DEVELOPMENT OF A NATIONAL ‘INVASIVE SPECIES MANAGEMENT’ DIGITAL INFORMATION PORTAL

FINAL REPORT FOR PROJECT P01-E-008

AUTHOR
Frank Exon

OCTOBER 2022
The Centre for Invasive Species Solutions gratefully acknowledges the financial and in-kind contributions made by its members, associate members, and partners.

We are a not-for-profit, member-based organisation formed to address the impact of invasive plants and animals across Australia.

We acknowledge the Traditional Custodians of the lands on which we meet and work and pay our respects to Elders — past, present and emerging.

We acknowledge all Aboriginal and Torres Strait Islander peoples and their continuing connection to country, culture and community.

The Centre for Invasive Species Solutions is governed and managed by Invasive Animals Limited.

CITATION
This report should be cited as: Exon F (2022). Development of a National 'Invasive Species Management' Digital Information Portal: Final Report for Project P01-E-008, Report for the Centre for Invasive Species Solutions.

invasives.com.au
ISBN e-Book 978-1-925727-70-8
ISBN Print 978-1-925727-71-5

COPYRIGHT
© Invasive Animals Ltd trading as Centre for Invasive Species Solutions. Apart from fair dealing for the purposes of private study, research, criticism or review as permitted under the Copyright Act 1968, no part may be reproduced, copied, transmitted in any form or by any means (electronic, mechanical or graphic) without the prior written permission of the Centre for Invasive Species Solutions.

This report may be cited for purposes of research, discussion, record keeping, educational use or other public benefit, provided that any such citation acknowledges the Centre for Invasive Species Solutions.

ACKNOWLEDGEMENT OF PROJECT PARTNERS
The Development of a National 'Invasive Species Management' Digital Information Portal project was led by the Centre for Invasive Species Solutions.

The project was funded by Australian Government Department of Agriculture, Fisheries and Forestry.

DISCLAIMER
While great care has been taken in ensuring that the information in this report is factual and accurate at the time of publication, the Centre for Invasive Species Solutions accepts no responsibility for omissions, errors or changes in data since the time of publication.

Cover designed by Hodge Environmental, hodgeenvironmental.com.au
DEVELOPMENT OF A NATIONAL ‘INVASIVE SPECIES MANAGEMENT’ DIGITAL INFORMATION PORTAL

FINAL PROJECT REPORT FOR PO1-E-008

Frank Exon¹

¹ Centre for Invasive Species Solutions
Contents

Executive summary ................................................................................................................................. 4
Introduction .............................................................................................................................................. 5
Audit: digital tools for invasive species ................................................................................................... 7
  Recommending the Centre’s way forward .......................................................................................... 8
Method .................................................................................................................................................... 9
  The beginnings of a weeds website .................................................................................................... 9
  Building a better PestSmart website .............................................................................................. 9
    User research uncovers what is good, what is missing ................................................................. 10
    Personas keep focus on users’ pains, gains and opportunities .................................................... 11
    Optimal user journeys mapped to design optimal user experience .............................................. 14
Results .................................................................................................................................................. 15
  Weeds Australia website ................................................................................................................... 15
  PestSmart website ............................................................................................................................ 16
  Community Invasives Action website ................................................................................................ 17
  Hard copy Glovebox Guides supplement PestSmart website .......................................................... 18
  New digital strategy and adoption plan to drive adoption of best practices ...................................... 18
  Digital portal crucially supports the Centre’s National Coordinators ................................................. 19
Discussion: trust in science, scientists, institutions, information and technology ................................. 20
  3M State of Science Index 2022 ....................................................................................................... 20
  2022 Edelman Trust Barometer ........................................................................................................ 20
  Digital News Report: Australia 2022 ................................................................................................. 21
Conclusion............................................................................................................................................. 22
References ............................................................................................................................................ 23

Figures

Figure 1. Digital ecosystems related to invasive species in Australia, 2018 .......................................... 7
Figure 2. Common themes relating the PestSmart website arising from user research conducted by Briarbird ................................................................................................................................................ 10
Figure 3. Sally persona, an engaged land manager ............................................................................ 12
Figure 4. Alan persona, a sceptical landowner .................................................................................... 12
Figure 5. Birgitte persona, a natural resource management coordinator ............................................ 13
Figure 7. Journey attributes and stages for each user type ................................................................. 14
Figure 8. Weeds Australia home page: weeds.org.au .................................................................... 15
Figure 9. Daily use of the Weeds Australia website, 13 April 2020 to 30 September 2022 .......... 15
Figure 10. PestSmart website, PestSmart.org.au ............................................................................. 16
Figure 11. Daily use of the PestSmart website, 24 August 2020 to 30 September 2022 .......... 16
EXECUTIVE SUMMARY

The Centre for Invasive Species Solutions (the Centre) sought to develop a digital information portal that would help Australia manage invasive species.

