprises of the chairs of the seven regional NRM groups in Western Australia.

Enabling factors to lift Western Australian NRM organisations' involvement in plant pest biosecurity.

A summary of the WA NRM organisations' responses:

- More funding for stakeholders.
- A shipping container levy will be introduced which will generate resources. This will mostly be for pre-border and border control, but some money may also extend to post border control.
- Investment, time and agreement to build strategic capacity and confidence in a new delivery framework/structure e.g. WA State Investment framework for phytophthora dieback.
- Clarity and participation in agreed areas of responsibility.
- Access to specialised equipment NRM organisation staff teams would require in their early response roles.
- Direct inclusion in biosecurity strategies and improved inclusion from both state and federal biosecurity agencies.
- Commitment from government to cross-tenure management.
- Address the issue of a range of established biosecurity groups 'locking' out NRM groups in preparedness, surveillance and early response activities.
- Capability would need to be addressed through training and technical support.
- Strike a balance between research and implementation.
- Consistency in the way plant biosecurity stakeholders work and messaging to industry and community around expectations and requirements.

Enabling factors to improve coordination in plant pest biosecurity.

A summary of the WA NRM organisations' responses:

- Acknowledge that some regional bodies see their role as supporting other biosecurity groups rather than doing it themselves.
- Greater State Agriculture department participation in surveillance.
- Increased coordination of efforts to manage environmental plant diseases.
- Establish a collaborative response from key state-based agencies.
- Agreed role and responsibilities identified including leading agencies.
- A clearer policy from state government that articulates that they are responsible for coordination, preparedness, and surveillance.

Strategic Planning approaches.

A summary of the WA NRM organisations' responses:

- Majority of NRM organisations don't have a priority list but do refer to other stakeholder lists.
- South Coast NRM refer to South Coast Regional Invasive Species Framework for their list.
- All but one region doesn't have plant pest plans.
- South Coast NRM is the only NRM organisation to have an integrated plant pest plan.
- Other stakeholder plans include:
 - Local Government Pest Plans
 - Western Australia State Dieback Investment Framework

- South Coast Invasive Species Strategy
- Weed Gorse (*Ulex europaeus* L.) Management Plan.

Western Australian NRM organisations’ staff knowledge of priority plant pests and how this can be improved.

Respondents generally reported moderate level of staff knowledge for National Priority Plant Pests.

Suggestions on how to increase staff knowledge included:

- Training and liaising with key agencies and stakeholders.
- Development and dissemination of communications materials.
- Resources to enable a base-level of readiness.
- Alerts on potential new incursions via email alerts, facts sheets etc would be helpful.
- Need more than a one off or annual awareness exercise to maintain a consistent level of knowledge.

A state workshop of regional NRM organisation staff was held which expanded the discussion of needs from a regional scale to state scale. The outcomes of this workshop are included in *Attachment 3 – page 34*.

Tasmania

There are three Tasmanian regional NRM organisations. These are independent not-for-profit community organisations governed by a Board but the organisations are recognised in Tasmanian Government Legislation. Of the 54 regional NRM organisations, these three organisations are in the bottom 5% of funding recipients.

Enabling factors to lift Tasmanian NRM organisations’ involvement in plant pest biosecurity.

A summary of the Tasmanian NRM organisations’ responses:

- Increased funding leading to increased staffing is the major enabler.
- Develop and disseminate data and shared information on best practices relating to threats.
- Need to strengthen plant biosecurity stakeholder partnerships.

Enabling factors to improve coordination in plant pest biosecurity.

A summary of the Tasmanian NRM organisations’ responses:

- Development of a biosecurity strategy for Tasmania lead by Biosecurity Tasmania.

Strategic Planning approaches.

A summary of the Tasmanian NRM organisations’ responses:

- None of the NRM organisations have dedicated plant pest priority lists nor integrated strategies.
- Some NRM organisations support the delivery of other stakeholder pest plans.
- Regional weed strategies and state strategy are being developed by Biosecurity Tasmania.

Tasmanian NRM organisations' staff knowledge of priority plant pests and how this can be improved

Respondents generally reported a moderate to good level of staff knowledge for National Priority Plant Pests.

Suggestions on how to increase staff knowledge included:

- Development and dissemination of educational material.
- Knowledge sharing with skilled groups.
- Development and delivery of training events.

Victoria

Victoria has 10 Catchment Management Authorities (CMAs). The CMAs are statutory organisations which operate under Victorian Government Act. They have a regulatory role in flood plain management. The CMAs work to achieve healthy, sustainable and productive land, water and biodiversity.

