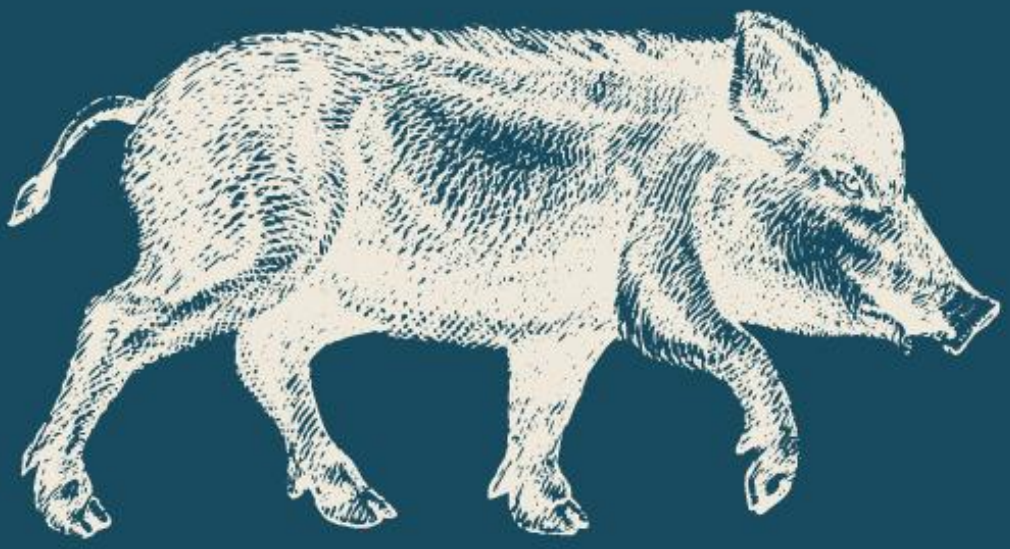

NATIONAL FERAL PIG CONFERENCE 2025

24-26 March
Mantra on View, Surfers Paradise

feralpigs.com.au/national-feral-pig-conference-2025

Getting the fundamentals right

Conference Proceedings

Day 1 - Monday 24 March	
4.00-8.30pm	Registration Open
5.00-6.30pm	**Opening Plenary** Chair: John Gavin, Remarkable NRM, Independent Chair National Feral Pig Action Plan (NFPAP) Implementation Committee
5.00pm	**Welcome to Country**
5.10pm	**Official Opening: The Hon Julie Collins, Minister for Agriculture, Fisheries and Forestry**
5.15pm	**Gold sponsor presentation: Barry Kelly, Pigbaitta**
5.20pm	**Jim Hone:** Managing feral pig damage for production and biodiversity
6.05pm	**Sheriden Morris:** The pathway forward for feral pig control: Integrated pest management (IPM) and funding
6.30-8.30pm	Welcome Reception & Networking Function — Sponsor: ACT Government
Day 2 - Tuesday 25 March	
8.00am	Registration Open
8.30am	**Welcome to Queensland: The Hon Tony Perrett, Minister for Primary Industries, Queensland**
8.40am	**John Gavin and Heather Channon**: National Feral Pig Action Plan Update – Priorities, progress and future directions
9.15-10.15am	**Session 1 - Effective regional coordination and collaboration** Chair: Heather Channon, National Feral Pig Management Coordinator Program, Australian Pork Limited
9.15am	**Bec Gray:** Pig picture thinking: driving statewide coordination for feral pig management
9.40am	**Angie Reid**: Collaboration for positive outcomes in feral pig management on Indigenous lands and remote northern Australia
10.05 am	**Rhiannon Ellis:** The Queensland Feral Pest Initiative is contributing to the fight against feral pigs: Grants for landscape-scale, cross tenure coordination, and innovation and diversification of control tools and techniques + *poster*
10.10am	**John Scriven:** Strengthening biosecurity preparedness and protection of wetlands and biodiversity in the Darling Downs & South West Queensland by the suppression of feral pigs
10.15am	Morning Tea — Sponsor: Animal Control Technologies Australia
10.45am-12.15pm	**Session 2 - Effective regional coordination and collaboration (Cont.)** Chair: Mark Hogno, Carpentaria Land Council Aboriginal Corporation
10.45am	**Linda Vernon:** A zone-based approach to feral pig management: Lessons from the Mid West demonstration site, Western Australia
11.10am	**Chris Gaschk:** Spatially assisted aerial shooting (SAAS) - translating feral pig habitat preferences into improved on ground outcomes
11.25am	**Graeme Oats:** Experience and effort is never futile: lessons learned from managing feral animal impacts in the Burdekin Shire
11.40am	**Matthew Pauza:** Pigs of the Roaring 40°s, the unique and emerging challenges of feral pig (*Sus scrofa*) management in Tasmania
11.55am	**Warddeken Land Management:** Remote pig trapping and monitoring in Arnhem Land
12.10pm	**Linton Staples:** PIGOUT® Econobait 1080 long life feral pig bait for feral pig management
12.15pm	Lunch — Sponsor: Hunter Land Management
1.00-2.25pm	**Session 3 – Harnessing People Power** Chair: Sam Armstrong, Agriculture Victoria
1.00pm	**John Nolan:** Harnessing People Power
1.25pm	**Jamie Werner:** Obtaining social license for feral pig management in a unique environment. Inviting Iwi (Indigenous) to the decision-making table
1.40pm	**Darren Marshall:** Ten years of working with Santos GNLG to control and research feral pig populations to improve landscapes scale nil-tenure control
1.55pm	**David Worsley:** Landholder versus Government pig control. Two case studies of feral pig control conducted by Northern Tablelands Local Land Services, NSW