The components of the Centre’s digital information portal—Weeds Australia, PestSmart and Community Invasives Action—were co-designed with the users of these websites. Each website has found a ready, interested audience, supported by the hard copy Glovebox Guides for vertebrate pest species and a growing number of Centre fact sheets.

The Weeds Australia beta website was launched on 13 April 2020. In 900 days, the Weeds Australia beta website was visited by 205,820 users—with 723,039 pageviews, 272,311 sessions and an average session duration of 2:28 (2 minutes, 28 seconds). The upgraded PestSmart website (launched on 24 August 2020) saw 415,947 users—with 717,232 pageviews, 510,940 sessions and an average session duration of 01:11 over the same period.

The digital information portal has also been integral to the effectiveness of the Centre’s National Coordinator Model. The model has three interdependent parts:

1. best practice management toolkits (available on the new Weeds Australia and upgraded PestSmart websites that form the basis of this project)
2. National Coordinators to support people to manage wild dogs, feral deer, and feral cats and foxes
3. the Centre’s community pest monitoring and management platform (Feralscan and WeedScan).

The Centre also invested in developing a new National Digital Information Portal Adoption Plan to inform its decisions for the ongoing development of its digital assets over the next five years.

Work on the Centre’s digital assets will continue beyond the conclusion of this project. Ongoing improvements will need be made to functionality, content and the integration of data between these assets; and in a way that maintains the data privacy of users and manages any cybersecurity risks.

The Centre also needs to improve the search engine optimisation of its websites; and to promote its digital assets across its own communication channels, social media advertising and the media.

The Centre also needs to be mindful of the trust Australians place in science, scientists, and institutions that global surveys indicate is changing year to year.

However, because the Centre strongly focuses on making factually correct, best practice information on pest animals and weeds available (digitally and in hard copy), it is as well positioned as any Australian non-government organisation to build Australians’ trust in its operations—and to make significant inroads on pest animals and weeds across the country.
INTRODUCTION

This project was about effectively communicating the science of invasive species—with the aim of making invasive species management easier, more humane, less costly and more effective for Australians.

The digital technologies underpinning this project are fundamentally anchored to the large-scale networked information system known as the web. Launched to the public in January 1991, the web is now composed of nearly two billion websites worldwide and used by more than five billion people, with an average of nine billion Google searches undertaken every day (Aleksander 2022).

Success in gaining and maintaining audience attention depends not only the quality of the information available on a website, but also on how easy it is for users to navigate and interact with it, and the ease by which it is discovered by search engines such as Google (and competitors) through a process known as search engine optimisation.

Organisations—including the Centre—often augment their organic website traffic through Google advertisements, social media posts, blog and advertisements, the media, and e-newsletters. Brand recognition and reputation are also important attributes for gaining and holding audience attention.

The Centre for Invasive Species Solutions chose to develop a national invasive species management digital portal to:

1. **maximise the value of the investment**—running into the millions of dollars—of its members and partners in new products, tools and strategies to better manage invasive species by **maximising their uptake** by individuals, groups, communities and businesses across Australia

2. **refine and build upon existing digital tools** developed by the Centre’s predecessor—the Invasive Animals Cooperative Research Centre (CRC)—such as PestSmart, FeralScan, the Invasives Action tool and various decision-support systems into an **integrated national resource**

3. **ensure that individuals, groups, communities and businesses who are engaged in invasive species management know the different rules, regulations and policies that apply across different Australian states and territories** so that their **efforts are effective and lawful**.

The Centre’s ambition for the digital portal was that it would become an influential and lasting resource that:

- effectively engaged specific users—extension officers, land managers, biosecurity officers, primary producers, catchment management and Landcare officers, professional pest controllers, and wildlife management students—and Australians in general to actively manage invasive species

- built connections between individuals, groups and communities working on a common cause.