Enabling factors to lift Victorian CMAs' involvement in plant pest biosecurity.

A summary of the Victorian CMAs' responses:

- The creation of a pest plant and animal facilitator role within each CMA.
- Building organisational capacity (awareness, knowledge, skills) etc. in weed identification, management, priorities, responsibilities.
- Program funding that provided confidence to develop/recruit capabilities.
- Access to technology – data capture via smart phones.
- Recognition that NRM Bodies have an active role to play in biosecurity which utilise CMA networks and skills.
- Increase public awareness and CMA internal knowledge for new and emerging plant pest issues.

Enabling factors to improve coordination in plant pest biosecurity.

A summary of the Victorian CMAs' responses:

- Avoid potential conflict with existing agencies in the biosecurity space by establishing clear demarcation of duties, roles and responsibilities.
- Re-establish links between all relevant regional stakeholders/partners (i.e. federal, state, regional, local) across an extensive landscape.
- Establish regional pest plant and animal strategy to guide prioritisation of investment.
- Establish regional coordinating committees run by State agencies.

Strategic Planning approaches.

A summary of the Victorian CMAs responses:

- Three CMAs have priority plant pest lists.
- Most of the CMAs utilise state government advisory lists and associated regional declarations under the Catchment and Land Protection Act (CaLP Act).

- One CMA have a draft biosecurity, invasive plant and animal strategy (2019-2025), which has guidelines to control, eradication, with some information preparedness etc. Note this strategy is being updated and revised in-house due to lack of sufficient resources.
- Most CMAs have out dated plans which haven't been reviewed due to funding constraints.

Victorian CMAs' staff knowledge of priority plant pests and how this can be improved.

Respondents generally reported a moderate level of staff knowledge for National Priority Plant Pests.

Suggestions on how to increase staff knowledge included:

- Working in partnership with knowledge broker organisations and researchers including on-ground training in identification.
- Regular updates, training and awareness workshops with periodic expert presenters.
- Utilise resources used in other states/regions to develop communication tools, present information at staff meetings on National PPPS and internal news reminders regarding critical preparation and surveillance timing.
- Train relevant staff in biosecurity process and surveillance to practice when staff are in the field.

Australian Capital Territory

Australian Capital Territory Natural Resource Management (ACT NRM) is hosted in the ACT Government Environment, Planning and Sustainable Development Directorate.

ACT NRM works together with delivery partners, volunteers, the broader ACT and regional community and other stakeholders to identify investment priorities, broker partnerships, share knowledge, and deliver programs. ACT NRM investment is centred around three strategic investment themes focusing on biodiversity, sustainable agriculture and Aboriginal NRM.

Enabling factors to lift ACT NRM's involvement in plant pest biosecurity.

- Provision of enhanced reciprocal response arrangements with NSW.
- Formalised arrangements for provision of diagnostic services by other jurisdictions/providers.
- ACT has good passive engagement by the community, particularly for weeds, through citizen science platforms such as the Canberra Nature Map. There is scope for improving community engagement in active surveillance by specific groups for specific areas/species (e.g. bushwalking clubs, native plant society, bird groups, rural landholders). The biggest gaps in activity and capacity relate to plant pathogens and invertebrates across all land tenures.

Enabling factors to improve coordination in plant pest biosecurity.

- More capacity and capability for ACT NRM.
- Improved engagement with land managers, particularly on plant pathogens and invertebrates, across all land tenures.

Strategic Planning approaches.

ACT NRM has a list of high priority weeds – some are subject to eradication and others to surveillance. Note that not all species listed are currently present in the ACT (e.g. Orange Hawkweed).

An operational plan for weeds, exists. Preparedness, surveillance and response components are largely documented elsewhere and are not publicly available. For plant pathogens and invertebrates, ACT utilises national plans (such as PlantPlan). There is also the ACT Biosecurity Strategy 2016-2026, ACT Biosecurity Emergency Response Plan 2013 and ACT Weeds Strategy 2009-2019.

ACT CMAs' staff knowledge of priority plant pests and how this can be improved.

ACT NRM staff knowledge is between 'not at all' (most) and 'moderate' (a few key ACT Government staff). To increase this knowledge, it was suggested that targeted education programs relating to selected plant pests that are either already present (e.g. Elm Leaf Beetle) or would be high risk if they entered the ACT (e.g. *Xylella fastidiosa*) be developed and delivered.

