

Preface: supporting citizen stewardship

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Managing invasive species is a significant social challenge. It involves securing the involvement of many people to serve many roles: conducting technical investigations; managing government funding and coordination projects; specialist advice and operations; and, with pest species that have become established in the landscape, carrying out essential frontline control activities. To be effective in frontline control often requires a sustained, and sometimes burdensome, commitment from private citizens. To secure this social investment requires good communications with the community and the ability to win the continuing engagement of many people with diverse interests – and to maintain this even when conditions are unfavourable.

Between 2012 and 2017, a large team of Australian and American researchers and frontline practitioners sought answers to questions such as:

- How can voluntary engagement by private citizens to tackle a very difficult challenge be achieved?
- What types of communication strategies will ensure strong motivation and good coordination?
- Can public and private bureaucracies be reshaped to support citizens who are prepared to do the right thing?

The aim was to provide the people working in the field of invasive species management with the best available tools to meet the social and human behaviour challenges of their work. Many collaborations between researchers, control practitioners and citizens helped to find ways to focus the 'human sciences' on these aspects of invasive species control. This resulted in new tools applied to many practical problems encountered by practitioners, and provided training and other supports to those working at the coalface.

The social requirements for managing invasive species are not unique to the management of invasive species. Many natural resource stewardship initiatives, such as the protection of habitats, managing water or protecting soils face similar challenges. Communities, particularly rural communities, also have to deal with

the same sorts of challenges when attempting to ensure resilience in the face of many types of external threats, or to ensure the welfare of members of that community. Though this book focuses specifically on the management of invasive species, its content is relevant to many other difficult challenges.

The book also contributes at another level: political concerns are often expressed about the effectiveness and the cost of public regulation and other government policies. As a result, policy innovations are often advocated, including novel instruments, initiatives to encourage philanthropy and voluntary action, and forms of 'smart' regulation. Industry self-regulation, codes and standards and hybrid governance are often proposed as alternatives to policed regulation. However, implementation of any such governance paradigm requires far more than law and policy instruments, or organisational structures. It also requires suitable resourcing arrangements, ways of interacting, and skills. This book considers many of the complementary changes needed to make the policy and regulation innovations that place more emphasis on citizen action effective. The content of this book is relevant well beyond the management of invasive species.

Primarily, this book is one outcome of a fruitful Australian-US collaboration. Other outcomes include training programs and research reports, and research-based recommendations about how to better align institutions to the needs of the people who take on the important stewardship roles. The chapters in this book concern various aspects of engagement, communications, human behaviour and institutional arrangements that are likely to affect citizen action on invasive species. They complement the publications and practice support resources that were generated by the Invasive Animals Cooperative Research Centre program on facilitating effective citizen action (IACRC Program 4E). Most of the work of the IACRC Program 4E collaboration focused on Australian issues; the involvement of the US partners, particularly those from Penn State University and Cornell University provided additional expertise that enabled an accelerated research agenda and the application of their knowledge to problems that are significant in practice. Box F1 lists the principles that guided the IACRC Program 4E research and laid the foundation for the structure and chapters of this book.

Basically, the work of the researchers followed two paths: (1) develop and distribute best practice guidance, based on up-to-date research of engagement and communications – we developed publications, online tools and training to meet this aim; and (2) work with frontline teams on particular research and practice projects that practitioners nominated, thus providing a 'real world' set of challenges and a basis for researchers and practitioners to work together to tackle them. The Appendix provides more details on the outcomes of the project.

Box F1. IACRC Program 4E streams and principles

We structured the IACRC Program 4E into four streams: engagement, communications, institutions and integration. We agreed a set of fundamental principles (see Box 1.2) for the research and practice improvement work, and evaluated our teams' performance against these principles using surveys and discussion. A priority was to ensure that we were delivering real value to our collaborators and to those working at the frontline.

IACRC Program 4E principles

1. Our overall aim is to support and demonstrate a community-led model of invasive species management.
2. Our priority is to deliver tangible value to the 'clients' who are able to use the outputs. Our research will be identified and co-developed or negotiated with the 'client/partner. We work 'with' and 'for' community, not 'on' community.
3. Our partners will be genuinely engaged in the research and in its translation into practice. We will blend partner team members in our research/practice teams.
4. While working through government agencies, NRM bodies, etc., our focus is enabling those 'at the frontline', whether government or NGO or corporate workers.
5. One measure of our success will be an active cohort of leaders and communities of practice who are skilled in contemporary approaches.
6. We aim to embed scientific 'continuous improvement' approach in the management of the human aspects of invasive species control, based upon sound theory, empirical testing, peer dialogue and evaluation.

It would be misleading to suggest that all aspects of the research and the collaborations went smoothly. This was never likely given these principles. Under the agreed approach, frontline partners largely determined our priorities, and these (and the design of the program as a whole) required that the researchers work closely with 'clients' and with people from different disciplines and institutions, often across two countries. There were some conflicts and occasional tears. Resource re-allocation was needed at various times to meet the needs prioritised through our discussions with partners. We tried things that did not work as well as we wanted, such as experimental online communities of practice. For some challenges, feasible solutions were beyond what we could do within the boundaries of time, resources and our capabilities. But overall it was very successful.

