

Summary of final report for Biosecurity R&D Fund¹ research project:

Increasing stakeholder participation in biosecurity management

Proponent: Invasive Animals Limited

Compiled by Jenny Crisp (DPIRD Biosecurity R&D Fund manager) in March 2018²



Project information

Project manager and contact person

Name: Tanya M Howard

Email: thoward9@une.edu.au

R&D Fund contribution

\$404,600

Other contributions

\$1,091,300

Total investment into project

\$1,495,900

Start date

1st June 2015

Finish date

31st December 2017

Introduction and justification

A research team collaborating through the Invasive Animals Cooperative Research Centre (IACRC) recently completed a project aiming to address knowledge gaps about community participation and communications in biosecurity activities. The geographic focus for this research was the South-West Agricultural Region of Western Australia (WA); working with the Department of Primary Industries and Regional Development (DPIRD³) project 'Transforming Regional Biosecurity Response' (TRBR). (The TRBR project team works with regional communities to increase their capacity to control priority pests at a landscape scale, mainly through the establishment of Recognised Biosecurity Groups (RBGs)⁴.)

The focus of the IACRC research, and their support for TRBR project activities, is highly consistent with a number of the principles and goals of the Western Australian Biosecurity

¹ The Biosecurity R&D Fund is part of the Boosting Biosecurity Defences project, supported by Department of Primary Industries and Regional Development (DPIRD)

² This summary draws on information from the IACRC final project report (Dec 2017), earlier IACRC milestone reports, and TRBR project documents.

³ DPIRD was formerly known as the Department of Agriculture and Food Western Australia (DAFWA)

⁴ RBGs provide opportunities for communities and industry to partner with organisations, including state and local government agencies to share responsibility and coordinate the control of declared pests across the landscape.

Strategy (2016-2025)⁵; primarily around the principle that 'biosecurity is a shared responsibility' (recognition that land managers, government agencies, industry and the community are jointly responsible for pest and disease management). The Strategy also recognises the importance of science and research in addressing priority knowledge gaps in biosecurity management.

Approach and key findings

More specifically, the IACRC research team collaborated with the TRBR project team to:

- Conduct research into factors affecting community engagement/participation in biosecurity management;
- Apply research findings to developing strategies and action plans with TRBR team and other relevant stakeholders; and
- Build the capacity of the TRBR team and other relevant stakeholders to develop and implement effective community engagement and communication strategies.

Key activities, findings and achievements are presented below.

Research into participation in biosecurity management

Two state-wide surveys of rural landholders were conducted in June/July 2016 to gain an understanding of the drivers and barriers to rural landholder participation in individual and group invasive animal control activities in WA. Residents from five WA Natural Resource Management Regions (Northern Agricultural, Wheatbelt, South-West, South Coast and Rangelands) were contacted using a random-digit-dial telephone survey. To be included in the survey respondents needed to own or reside on a property 10 ha (25 acres) or greater in one of the target areas. Four reports detailing survey results were produced and are available on request; some of the results are presented below.

REPORT 1: Participation in Invasive Animal Management Programs in Western Australia: Drivers and Barriers

Survey 1 - Participation in invasive animal control (731 respondents)

Results showed that foxes and rabbits were perceived as the most widespread invasive species across all five NRM areas except the Rangelands, where wild dogs and cats were perceived as a greater threat. Foxes were identified as the most severe threat to sheep properties, and rabbits were identified as the largest threat to properties that conducted cropping or horticultural activities. Perceived severity of threats from wild dogs, feral pigs and feral cats varied as a function of location, but not enterprise type.

Non-participation in any pest animal control activities (in past 12 months) was around 50%. Of those that did participate, 13% engaged in primarily individual control activities but not group control, 28% engaged in most group control activities but not individual control and 9% engaged in both individual and group control activities. Analysis revealed the most important drivers and barriers related to participation in pest animal control activities for 3 different 'categories' of participation:

- For participation in *any* type of control activities, the most important drivers and barriers were perceived severity of invasive animal problem and age.
- For participation in *individual* control activities, the most important drivers and barriers were skill, available time, perceived community expectation to control invasive animals and emotional response to pest animal issues.