Discussion

NRM organisations around Australia are facing unique challenges with funding sustainability while concurrently considering future opportunities and responsibilities. Plant biosecurity is emerging as an increasingly likely new role due to the synergies that exist between the knowledge base within NRM organisations and the need for plant biosecurity to expand its community engagement reach. The feedback gathered through the recent regional survey paints a positive picture about interest from regions in this role and identifies some key areas where NRM organisations are well placed to contribute to plant biosecurity. Most notably the opportunity exists for an effective foundation learning process that enables regions to participate, build capacity and coordinate community engagement.

The survey findings specifically support the hypothesis that regional NRM organisations are well placed to increase their involvement in the areas of plant pest preparedness, surveillance and early response. Targeting environmental plant pests through the development and dissemination of educational material, early response information and planning processes in general means NRM organisations are staying true to their knowledge base. It is well understood that the ability to build community capacity aligns closely with the skills and knowledge within NRM organisations.

Synergies aside, a key reason the NRM organisations have identified a desire to increase their involvement in plant biosecurity, is that it aligns with their mission of working with natural resource managers to appropriately protect and enhance the sustainability of Australia's natural resources. This may be due in part to the heavy emphasis on weed management in the responses which is reflective of regional NRM plan priorities where weeds are considered one of the major threatening processes to regional landscapes. The knowledge of some respondents about plant pests beyond weeds was limited however this creates an opportunity to grow awareness and educate NRM staff about the definition and scope of plant biosecurity.

Logically the existing level of participation in plant pests' preparedness, surveillance and early response varied across jurisdictions and within jurisdictions relative to the structure and resources available within organisations. Discussions with some NRM organisation staff revealed that whilst the staff believed they only played a minor supportive role; on reflection it is an important role in plant biosecurity. An example of this is with Terrain and their role in the early response to the Panama Disease incursion in their region. Terrain was able to contribute their significant knowledge on pig (a major vector for Panama Disease) populations and dynamics as well as control mechanisms. Vector control was cited as a major role some NRM organisations identified as a contributing activity they provide in plant pest incursion response.

Competing priorities for the participation of land managers and community in plant biosecurity activities was cited as a major challenge in regions. One way to overcome this is to integrate some foundational information about plant biosecurity into the regular activities undertaken by NRM organisations, during on ground projects and field days. The other way is to clarify roles and responsibilities and undertake regional prioritisation processes. In some jurisdictions, Landcare Groups were identified as one mechanism to lift the priority of plant biosecurity. However, to ensure that NRM groups such as Landcare are well prepared for working within the more established biosecurity systems that exist in many jurisdictions, it would be beneficial to

have regions trained in how the systems operate and gain experience in surveillance and response situations.

The survey responses also identified that most respondents who are involved in plant biosecurity are dealing with endemic plant pests or established pests in nearby regions or jurisdictions. The capacity that regional NRM organisations have established for endemic pests is considered to be transferable to exotic pests with appropriate training and resourcing. The existing regional NRM planning frameworks provide an ideal mechanism to lift the strategic importance of having effective exotic plant pest preparedness, surveillance and early response embedded in the organisational work plan. There is an opportunity for strategic collaboration to create a shift in the way NRM organisations account for and report on this activity and this is achievable but will require changes to planning goals.

The findings clearly identify resourcing as both a perceived and real barrier to increased involvement in all jurisdictions. Strategic discussion at a jurisdictional and preferably national scale to gain agreement on the roles and responsibilities of the various stakeholders in plant pest preparedness, surveillance and response, needs to be a priority to gain greater clarity. All jurisdictions identified this as a major need and could be progressed as a relatively straightforward activity with the support of NRMRA. It would also help avoid potential conflict with existing agencies in the biosecurity space by establishing good understanding of the duties, roles and responsibilities.

Respondents also identified that there was scope for leadership and coordination in re-establishing links between all relevant regional stakeholders/partners (i.e. federal, state, regional, local) often across extensive landscapes. As outlined earlier, NRM organisations are well placed to coordinate community-based expertise and knowledge and link this knowledge with the formal biosecurity systems that exist in most states. During a response, controllers are often seeking genuine community input and local knowledge so these skills and knowledge should not be underestimated.