The project aimed to ensure that factually correct, best practice information on pest animal and weed control:

- **was easily and readily available**

- **could be shared with confidence** by Centre partners, members and National Coordinators

- **would ultimately support on-ground impact** for economic, environmental and social outcomes.
The process adopted by the Centre to deliver this project involved:

- reviewing current and future digital biosecurity and invasive species tools to ensure collaboration, coordination and investment in an innovative product that would not directly compete with existing programs
- developing a robust and end-user-driven digital resource tailored to the objectives of the Centre’s partner and member organisations
- making purpose-built and engaging pest animal and weed toolkits—and other resources for best practice management planning, coordination and monitoring—available online and in hard copy
- working towards integrating invasive species data, where possible, across current and future platforms to provide a one-stop shop for invasive species information
- monitoring the impact of this national digital resource on end-user awareness and knowledge of invasive species.
AUDIT: DIGITAL TOOLS FOR INVASIVE SPECIES

The Centre engaged Michael McManus and Jonathan Roper from Briarbird in 2018 to audit digital websites and apps used in the agriculture sector.

Through various research and consultation activities, the consultants developed a detailed understanding of the existing information environment, and the needs and preferences of audiences (McManus and Roper 2018):

*The digital ecosystem that relates to invasive species in Australia is extremely broad, varied and complex. It comprises a myriad of websites, social media presences, apps and tools that are provided by many different organisations across government, industry and not for profit sectors. The space can be very confusing for people who are not intimately familiar with the many competing brands.*

A scan of the digital ecosystem revealed 116 websites and apps, most of which had three or more associated social media channels (Figure 1). As such around 350–400 digital websites and apps were inventoried, managed by a wide variety of organisations, some national, and some specific to one Australian state or territory.

![Figure 1](image.png)

*Figure 1. Digital ecosystems related to invasive species in Australia, 2018. Source: McManus and Roper 2018.*

Many of these websites and apps failed to provide clear structure and navigational cues for landholders and land managers to find management information specific to their on-ground challenges. However, a number provided exemplars for PestSmart with clear pathways to very useful and well-structured information.
The audit also revealed a wide range in the quality of information and tools available for invasive species issues: from extremely poor and out of date, to extremely good and up to the minute. Poor-quality digital presences tended to:

- have content that was very bureaucratic or technical and not written in a structured, friendly or usable way
- use very poor or outdated approaches to website/webpage design and navigation
- show a lack of innovation in how the tools had been developed, particularly relating to their features or ability to be shared with others.

The audit found many issues and gaps in the digital ecosystem relating to invasive species, especially from the point of view of key audiences such as landholders and land managers:

- The ecosystem was enormously complex, presenting a multitude of pathways to information, systems and tools.
- The user journeys—that is, the step-by-step journeys that users take when interacting with a website—for people looking to manage issues on-ground were unclear or fragmented.
- There was a void in the weeds space, with no coordinated national resource for people who were looking to directly manage weed issues.
- In many different websites and apps—especially apps—information and functionality were duplicated.
- There was a lot of information about policies and management activities but clear pathways for people looking for management information to act on was missing.
- The ability of land managers to engage with each other to learn, share and coordinate their efforts to solve on-ground issues was limited by the fragmented resources available.

**RECOMMENDING THE CENTRE’S WAY FORWARD**

After the audit, the consultants recommended approaches and activities to inform the Centre’s next steps:

1. Map the user journeys for the main audiences and identify the optimal journeys for each.
2. Design the PestSmart platform according to service design principles and approaches to provide optimal user journeys.
3. Develop tools that provide information and services that people need when looking to identify, manage or report on invasive species.
4. Work collaboratively with all relevant entities that manage key websites and apps to help improve pathways for users to information, tools and services.
5. Promote the new services and tools using both broad marketing and communication activities across the digital ecosystem, and target specific digital channels as appropriate.
METHOD

When the Centre began this project, it was envisaged that weeds might be incorporated into the PestSmart website as a one-stop-shop for invasive species information. However, following stakeholder discussions it became apparent that a dedicated weeds website would be a more effective solution.

THE BEGINNINGS OF A WEEDS WEBSITE

The Centre engaged Dr Rachel Melland in 2018 to support the planning and development of a national weeds portal, and in 2019 engaged the user-experience and research consultancy Briarbird to create a framework for upgrading the existing PestSmart website.