⁵ The Western Australian Biosecurity Strategy (2016-2025) was launched in November 2016; setting strategic direction for the management of emerging and ongoing biosecurity issues that impact on agriculture, fisheries, forests and the environment within Western Australia.

- For participation in *group control* activities, the most important drivers and barriers were participation of neighbours, property as main source of income, property size, community recognition and knowledge of group activities.

Specific strategies to address the different barriers and drivers for each participation 'category' are provided in the report.

REPORT 2: Landholder Participation in Biosecurity Group Activities in Western Australia: Barriers and Drivers

Survey 2 - Awareness of and participation in biosecurity group activities (838 respondents)

Two distinct 'behaviour' profiles were identified, based on membership and participation in a range of group activities: participators (7%), and non-participators (93%). All participators were formal members of at least one community-led biosecurity group, and 2% were members of two or more groups. 70% of non-participators indicated they were not aware of any invasive animal management groups in their area. Analysis identified the beliefs about administration of community-led biosecurity groups that were most strongly associated with each of 2 'categories' of participation:

- The most important beliefs associated with participation in *biosecurity group meetings* were: trust in the capabilities and judgement of the other members of the group, enjoyment of social interactions, having committee skills and a perceived expectation to be involved by family and friends.
- The most important beliefs associated with participation in *educational events and group control activities organised by biosecurity groups* were: awareness of event or activity, trust in the capabilities and the programs of the group, skills, community spirit/contribution and knowledge.

Specific strategies to address the different beliefs for each participation 'category' are provided in the report.

Respondents were also asked about their willingness to pay an annual rate to support the activities of a community-led biosecurity group in their area, and approximately one third of respondents indicated they were unwilling to pay an annual rate. There was also some confusion around the concept and process for declared pest rating, although the TRBR project indicates this is not surprising given few or no communication/engagement activities related to the declared pest rate had been run in the areas surveyed, prior to the survey (but have since).

REPORT 3: A Biosecurity Group Perspective of Landholder Participation in Biosecurity Activities in Western Australia

Report 3 is based on data from surveys 1 and 2; but presented from the perspective of the 12 community groups involved with biosecurity identified by survey respondents⁶. This is intended to assist individual biosecurity groups select or develop the most appropriate intervention techniques to boost awareness, membership and participation rates.

REPORT 4: Participation in Biosecurity Activities in Western Australia: Commercial Producers versus Recreational Landholders

Report 4 is also based on data from surveys 1 and 2; presented from the perspective the commercial producer (property is main source of income) and the recreational landholder (property is not primary source of income). It explores and compares the drivers and barriers to participation in invasive animal management activities and associated group activities for each of these landholder groups. Findings included:

⁶ Blackwood Biosecurity Inc., Central Wheatbelt Biosecurity Association, Eastern Wheatbelt Biosecurity Group, Northern Agriculture Catchment Council, Leschenault Biosecurity Group, Southern Biosecurity Group, Northern Mallee Declared Species Group, Mingenew Irwin Group, Wagin Woodanilling Landcare Zone, Warren Catchment Council, Morawa Shire and Rangelands (combined Carnarvon, Meekatharra, Goldfields groups)

- A higher proportion of biosecurity group members tended to be individuals that earned their main source of income from their property.
- Individuals that earned their main source of income from their property indicated they were more willing to pay larger amounts as an annual rate to support the activities of a community-led biosecurity group in their area.
- Individuals that earned their main source of income from their property perceived rabbits and foxes to be more of a problem than those that did not, and tended to participate more in rabbit and fox control activities.