With many respondents identifying preparedness and more specifically development and dissemination of information as an area to take a lead on, it's vital that foundational knowledge and regionally specific planning processes are prioritised. The development of specific information about the key risks and threats in regions is an achievable activity both in terms of resourcing and knowledge. Regional NRM organisations taking on this responsibility would however require some form of jurisdictional discussions to initiate the process. The agreement to undertake this project should be tied to state planning frameworks and biosecurity systems. The capturing of ongoing data through utilising existing or developing citizen science platforms featured highly in the responses and this points to another achievable goal.

Whilst funding shouldn't be a bartering point for increasing regional NRM organisations' involvement in plant pest biosecurity, recognition needs to be made that the existing capacity that could have been made available for plant biosecurity in many NRM organisations is declining. The capacity within several NRM organisations has reduced to such a level that participation in strategic discussions will be limited. With this in mind funding regional NRM organisations to effectively participate in jurisdictional discussions needs to be considered as part of a suite of opportunities. Possible solutions to this include the linkages that the advent of the Chief Environmental Biosecurity Officer (CEBO) brings. Having the NRMRA engaging regularly

with the CEBO will contribute to lifting the profile of NRM regions with the more mature plant and animal biosecurity systems.

Even with the positive interest and obvious synergies for better engagement of NRM regions with plant biosecurity roles, it is duly acknowledged that there is a need to achieve good foundational knowledge of plant biosecurity with NRM personnel, including those with volunteer frameworks if applicable. Responses revealed that much of the current knowledge exists in endemic plant pests. Staff knowledge of the listed National Exotic Priority Plant Pests priority species is low to non-existent. Educating NRM personnel would create a pathway to increasing the awareness of communities to these threats. This is a network of knowledge and awareness which plant biosecurity in Australia would greatly benefit from.

Conclusion

The level of participation by regional NRM organisations, with 51 of the 54 organisations participating in the surveys and group discussions, reflects the importance they place on the issue of plant biosecurity. Lifting the capacity of regional NRM organisations to have a greater role in plant pest preparedness, surveillance and early response will help to keep Australia free of damaging exotic plant pests that occur in other parts of the world.

This project has significantly contributed to achieving the National Plant Biosecurity Surveillance Strategy objectives of ‘recognising work across the biosecurity continuum’ and ‘strengthening surveillance partnerships with stakeholders’. The findings indicate that there is a strong sense of shared responsibility residing with regional NRM organisations. The project provides a pathway to deliver a regionally effective plant biosecurity framework which would provide commitment by stakeholders; clear and collaborative approach; defined stewardship by individual landholders; influence; repository of local knowledge; local resourcing; effective information dissemination; targeted training; and effective conduit to/from community.

The high level of regional NRM organisations’ participation has resulted in the project outputs to be delivered.

Project outputs:

- Database of appropriate contacts in each NRM region across Australia.
- Summary fact sheet on plant health targeted to NRM Regions (*Attachment 1 – page 34*).
- Targeted survey (*Attachment 2 – page 36*).
- Compilation of information and data.
- Final report.

Through the participation of the regional NRM organisations, the project outcomes of increasing knowledge of capacity opportunities, informed and engaged staff and the collection of data and information to inform a strategic approach to plant biosecurity, has been achieved. The identification of opportunities generated by the data and implementation of these opportunities, will result in the project outcomes associated with lifting community awareness and increasing NRM organisations’ biosecurity dedicated resources, being realised.

Project outcomes:

- Increased knowledge of NRM Regions capacity to increase the level of plant biosecurity preparedness, surveillance and early response at the local and regional scale;
- More informed and engaged regional NRM organisation staff regarding preparedness, surveillance and early response opportunities;
- More informed local and regional communities about plant biosecurity;
- Information and data that can inform the development of a strategic approach to further improve plant biosecurity preparedness, surveillance and early response at a regional scale and ultimately across the nation;

- Increased funding opportunities to lift the level of plant biosecurity preparedness, surveillance and early response at the regional and local scale.

Opportunities

The opportunities or strategies for NRM regions to build capacity in plant biosecurity are outlined in this section. The extension of plant biosecurity knowledge and capacity building should be implemented in a staged process. This will allow regions to build up to a similar knowledge and confidence level throughout the sector;

1. Improve foundational knowledge and introductory training

The development of foundational knowledge for plant biosecurity requires consistent and agreed information to be transferred. This process should consist of;

- Introductory biosecurity awareness and emergency response training to be provided for each NRM region. The course should be developed with principles accessed from Plant Health Australia, Animal Health Australia and Environmental Biosecurity. NRM regions should contribute to the development of the course.
- Facilitated with support from the NRMRA and Dept of Ag and Water.