We designed the research team's internal processes, including how we allocated our resources and our reporting, to minimise bureaucracy and to maximise flexibility to meet the needs of our clients and partners. We used annual confidential surveys of stakeholders and of the research team itself to check our progress against the criteria that we set for the program, reflecting the core principles. Confidential telephone interviews were carried out by an interviewer who was not part of the program to make it easier for people to make critical

comments about the team's work, or to put forward proposals for doing things differently. This allowed us to check that we were doing what we had promised to do, and that our stakeholders were getting value from the work. The results from the surveys showed that (as our four programs matured and outcomes became more tangible) external stakeholders became increasingly happy with what the program was delivering. They generally believed that we were true to our principles. Within the team, we were satisfied that we were making a valuable contribution and that we were true to our principles; nevertheless, we generally felt that there was more that we wanted to do.

Importantly, as well as achieving useful outcomes, we made many friendships and achieved successes. We maintained a strong sense that we were all 'in it together' trying to do important work that would make a real contribution to those at the frontline. Over the last 6 years, many of the authors of this book have had the privilege of working with people who do far more than their personal responsibility requires, spending many weeks each year coordinating and managing programs with their neighbours. These champions work together to form control strategies, then implement and evaluate their programs. Often citizen teams carry out frontline work on public lands over which they have no legal title and for which they have no formal responsibility – in one instance even becoming 'feral weeders' who sneak onto public lands to control invasive plants when the responsible agency has no staff or budget to do the necessary work. Clearly, without the substantial sacrifices made by some people, the serious problem of invasive species would be far worse than it is today.

Our aim with this book is to provide future leaders who are responsible for encouraging community engagement in the management of invasive species in Australia with ideas that are relevant to their work. There are aspects of this challenge that are not obvious even to those who are involved, and this book will reveal many of these. Some of the chapters deal with abstract ideas, such as the philosophical basis of the relationship between experts and citizens; others deal with the science that underpins modern methods of communication and engagement, and still others deal with strategic questions. The purpose of this book is to expose practitioners, especially, to thinking that goes beyond the usual to better meet an increasingly difficult social, as well as ecological and economic, challenge.

At its heart, the book is based on a belief that the management of invasive species is not fundamentally a technical problem – concerned only with better ways of killing harmful species, reducing breeding rates and creating containment – but a social challenge. It requires the alignment of institutions, of public and

private organisations, groups of people and individuals. This book describes the techniques and theories – adapted to fit needs – that informed the IACRC Program 4E. The chapters are a mix of theory, case studies and advice; they discuss issues that already have currency, such as ‘engagement’ and ‘social responsibility’ and ‘communication’, but they do so in ways that underline the necessity of aligning the many factors that make up effective and efficient social interactions.

Structure of the book

The book covers various aspects of the IACRC Program 4E. The first few chapters discuss the governance structures and institutions that provide the framework within which invasive species managers work and how that framework is changing and requiring innovative management. Chapter 1 outlines the governance structure and institutions in Australia and the US and how they are changing to embrace a novel policy concept, ‘shared responsibility’. The chapter discusses the impact of policy changes on frontline invasive species managers. Chapter 2 explains the method, systems thinking, used as a key framework for key aspects of this work and relates to the implementation of the policy changes to strategy discussed in Chapter 1. The systems thinking method has proven useful to help community groups and strategists to gain a clear understanding of complex problems. Chapter 2 provides examples of how some groups have used the method.

An important requirement to meet the challenges identified in Chapter 1 is for organisations to become more adaptive and to continuously learn. For any organisation, this is difficult; and it is particularly so for bureaucracies. Achieving the necessary internal coordination is also not easy but there are methods for doing so. Chapter 3 considers what it means to be an adaptive and learning organisation, providing case study examples of how some groups have managed to embed learning and adaptation in their work, and introducing concepts of engagement and communication that are explored in more depth in the book.

Chapters 5–7 reinforce some of the insights discussed in the early chapters, reframed in terms of the community engagement challenge, and placing the chapters that follow in the context of that challenge. Chapter 5 explains how today’s shared responsibility system needs to remodel the expert–citizen relationship. Chapter 6 discusses the changing role of leadership within a remodelled engagement regime. Chapter 7 further explores the concept of collective reflection as a way to stimulate continuing improvement, also considered in Chapter 3.

Chapters 9 and 10 explore how the behavioural sciences can ensure that those involved in invasive species management are more scientific and more effective in public communication. Effective responses to the complex problems of invasive species management, including the need for effective methods to shape behaviour

to meet social goals, is a variant of problems faced in other professions, such as community health and education programs. There are lessons from the scientific theories and practices applied in those field that can be translated into methods for more effective social engagement in invasive species management. Chapter 8 considers the value of taking lessons from other disciplines, using a scientific approach to effectively engaging the community in the management of invasive species. Chapter 9 discusses behaviour change and how a sophisticated understanding what this entails can help with invasive species management. One method to make it more likely that communication (essential to achieve effective community engagement) is effective is to ensure that messages are precisely targeted. Chapter 10 provides methods to 'segment' groups in society who are involved with, or should be involved with, the management of invasive species, to ensure accurate delivery of carefully crafted communication.

The last two chapters return to the broader social and institutional framework for invasive species management. Chapter 11 focuses on the operation of the mass media: an issue identified by invasive species practitioners as increasingly significant in the governance system that affects citizen action. Chapter 12 considers what might be done to increase the effectiveness of invasive species management, given the insights from theory and practice that are available from this book and the other resources developed in IACRC Program 4E 'Facilitating effective community action'.

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