Dr Melland subsequently:

- met with members of the Weeds Subcommittee of the Environment and Intergovernmental Committee in August 2018
- developed and initiated an online survey to gather information on the need for a national weeds portal (open August to September 2018; 232 respondents)
- ran a face-to-face workshop with stakeholders at the 21st Australasian Weeds Conference in September 2018 (approximately 50 attendees)
- produced a report in collaboration with Dr Ian McDonald from the Centre in December 2018.

The report included a preliminary website framework and was used to initiate discussions with staff from the Atlas of Living Australia1 about how to combine digital distribution weed maps (see Melland and McDonald 2018 for more information).

During 2019, a formal partnership between the Centre and the Atlas of Living Australia was established. This enabled the profiles of 398 weed species important to the work of the Centre to be included on the Atlas of Living Australia’s website and ensure their ongoing maintenance through a national database.

Also in 2019, a draft strategy for the national weeds website (Melland and McDonald 2019) was developed by Dr Melland and Dr McDonald. The strategy outlined the various needs and priorities during an establishment phase (1–3 months), the short term (over 6–9 months from August 2019), the medium term (9–24 months), the longer term (2–5 years), a maintenance phase and a legacy phase.

BUILDING A BETTER PESTSMART WEBSITE

The Centre engaged Briarbird’s Jonathon Roper and Michael McManus in 2019 to undertake:

1. user research and development of a framework for a new PestSmart website for PestSmart
2. identification of specific audience personas and a map of the journeys these audiences could be expected to make within the PestSmart website.

---

1 a collaborative, digital, open web infrastructure that pulls together Australian biodiversity data from multiple sources, making it accessible and reusable
USER RESEARCH UNCOVERS WHAT IS GOOD, WHAT IS MISSING

Briarbird conducted two separate but related research activities:

- an online survey of 256 current and potential users, conducted from 17 February to 11 March 2019
- six telephone interviews with program coordinators and pest controllers, undertaken from 1–5 April 2019.

The survey and interviews focused on five research questions:

1. What are the main challenges for people involved with pest animals?
2. Who is using PestSmart?
3. What do people find useful on PestSmart?
4. What do people think of PestSmart?
5. What improvement or changes do people want to PestSmart?

Briarbird uncovered five common themes from their user research (Figure 2).

---

![Figure 2. Common themes relating the PestSmart website arising from user research conducted by Briarbird. Source: Roper and McManus 2019b.](image-url)
From this research and their own observations of the website, Roper and McManus (2019b) identified four strategies to improve the PestSmart website to help people find and act on the information they need:

1. set clear audience goals for the website
2. improve design, discoverability and usability
3. improve content quality and scope
4. improve existing features and add new ones.

The consultants also proposed goals relevant to four key audience segments:

- make it easy for *landholders and land managers* to get simple, comprehensive information on how to manage and control pests, and who to contact to get help
- enable *coordinators and stakeholders* to easily access the tools and resources they need to encourage local, coordinated pest action in their areas
- highlight the impact of pests on Australia and the research that supports the management and control methods for *stakeholders and general public audiences*
- provide simple access to a rich repository of articles for *researchers and other audiences* where relevant research can be discovered and leveraged.

A website framework was proposed by the consultants to detail the streams of work required to achieve the recommended changes and improvements to the PestSmart website, including:

- building a business case for the website that evaluated resourcing and governance
- reviewing the platform and its capabilities
- improving the user experience and site content
- developing detailed functional requirements, undertaking priority improvements and investigating opportunities for integrating related services.

Briarbird facilitated a workshop with representatives of three of the four main audience groups identified in the user-research phase of the PestSmart project—land managers, coordinators and researchers—to support the co-design activities for the website.

Following the workshop, the consultants developed personas, journey maps and wireframes to ensure the PestSmart website redevelopment kept the user in mind.

**PERSONAS KEEP FOCUS ON USERS’ PAINS, GAINS AND OPPORTUNITIES**

Briarbird developed four personas based on the research insights to help the web designers understand the range of audience needs and aspirations:

- *Sally*, an engaged land manager
- *Alan*, a sceptical landowner
- *Birgitte*, a natural resource management coordinator
- *Pat*, a researcher.

Figures 3 to 6 describe the characteristics, ‘pains’ experienced, gains desired and opportunities anticipated by these four personas.
Figure 3. Sally persona, an engaged land manager. Source: Roper and McManus 2019a.