OUTCOME – regions gain foundational knowledge at a pace and circumstance that meets the varied structures.

2. Develop regional risk assessments and planning tools

Regions commence a regional planning process with external guidance that delivers specific risk assessment and strategic planning outcomes for the regions to build into local planning.

- Regions undertake risk assessment process in regional clusters or at the state level.
- External guidance provided and some liaison with jurisdictional governments required with focus on national exotic plant pest species awareness.
- Incorporate plant biosecurity risk assessment and prioritisation principles into regional planning.

OUTCOME – Each region has a completed risk assessment and mapping process which is incorporated into the regional planning documents.

3. Build capacity in surveillance, diagnostic and early response skills

NRM regions will need to understand the basic principles for each of these skills. Specific training will develop the confidence in personnel, so they are more willing to participate.

- Conduct plant biosecurity exercises for regions in regional clusters or at the state level.
- Facilitated with support from NRMRA and Dept AG & Water and delivered by external sources.

OUTCOME – NRM personnel are trained in basic sampling and risk assessment and have introductory awareness of the Australian biosecurity and diagnostic system.

4. Coordinate strategic projects:

Implement a range of strategies to raise the profile of NRM regions in plant biosecurity at national scale;

- Biosecurity related outcomes included in funding goals for NRM organisations.
- NRMRA to facilitate discussions with the Chief Environmental Biosecurity Officer, Chief Plant Protection Officer and appropriate committee processes.
- NRM regions aim to increase representation at Biosecurity Roundtables events.
- Consider the development of state by state regional plant biosecurity forums to gather issues to progress to national forums.

OUTCOME – NRM regions are more fully represented in Australia’s suite of biosecurity systems and events.

5. Enable community coordination and engagement;

NRM regions have existing processes, well embedded skills and knowledge about community engagement and awareness programs. Enhancing these with plant biosecurity knowledge will enable regions to;

- Develop passive community engagement programs through citizen science platforms.
- Develop education and awareness material in conjunction with state jurisdictions that NRM regions can disseminate with communities.
- Develop regional programs to target plant pathogens and invertebrates across all land tenures.
- Consider replicating the Regional Landcare Partnerships Program model for the Regional Landcare Facilitators by adopting Regional Biosecurity Liaison Officers.

OUTCOME – The foundational knowledge gained by regions will be utilised to effectively inform and educate the community.

6. Prioritise research & development

Explore opportunities to partner with organisations such as the Centre for Invasive Species Solutions (CISS) and industry bodies to co-develop projects with NRM organisations;

- Develop a pilot research project that investigates the value created from the partnerships NRM organisations and the community play in plant biosecurity responses.
- Develop a research project pertaining to exotic pest plant incursions that has had or is likely to have a landscape wide impact to assess the environmental impact of such incursions.

OUTCOME – reduce the gap in scientific information that exists with respect to the impact of plant pests and diseases on the environment.

References

McLeod, R. (2018) Annual Costs of Weeds in Australia

Plant Health Australia, (2010) National Biosecurity Strategy

Plant Health Australia, (2018) The National Plant Biosecurity Status Report, 2017.

Savary, S, Ficke, A, Aubertot, J-N and Hollier, C (2010). Crop losses' due to disease and their implications for global food production losses and food security.

Attachments

Attachment 1. Summary fact sheet on plant health targeted to NRM Regions.



A GAP ANALYSIS OF NRM REGIONS PLANT BIOSECURITY PREPAREDNESS AND SURVEILLANCE CAPACITY PROJECT

FACT SHEET

Purpose

To help achieve the enabling activities of recognizing existing works and enhancing partnerships, the Department of Agriculture and Water have contracted NRM Regions Australia (NRMRA) to carry out a gap analysis of Regional NRM Bodies plant biosecurity preparedness and surveillance capacity. This project will focus on identifying both existing and potential capacity along with blocking and enabling factors to fulfil that potential capacity.

Plant biosecurity is a set of measures which protect the economy, environment and community from the negative impacts of plant pests. The National Biosecurity Strategy (2010) defines plant pests as "living organisms that have the potential to adversely affect food, fibre, ornamental crops and stored products, as well as environmental flora and fauna. Plant pests include insects, mites, pathogens, nematodes, snails and weeds."

The National Plant Biosecurity Surveillance Strategy has identified the following enabling activities as being essential if the above aims are to be achieved:

- Recognising work across the biosecurity continuum.
- Strengthening surveillance partnerships with stakeholders.
- Conducting risk and science-based surveillance.
- Ensuring the system is well regulated.
- Having surveillance based on measurable performance indicators and economic principles.