2.10pm	**Regional Coordination:** Panel Discussion. Heather Channon, Australian Pork Limited; Sam Armstrong, Agriculture Victoria; Bec Gray, NSW Local Land Services; John Scriven, South West Regional Organization Councils; Angie Reid, North Australian Indigenous Land and Sea Management Alliance Ltd. Chair: Karen Moloney, Department of Agriculture, Fisheries and Forestry
2.45pm	Afternoon Tea Sponsor: Centre for Invasive Species Solutions
3.15–4.10pm	**Session 4 - Harnessing People Power (Cont.)** Chair: Matthew Gentle, Biosecurity Queensland
3.15pm	**James Templeton:** Bringing the sounder together: stakeholder collaboration and engagement insights from the Otways feral pig program
3.40pm	**Rachel Rand:** Recognised Biosecurity Groups: The importance of community engagement and supporting landholders in invasive species control
3.55pm	**Tony Lockrey:** Estimating economic impacts of feral pigs to grain growers
4.10pm	**Land Manager:** Panel Discussion. Brendan Taylor, AgForce Queensland Grains President, Dalby QLD; Tony Lockrey, Moree NSW; Dave Worsley, Nullamanna, NSW. Chair: Darren Marshall, Centre for Invasive Species Solutions
5.00pm	Break
6.30pm	Pre-dinner drinks
7.00-9.30pm	**NFPC Conference Dinner** **Nosh Restaurant, Mantra on View** Sponsor: Pigbaitta Pty Ltd
Day 3 - Wednesday 26 March	
8.00am	Registration Open
8.30-10.35am	**Session 5 - Risk mitigation, decision making and continuous improvement** Chair: Justin Perry, North Australian Indigenous Land and Sea Management Alliance Ltd, NFPAP Scientific Advisory Panel Chair.
8.30am	**Andrew Bengsen:** From uncertainty to action: disease surveillance and response in feral pigs
8.55am	**Troy Crittle:** Do the worst first - put your pig control in order for maximum impact
9.10am	**Peter Fleming:** Catch per unit effort analysis of a local feral pig control program: suggestions for monitoring and continued effort
9.25am	**Marietta Matasia**: Indigenous-led collaboration and consistent data collection to protect marine turtles from feral pig predation in Western Cape York
9.40am	**Adam Quinn:** Insights on delivering integrated pig control programs in highly restricted areas, to stakeholders with differing decision drivers
9.55am	**Richard Bradhurst:** Development of camera trap surveillance to detect feral pigs at piggeries
10.10am	**Linton Staples:** HOGGONE® meSN feral pig bait controls USA wild hogs but spilled bait can pose risk to small birds in winter
10.25am	**Braden Riles:** Towards effective feral pig control on the Yampi Sound Training Area (Kimberley, Western Australia) + *poster*
10.30am	**Andrew Williams:** Firearms high-risk areas: perception vs reality
10.35am	Morning Tea Sponsor: INLOC
11.00am-1.00pm	**Session 6 – Risk mitigation, decision making and continuous improvement (Cont.)** Chair: Narelle Dybing, National Feral Pig Management Coordinator Program, Australian Pork Limited
11.00am	**Brendan Cowled and Rebecca Ambrose:** Pig carcass decomposition dynamics: Insights into carcass disposal for emergency animal disease management
11.25am	**Joanne Walker:** Applying One Health to feral pig management in Australia: challenges and opportunities
11.35am	**Richard Bradhurst:** Modelling the potential for spillover transmission of emergency animal disease between feral pigs and livestock
11.45am	**Jens Froese:** A national map and dataset of feral pig current distribution in Australia (2024)
11.55am	**Tatiana Proboste:** Unravelling the swine web: Decoding feral pig networks for disease prevention in Australia
12.05pm	**Deane Smith:** Feral pig (*Sus scrofa*) activity areas across Australia for integration into disease spread models