Characteristics
- Engaged with issues around pest animals
- Follows the rules when it comes to pest animal management
- Willing to put time and resources into best practice management
- Happy to work with neighbours and groups in the areas

Gains They Desire
- Confidence that they are being good custodians by using best practice management techniques
- Help from local, state and federal bodies

Pains They Experience
- Worried about long-term impact of incursions
- Finds it difficult to find the right help and information
- Frustrated with inaction of neighbours

Opportunities
- Communications about relevant updates
- Quick access to information about identification and management
- Clear and direct channels to contact people

Figure 4. Alan persona, a sceptical landowner. Source: Roper and McManus 2019a.

Characteristics
- Convinced he knows best when it comes to managing his land
- Unaware of latest pest animals impacts and management techniques
- Not convinced that there is a problem he needs to act on

Gains They Desire
- Cheaper, faster and easier ways of managing pests
- Greater productivity and profit
- Minimal contact with bureaucracy and regulations

Pains They Experience
- Annoyed that people are telling him what to do on his farm
- Frustrated with policies and process that restrict his activities
- Finds it hard to prioritise pest animal management

Opportunities
- Quick and easy to use search and navigation
- Information that helps him minimise time and money spent
- Evidence of the benefits of best practice
Figure 5. Birgitte persona, a natural resource management coordinator. Source: Roper and McManus 2019a.

Figure 6. Pat persona, a researcher. Source: Roper and McManus 2019a.
OPTIMAL USER JOURNEYS MAPPED TO DESIGN OPTIMAL USER EXPERIENCE

During the consultants’ workshop with representatives from the three of the four main audiences, participants were taken through a journey-mapping exercise. The process mapped the things that happened along their separate journeys according to a specific event scenario (for example, a dog attack for a landholder, and wild dog incursions for a coordinator). Their feelings as they moved through the exercise were also captured.

From the workshopped journey maps, the consultants consolidated individual journey maps for land managers, coordinators and researchers. These captured the various journey attributes—tasks, feelings, questions and touchpoints—that users experienced during the stages of their journey (Figure 7).

<table>
<thead>
<tr>
<th>LAND MANAGER</th>
<th>JOURNEY STAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOURNEY ATTRIBUTES</td>
<td>Identify</td>
</tr>
<tr>
<td>Tasks</td>
<td>Feelings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COORDINATOR</th>
<th>JOURNEY STAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOURNEY ATTRIBUTES</td>
<td>Plan</td>
</tr>
<tr>
<td>Tasks</td>
<td>Feelings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RESEARCHER</th>
<th>JOURNEY STAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOURNEY ATTRIBUTES</td>
<td>Plan</td>
</tr>
<tr>
<td>Tasks</td>
<td>Feelings</td>
</tr>
</tbody>
</table>

Figure 6. Journey attributes and stages for each user type. Source: Roper and McManus 2019a.
RESULTS

WEEDS AUSTRALIA WEBSITE

The Weeds Australia beta website (Figure 8) was launched on 13 April 2020. From its launch date through to 30 September 2022, it was visited by 205,820 users with 723,039 pageviews, 272,311 sessions, and an average session duration of 02:28. Over this period, 86.8% of visitors were new to the site.

Nearly seven out of every 10 users—146,938 users—accessed the site from capital cities: Sydney (54,746 users), Melbourne (38,132 users), Brisbane (29,498 users), Perth (13,223 users) or Adelaide (11,339 users).

The daily user traffic for the Weeds Australia website, from its launch date to 30 September 2022, is presented in Figure 9.

Figure 7. Weeds Australia home page: weeds.org.au

Figure 8. Daily use of the Weeds Australia website, 13 April 2020 to 30 September 2022. Source: Google Analytics.
PESTSMART WEBSITE

The upgraded PestSmart website (see Figure 10) was launched on 24 August 2020. From its launch date through to 30 September 2022, it was visited by 415,947 users with 717,232 pageviews, 510,940 sessions, and an average session duration of 01:11. Over this period, 89.4% of visitors were new to the site.

Nearly half of the users—equivalent to 210,004 users—accessed the site from capital cities: Sydney (70,491 users), Melbourne (54,861 users), Brisbane (39,767 users), Perth (23,476 users) or Adelaide (21,409 users).

The daily user traffic for the PestSmart website, from its launch date to 30 September 2022, is presented in Figure 11.
COMMUNITY INVASIVES ACTION WEBSITE

The Community Invasives Action website (see Figure 12) was launched on 1 August 2020. From its launch date through to 30 September 2022, it was visited by 2,379 users with 3,754 pageviews, 3,011 sessions, and an average session duration of 00:40. Over this period, 90.3% of visitors were new to the site.