With the reduction in agricultural extension services in some jurisdictions, a loss of plant protection expertise has resulted. While there has been growth in the numbers of private crop consultants, the nature of their roles may limit their ability to devote time to activities such as plant biosecurity education.

Lifting Regional NRM Bodies involvement in plant pest preparedness and surveillance presents both a financial opportunity (*the Agricultural White Paper identifies an investment of \$200 million to improve biosecurity surveillance*) for the Bodies and an opportunity to further engage with land managers who may not be engaged through existing programs and mechanisms. This approach builds on the 'Plant Biosecurity Partnership' model, advocated by Plant Health Australia (Plant Health Australia, 2018).

To help recognise existing work of Regional Bodies and enhance activities and partnerships, the Department of Agriculture and Water have contracted NRM Regions Australia (NRMRA) to carry out a gap analysis of Regional NRM Bodies plant biosecurity preparedness and surveillance activities and capacity. This project will identify both existing and potential capacity along, the factors that block or enable this, and suggestions to achieve that potential capacity.

Plant
Biosecurity



The objectives of this project include:

- identifying what plant biosecurity preparedness and surveillance activities are currently being undertaken and by who within the 54 NRM regions across Australia;
- identifying networks for increased engagement and opportunities for new linkages and capacity building to address identified gaps in Emergency Plant Pests (EPP) prevention and preparedness nationally;
- build the awareness of Regional NRM Bodies to the opportunities (investment and engagement) that exist in driving a shared responsibility approach to plant biosecurity activities;
- build Regional NRM Bodies staff knowledge of plant biosecurity preparedness and surveillance; and
- increase Department's knowledge of the existing and potential capacity of Regional NRM Bodies to play a critical role in enhancing Australia's plant biosecurity preparedness and surveillance capacity.

The objectives will be achieved through a combination of direct surveying of individual Regional NRM Bodies and group discussions involving several Regional NRM Bodies at a jurisdictional scale. The latter will primarily tease out opportunities to build Regional NRM Bodies capacity to increase their preparedness and surveillance activities.

The survey will be designed to identify what preparedness and surveillance activities are being carried out in the region by Regional NRM Body, their knowledge of other providers' activities and their suggestions for improvements.

About the survey:

- designed to establish details of activities that Regional NRM Bodies are currently delivering;
- will draw out (*where Regional NRM Bodies are not already engaged in delivery*) what opportunities exist to become engaged in delivery and what is required for this to happen;
- will be circulated to Regional NRM Bodies on the 27th May (*via the CEO/GM*) to determine who in their organisation is best placed to complete the survey;
- will have a completion date of 7th June; and
- the final report will be provided to the Department of Agriculture & Water by the 30th June.

Example table of required information regarding Regional NRM Body's delivery capacity of plant pest preparedness, surveillance and early response:

Indicate (X) in the table below whether your Regional Body delivers the identified services and activities.

| | Environmental Exotic Plant Pests | | | Agricultural Exotic Plant Pest | | |
|--|---|--|-------|---|--|-------|
| | Plant Pathogens <i>(e.g. fungi, bacteria, viruses)</i> | Invertebrates <i>(e.g. insects, mites, nematodes, snails)</i> | Weeds | Plant Pathogens <i>(e.g. fungi, bacteria, viruses)</i> | Invertebrates <i>(e.g. insects, mites, nematodes, snails)</i> | Weeds |
| Development & dissemination of education programs. | | | | | | |
| Diagnostic. (pest ID) | | | | | | |
| Capture, disseminate and track information. | | | | | | |
| Mapping of pest detection and distribution. | | | | | | |
| Actively engaged in detection. | | | | | | |
| Early response either as a lead agency or supporting agency. | | | | | | |



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 engaged on behalf of NRM Regions Australia

Regional NRM Body Plant Pest Preparedness and Surveillance Capacity Survey



Why this survey is important to your Regional NRM Body

By participating in this survey, you will be:

- helping your regional body to achieve outcomes in protecting the environment and agricultural productivity;
- contributing to lifting the relevance and profile of your regional body at a national, state and regional scale;
- potentially opening the door to increased funding;
- increasing plant biosecurity knowledge of your staff; and
- increasing community and land manager engagement.