Implications of the research

It will benefit DPIRD staff and biosecurity groups to understand the factors impacting participation in biosecurity management, and carefully consider the suggested strategies detailed in reports 1 and 2 for successful engagement and greater participation. A number of examples of research implications to be considered are presented below:

- Not all non-participants are the same. Some need knowledge and skills building, some need to be convinced that control activities are effective and others may benefit from increased normative pressure to participate in activities for example. These differences need to be understood and engagement strategies tailored and targeted accordingly.
- A common attribute across all non-participants was a lack of perceived personal vulnerability to pest animals; they did not believe that they currently had a serious pest problem on their properties. An engagement strategy might differ depending on whether this perception is accurate (no problem currently exists) or inaccurate (there is currently a problem).
- Participation in control activities was strongly associated with perceived level of severity of invasive animal problems, and the perceived threat associated with particular species varied considerably across biosecurity group areas. The implication is that when nominating their target species, it will be important for biosecurity groups to engage with their local landholders to ascertain their priorities.
- An influential driver for participation in biosecurity management for recreational landholders was the expectation that control activities should be conducted. This indicates that for this group in particular, the message that *all* landholders are responsible for the management of declared species should be a key element of the engagement strategy.

Application of the research

Application by DPIRD

To support application of the research, further discussion and planning took place at a 2-day workshop organised by DPIRD in February 2017. Participants included the TRBR team, other DPIRD biosecurity staff, RBG members and Executive Officers, senior DPIRD leadership and IACRC research team members. The IACRC slide presentation from this workshop was provided.

Biosecurity Officers from the TRBR team have reported using the research findings (and other community engagement knowledge gained through IACRC support - see Masterclass, VET training and DPIRD TRBR support sections below) in their own engagement activities, and also passing on to biosecurity groups via engagement workshops.

Pilot project with the Peel-Harvey Biosecurity Group

To demonstrate potential application of data arising from the barrier/driver research, the IACRC research team, in collaboration with the TRBR team, designed, managed and mentored a pilot project with the Peel-Harvey Biosecurity Group, with the aim of improving participation of lifestyle and absentee landholders in Cotton bush management programs. Landholders were invited to attend one of two focus groups to discuss the Cotton bush issue in their areas, and potentially investigate the factors that prevented them from being involved.

Results from this discussion were then used to design an engagement strategy involving farm visits, targeted information (control cards) and signage displayed publicly to indicate the landholder's commitment to cotton bush management, and the strategy was implemented across 3 sites in November 2017. A slide presentation about the pilot project was provided.

Case studies

The stories of group development for three biosecurity groups in the South-West Agricultural Region, including insights about the process of becoming a RBG, have been documented as case studies as part of the IACRC project. The three biosecurity groups selected were Blackwood Biosecurity Inc., Northern Mallee Biosecurity Group and Peel Harvey Biosecurity Group. Finalised in June 2017, the 3 case study reports are expected to be helpful to communities who are thinking of forming a biosecurity group and want to know what other groups have experienced during this process. They may also be helpful for government staff working with community members and those interested in understanding more about 'community-led' models of biosecurity management; the TRBR team indicated they gained insight into issues relevant to groups they were working with at the time (e.g. legacy) directly from the case study work.

Formal training

In 2016 the IACRC team developed and delivered a Masterclass in Leadership for Community Engagement and Invasive Species Management. This included opportunities to improve principles and practice for the TRBR team and other DPIRD Biosecurity officers in collaboration with other invasive species practitioners from Queensland, Victoria and South Australia. This was a 5-day in-person learning event, consolidated by application, reflection and learning in the workplace. A number of DPIRD staff who attended the Masterclass reported implementing new community engagement strategies in their daily work to the IACRC team, and a potential 'ripple effect' on the wider DPIRD culture.

The IACRC team also developed a 2-day certified vocational education and training (VET) pilot course in community engagement in invasive species management, delivered by a Registered Training Provider. Four courses were delivered across WA (Bunbury, Albany, Northam and Geraldton) in 2017 to a total of 53 people involved in community-led biosecurity management. Participants included RBG coordinators and members, DPIRD Biosecurity Officers, NRM professionals and local government Rangers. On completion, participants had the option of gaining accreditation in the competency BSBPM418 - Apply project stakeholder engagement techniques (one unit towards a Certificate IV in Pest Management).