Figure 11. Community Invasives Action website, community.invasives.com.au

Just over half of the users—1,372 users—accessed the site from capital cities: Melbourne (439 users), Sydney (426 users), Brisbane (246 users), Perth (157 users) or Canberra (124 users).

The daily user traffic for the Community Invasives Action website, from its launch date to 30 September 2022, is presented in Figure 13.

Figure 12. Daily use of the Community Invasives Action website, 1 August 2020 to 30 September 2022. Source: Google Analytics.
HARD COPY GLOVEBOX GUIDES SUPPLEMENT PESTSMART WEBSITE

Since the launch of the new PestSmart website, orders for hard copy Glovebox Guides for managing vertebrate pest animals have been solid, with 9,200 orders in FY21 and 9,728 in FY22. People placing orders include local government, state and territory government departments and agencies; pest management groups; schools; contractors and other individuals.

Glovebox Guides were also distributed by the Centre’s staff and National Coordinators at various national and state conferences along with other Centre fact sheets and materials (see Figure 14).

Figure 13. Examples of Glovebox Guides for managing vertebrate pest animals and Centre fact sheets

NEW DIGITAL STRATEGY AND ADOPTION PLAN TO DRIVE ADOPTION OF BEST PRACTICES

The Centre developed a digital strategy in 2015 to support the ongoing development of FeralScan, the development of the National Digital Information Portal—that we now know as the Weeds Australia, PestSmart and Community Invasives Action websites—and the WeedScan weed identification and reporting app.

In 2022 a new National Digital Information Portal Adoption Plan was developed for the Centre by Dr Rohan Rainbow (Crop Protection Australia). This strategy and adoption plan was designed to drive and accelerate the adoption of invasive species best practice using digital management tools and control strategies developed through the Centre and other organisations (Rainbow 2022).

The National Digital Information Portal Adoption Plan outlined:

- the problem and purpose
- the global landscape for digital opportunity
a digital case study—FeralScan

the principal drivers of digital tool adoption

a digital adoption strategy map end-user focus

implementation options to deliver adoption impact and value

a digital adoption implementation plan.

The plan identified four key implementation requirements that would drive adoption because fulfilling them would deliver impact and value for end users:

• data reliability and security
• targeted control measures
• functionality and interoperability
• real-time capability.

The National Digital Information Portal Adoption Plan will help inform the Centre’s decision-making about developing its digital assets over the next five years.

DIGITAL PORTAL CRUCIALLY SUPPORTS THE CENTRE’S NATIONAL COORDINATORS

This digital information portal project was integral to effectiveness of the Centre’s National Coordinator Model which, over the past five years, has made (and continues to make) significant positive contributions to invasive species management. The model has three interdependent parts:

1. best practice management toolkits (available on the new Weeds Australia website and upgraded PestSmart website that formed the basis of this project)
2. National Coordinators to support people to manage wild dogs, feral deer, and feral cats and foxes
3. the Centre’s community pest monitoring and management platform (Feralscan and, soon, WeedScan).

The work of the National Coordinators has enabled the Centre to:

• increase community awareness of invasive species and their impacts
• increase and improve adoption of best practices to manage invasive species
• support greater collective action and community engagement to manage invasive species
• improve coordination, communication and prioritization, which leads to more effective resource allocation in invasive species management and RD&E.
DISCUSSION: TRUST IN SCIENCE, SCIENTISTS, INSTITUTIONS, INFORMATION AND TECHNOLOGY

As good as the Centre’s suite of digital assets now are—the Weeds Australia, PestSmart, Community Invasives Action, FeralScan and WeedScan websites and apps—their impact is only as good as their use and uptake by people across Australia.

To maximise the impact of the Centre’s digital assets and its communication, we need to pay attention to Australians’ trust in science, scientists, institutions, information and technology (tech). A summary of recent, relevant survey results follows.

3M STATE OF SCIENCE INDEX 2022

3M have undertaken a global State of Science Index since 2018. In 2022, 3M surveyed 1,000 respondents from the general population in each of 17 countries, including the United States, Canada, the United Kingdom, China, India, Brazil and Australia (3M 2022a). The 20-minute survey was conducted through a combination of offline and online interviews.