Background

Through Australia's 54 Regional NRM Bodies established networks of land managers, local community and industry groups and individuals, an opportunity exists to build and provide expertise and capacity in plant pest preparedness and surveillance.

Increasing Regional NRM Bodies involvement in plant pest preparedness and surveillance presents both a financial opportunity for the bodies and an opportunity to further engage with land managers who may not be engaged through existing programs and mechanisms.

To help achieve this the Department of Agriculture & Water have contracted NRM Regions Australia (NRMRA) to carry out a gap analysis of Regional NRM Bodies plant biosecurity preparedness and surveillance capacity. This project will focus on identifying both existing and potential capacity along with blocking and enabling factors to fulfill that potential capacity.

Definitions

Plant pests consists of living organisms that have the potential to adversely affect food, fibre, ornamental crops and stored products, as well as environmental flora and fauna. Plant pests include disease/pathogens (bacteria, fungi, virus), insects, mites, nematodes, snails and weeds.

Biosecurity preparedness consists of systems and activities that enhance the capacity to detect and monitor plant pests and respond effectively and efficiently to any detections.

This includes:

- Development and dissemination of education programs to lift the public's awareness of possible plant pest entry points and what to look for.
- Diagnostic capability to be able to quickly and accurately identify plant pest.
- Reporting systems that can efficiently capture, disseminate and track information.

- Data management including mapping, to create spatially representations and track the distribution of the pest.
- Decision making processes that clearly identifies stakeholders' agreed role, capacity, authority and delegation powers.

Biosecurity surveillance involves having systematic processes operating that allows for early detection, reporting and monitoring of plant pests. This includes general surveillance which is having systems in place which allow general detection of any plant pest (e.g. community weed awareness programs) and targeted surveillance where systems are established to detect a specific pest (e.g. infra-red detection of Fire Ants).

Biosecurity early response is the ability to respond to an early detection of a pest to be able to contain and eradicate the pest.

Exotic pests are introduced species that does not naturally occur in the area and has been brought in accidentally or intentionally by humans or by other vectors.

Environmental plant pests have a negative impact on our environmental and social amenities.

Agricultural plant pests incur an existing or potential economic loss to agriculture as a result of their presence. Many agricultural plant pests are also environmental pests and vice versa.

Please provide the following information:

| | |
|-----------------------------|--|
| Name of Regional NRM Body: | |
| State/Territory: | |
| Survey completed by (name): | |
| Email address: | |

Survey Sections for Completion

| Section No. | Aspect | Page |
|-------------|---|------|
| Section 1 | What plant biosecurity preparedness and surveillance activities are currently being undertaken by your regional organisation. | 3 |
| Section 2 | Identifying opportunities to address identified gaps in plant biosecurity preparedness and surveillance in your region. | 5 |
| Section 3 | NRM regional body staff knowledge of plant biosecurity preparedness and surveillance. | 7 |

Section 1 | What plant biosecurity preparedness and surveillance activities are currently being undertaken by your regional organisation.

Question 1. To indicate where your Regional NRM Body *currently* delivers the listed services and activities place an 'X' in the relevant box/es.

| Activity/Service | Environmental Exotic Plant Pests | | | Agricultural Exotic Plant Pest | | |
|--|--|---|-------|--|---|-------|
| | Plant Pathogens (e.g. fungi, bacteria, viruses) | Invertebrates (e.g. insects, mites, nematodes, snails) | Weeds | Plant Pathogens (e.g. fungi, bacteria, viruses) | Invertebrates (e.g. insects, mites, nematodes, snails) | Weeds |
| PREPAREDNESS | | | | | | |
| Development of education programs. | | | | | | |
| Dissemination of education programs. | | | | | | |
| Strategic and/or tactical planning. | | | | | | |
| Research incl. prioritization, risk assessment and possible vector/dispersal mechanisms. | | | | | | |
| SURVEILLANCE | | | | | | |
| Capture, disseminate and track information. | | | | | | |
| Diagnostics (pest/disease/disease causing agents ID) | | | | | | |
| Data capture/collation (incl. QA) Mapping of pest detection and distribution. | | | | | | |
| Actively engaged in detection. | | | | | | |
| RESPONSE | | | | | | |
| Early response either as a lead agency or supporting agency. | | | | | | |
| FURTHER COMMENTS: | | | | | | |

Section 1 questions continued...