Benchmarking/needs analysis

Early in the project, the IACRC research team conducted semi-structured interviews with 10 TRBR team members to benchmark the level of skills and understanding around TRBR project scope, barriers and opportunities, and staff capacity and needs to implement community engagement (Report provided to the TRBR project team, February 2016).

The research team also interviewed 7 community/other key informants with experience of the TRBR project through their work in NRM, community engagement and/or pest management (2 x Regional NRM CEOs, Regional NRM project officer, State NRM officer, Aboriginal land manager, Local government officer and Government economist). (Report provided to the TRBR project team in March 2016; focused on identifying strategic points of intervention for TRBR activities.)

These two reports augment information gathered previously through a needs analysis of community and government stakeholders conducted by the TRBR project in August 2015.

Ongoing support for DPIRD TRBR team

In addition to all above activities, the IACRC research team provided ongoing support and mentoring to the DPIRD TRBR project team in the following ways:

- One-on-one ongoing mentoring of TRBR team manager by IACRC team member throughout project implementation; intermittent mentoring for other DPIRD staff.
- Providing access to learning networks, past and current research and professional contacts.
- IACRC team assisted in the planning of 2 important community biosecurity forums organised by TRBR in Oct 2016 (38 participants); IACRC also presented at forums.
- IACRC team supported TRBR to set up a Community of Practice in community engagement for DPIRD biosecurity staff; offering a mechanism for staff to continue to share and build on new knowledge and experiences in community engagement post-project.
- IACRC coordinated a focus group with the TRBR team in September 2017 for a final project reflection and closure.
- Researchers also supported DPIRD Invasive Species to design a state-wide invasive species program (funded by the Agriculture Competitiveness White Paper) with a significant behaviour change component. The end product is a conceptual framework for modifying behaviour change; currently being tested on-ground.

Next steps

The research team reports a Centre for Invasive Species Solutions (CISS) funded project is proposed to build on the research relationships developed in this project. The exact focus and scope of this new project is not yet finalised, but negotiations are underway as part of the CISS portfolio development.

The DPIRD TRBR project was extended for a further 12 months (from its proposed end in September 2017 to June 2018) to continue the community engagement work supporting the establishment of RBGs in the South-West Agricultural Region of WA. This work is transformational in that it provides a co-investment funding mechanism for landholder-led management of declared pest species on a landscape-scale in WA.

Reports

Barriers and drivers to participation in biosecurity management:

- Report 1: Participation in invasive animal management programs in WA: Drivers and barriers (by IAL/DAFWA, Dec 2016)
- Report 2: Landholder participation in biosecurity group activities in WA: Drivers and barriers (by IAL/DAFWA, Jan 2017)
- Report 3: A biosecurity group perspective of landholder participation in biosecurity activities in WA (by IAL/DAFWA, Mar 2017)
- Report 4: Participation in biosecurity activities in WA: commercial producers versus recreational landholders (by IAL/DAFWA, Jun 2017)
- Slide presentation 'Understanding inaction: Why do landholders fail to participate in pest animal management?'

Biosecurity group case studies:

- Case Study - Blackwood Biosecurity Inc (by IAL/DAFWA, Jun 2017, 21pp)
- Case Study – Northern Mallee Biosecurity Group (by IAL/DAFWA, Jun2017)
- Case Study – Peel-Harvey Biosecurity Group (by IAL/DAFWA, Jun 2017)

Pilot study of application:

- Slide presentation 'Drivers and barriers to cotton bush control by absentee landholders'
- Summary of pilot study conducted with Peel Harvey Biosecurity Group (tbc)

Benchmarking/needs analysis

- Report 1: Findings and recommendations from DAFWA staff interviews (by IAL/DAFWA, Feb 2016)
- Report 2: Insights and intervention points from key informant interviews (by IAL/DAFWA, Mar 2016)