As well as a global report, 3M also summarised results specific to Australia (3M 2022b). Its key findings for Australia were that:

- **Fifty per cent of Australians felt that “science is very important to my everyday life”—a drop of two per cent from 2021; younger generations of Australian were more likely to agree that science was very important to their everyday lives (56% among gen Z and millennials, compared to 46% among gen X and baby boomers).**

- **When it comes to scientific facts, Australian were more likely to trust traditional media—trust in social media was 35% compared to 71% for traditional news.**

- **Optimism for the future of science is strong—87% of Australians agree that in the future, the world will be more dependent on scientific knowledge than ever before; 43% of Australians believe they will have a greater appreciation for science five years from now.**

2022 EDELMAN TRUST BAROMETER

The Edelman Trust Barometer is now in its twenty-second year. Edelman conduct an annual online survey that in 2022 encompassed 28 countries, more than 36,000 respondents, and more than 1,150 respondents per country (Edelman 2022).

Australia’s general population lost a massive six points from 2021 to 2022—one of the world’s biggest losses (from 58 in 2021 to 53 in 2022).

- **No institution was trusted in Australia, with trust declining from 2021 across business (now 58 points, a five-point drop), NGOs (now 58, a four-point drop), government (now 52, a nine-point drop) and media (now 43, an eight-point drop).**

- **Global concern over fake news was at an all-time high, with 73% of Australians worrying about false information or fake news being used as a weapon.**

- Australians’ trust in scientists was second highest to co-workers at 71%. However, the trust in scientists had dropped six per cent from the previous year.
The report also found that information quality is now the most powerful trust-builder across institutions. The potential trust gain associated with good-quality information was 3 points for business, 3.2 points for NGOs, 6.1 points for government and 6.6 points for media.

DIGITAL NEWS REPORT: AUSTRALIA 2022

The News and Media Research Centre at the University of Canberra is the Australian partner for a long-running international survey by Reuters Institute for the Study of Journalism based at the University of Oxford. It is also the author of the Digital News Report: Australia (Park et al. 2022).

Park et al. 2022 found that concern in Australia about misinformation and disinformation was steady (at 64%) but much higher than the global average (at 56%).

The authors also found that, despite a series of natural disasters over the past 12 months, Australians are among the least interested in news about the environment and climate change. Only 36% of Australians showed interest in environment and climate change news, compared to the global average of 41%.
CONCLUSION

The Centre for Invasive Species Solutions has successfully delivered this project to develop a digital information portal for national invasive species management.

The components of the Centre’s digital information portal—Weeds Australia, PestSmart, Community Invasives Action—were co-designed with the users of these websites and apps. Each have found a ready, interested audience, supported by information in hard copy Glovebox Guides for vertebrate pest species and a growing number of Centre fact sheets.

The digital information portal is a critical resource that backs up and enables the ongoing effectiveness of the Centre’s National Coordinator Model, which strives to accelerate the adoption of best practices in vertebrate pest and weed planning and management.

Investment by the Centre in a new National Digital Information Portal Adoption Plan will inform its decision-making about developing its digital assets over the next five years.

However, work on the Centre’s digital assets does not stop at the conclusion of this project. Ongoing improvements will be made to functionality, content and the integration of data between these assets; and in a way that maintains the data privacy of users and manages any cybersecurity risks. The Centre will also work to improve the search engine optimisation of its websites; and to promote its digital assets across its own communication channels, social media advertising and the media.

While this work continues, the Centre will also consider and support the trust Australians have in science, scientists, and institutions—which global surveys show is changing year to year.

Because the Centre strongly focuses on making factually correct, best practice information on pest animals and weeds available, it is as well positioned as any Australian non-government organisation to build Australians’ trust in its operations—and to make significant inroads on managing pest animals and weeds across the country.
REFERENCES

Publications arising from this project are shown in bold. Other CISS or IA CRC publications are shown with an *

3M (2022a) State of Science Index 2022: Global Report multimedia.3m.com, accessed 3 November 2022.


McManus M and Roper J (2018) PestSmart – Audit of Digital Sector, Briarbird research report prepared for the Centre for Invasive Species Solutions. *


Roper J and McManus M (2019a) PestSmart: Personas and user journeys, Briarbird report prepared for the Centre for Invasive Species Solutions. *

Roper J and McManus M (2019b) PestSmart user research and website framework, Briarbird report prepared for the Centre for Invasive Species Solutions. *