| Question No. | Question | Please put an 'x' to indicate best answer. | | |
|--------------|--|--|----------|-------------|
| | | Not at all | Somewhat | Extensively |
| Q 2. | To the best of your knowledge, to what extent are individual land managers engaged in preparedness, surveillance and early response activities? | | | |
| Q 3. | To the best of your knowledge, to what extent are primary industry organisations engaged in preparedness, surveillance and early response activities? | | | |
| Q 4. | To the best of your knowledge, to what extent are national, state and territory government agencies engaged in preparedness, surveillance and early response activities? | | | |
| Q 5. | To the best of your knowledge, to what extent are local government agencies engaged in preparedness, surveillance and early response activities? | | | |
| Q 6. | To the best of your knowledge, do commercial service providers (e.g. agronomists) provide preparedness, surveillance and early response services? | | | |

Section 2 questions on next page...

Section 2 | Identifying opportunities to address identified gaps in plant biosecurity preparedness and surveillance in your region.

Question 7. To indicate which services your Regional NRM Body would deliver (*beyond those you are already delivering*) if adequately funded and staffed, place an 'X' in the relevant box/es:

| Activity/Service | Environmental Exotic Plant Pests | | | Agricultural Exotic Plant Pest | | |
|--|---|--|-------|---|--|-------|
| | Plant Pathogens <i>(e.g. fungi, bacteria, viruses)</i> | Invertebrates <i>(e.g. insects, mites, nematodes, snails)</i> | Weeds | Plant Pathogens <i>(e.g. fungi, bacteria, viruses)</i> | Invertebrates <i>(e.g. insects, mites, nematodes, snails)</i> | Weeds |
| PREPAREDNESS | | | | | | |
| Development of education programs. | | | | | | |
| Dissemination of education programs. | | | | | | |
| Strategic and/or tactical planning. | | | | | | |
| Research incl. prioritization, risk assessment and possible vector/dispersal mechanisms. | | | | | | |
| SURVEILLANCE | | | | | | |
| Capture, disseminate and track information. | | | | | | |
| Diagnostics (pest/disease/disease causing agents ID) | | | | | | |
| Data capture/collation (incl. QA) Mapping of pest detection and distribution. | | | | | | |
| Actively engaged in detection. | | | | | | |
| RESPONSE | | | | | | |
| Early response either as a lead agency or supporting agency. | | | | | | |
| FURTHER COMMENTS: | | | | | | |

Section 2 questions continued...

| Question No. | Question | Answer | | | | | |
|--------------|--|---|-------------------|----------------------|------------|------------------------------|-----------------|
| Q 8. | Other than more funding, what else would help your Regional NRM Body in delivering the above activities? | | | | | | |
| Q 9. | What potential impediments do you envisage to regional body staff/regional delivery mechanism being directly involved in preparedness, surveillance and early response components? | | | | | | |
| | | Please put an 'x' to indicate best answer. | | | | | |
| | | Not at all | Somewhat | Extensively | | | |
| Q 10. | How well do you believe that preparedness activities are well coordinated in your region? | | | | | | |
| Q 11. | Do you believe that surveillance activities are well coordinated in your region? | | | | | | |
| Q 12. | Do you believe that early response activities are well coordinated in your region? | | | | | | |
| | | Government Agencies | Local Governments | Peak Industry Groups | NRM Groups | Commercial Service Providers | Other (specify) |
| Q 13. | Who do you believe should be providing the lead role in driving a coordinated approach to preparedness? | | | | | | |
| Q 14. | Who do you believe should be providing the lead role in driving a coordinated approach to surveillance? | | | | | | |
| Q 15. | Who do you believe should be providing the lead role in driving a coordinated approach to early response? | | | | | | |
| Q 16. | What do you believe needs to occur to improve the integrated delivery of plant pest biosecurity? | | | | | | |

Section 3 | Regional NRM Body staff knowledge of plant biosecurity preparedness, surveillance and early response.

| Question No. | Question | Answer |
|--------------|---|--------|
| Q 17. | Does your regional body have a list of high priority new and emerging plant pests for your region? If so, can you please provide. | |
| Q 18. | Does your regional body have an integrated pest plan for the control/eradication of these plant pests and if so, does that plan have preparedness, surveillance and early response components? | |
| Q 19. | What other stakeholder (e.g. Local Government) plant pest plans are you involved in implementing? | |
| Q 20. | How would you rate your regional body staff awareness (good/moderate/not at all) of Australia's National Priority Plant Pests? http://www.agriculture.gov.au/pests-diseases-weeds/plant | |
| Q 21. | How would you increase the awareness of your staff of new and potential plant pests in your region? | |