12.15pm	**Andrew Morton:** Picking the low hanging fruit, practical applications of distribution modelling and telemetry datasets
12.25pm	**Peter Hamnett:** Hit them so hard they can't get backup: population modelling to optimise harvest strategies for feral pig eradication on Kangaroo Island
12.35pm	**Linton Staples:** Adapting feral pig management technology to a potential depopulation need for domestic pigs in piggeries
12.40pm	**Q&A session**
1.00pm	Lunch — Sponsor: Queensland Government
1.40-3.30pm	**Session 7 – Keeping up with Change** Chair: Andrew Bengsen, NSW Department of Primary Industries and Regional Development
1.40pm	**Justin Perry and Jack Hill:** Developing an ACCU Scheme method to manage feral ungulates in wetlands
2.05pm	**Tarnya Cox:** Achieving rapid removal and local eradication of feral pigs: methods to improve impact and exotic disease management outcomes
2.30pm	**Valerie Hager:** Biodiversity enhancements from controlling feral pigs, buffalo and cattle in wetlands in Australia
2.45pm	**Stephen Frankenberg:** Genetic biocontrol options for feral pigs
3.00pm	**Matt Gentle:** Exploring the use of thermal in aerial culling in north Queensland
3.15pm	**Nina Scarpelli:** Passive acoustic detection: a new tool in the feral pig monitoring toolbox
3.30pm	**Setting future direction:** Where to from here John Gavin, Remarkable NRM, Independent Chair NFPAP Implementation Committee
3.50pm	**Closing comments and conference close**
4.00-4.30pm	**Afternoon Tea:** Grab and Go — Sponsor: Greyman Ops
***Invitation only* – Thursday 27 March**	
8.30am-12.00pm	*For Indigenous land management groups or by invitation only, RSVP required to angie.reid@nailsma.org.au.* **Protecting Country Against Invasive Species – Indigenous Feral Pig Workshop sponsored by NAILSMA.** Peppers Soul, Surfers Paradise

Poster presentations

Brad Williams, Stacey Koprdova, and Evelyn Nicholson: Feral Pigs on Gunditjmara Country
Gunditj Mirring Traditional Owners Aboriginal Corporation, Victoria

Gavin Melgaard and Mick Freeman: Engaging with communities for feral pig control
Department of Energy, Environment and Climate Action, Victoria

We would like to thank our Sponsors and exhibitors

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Foreword from our Implementation Committee Chair

Welcome to the 2nd National Feral Pig Conference!

The theme of this year's Conference, *Getting the Fundamentals Right*, reflects the importance of strengthening the foundations of feral pig management and the attention to detail required by land managers to optimise outcomes from management effort. Through our four sub-themes, Effective Regional Coordination and Collaboration, Harnessing People Power, Risk Mitigation, Decision Making, and Continuous Improvement, and Keeping Up with Change, the critical aspects of successful management strategies will be explored.

This Conference is a culmination of the engagement and communication efforts from the National Feral Pig Action Plan (NFPAP), emphasising the need for ongoing knowledge sharing and collaboration. We aim to foster more effective and efficient solutions to reduce continuing feral pig impacts across Australia by providing a forum to bring experts and stakeholders together from all states and territories.

The program has been designed to provide ample opportunities to meet and network with like-minded individuals and organisations. This event will enable delegates to exchange ideas, learn from one another and form lasting partnerships to help improve how management programs are conducted to reduce feral pig impacts and their populations.

I encourage you to use the social functions to fully engage and connect with others, including those you may not have met before. By doing so, we hope this Conference inspires and generates new ideas, fosters partnerships and provides you with valuable insights that can be applied in your work moving forward.

A special thank you is extended to the Conference Organising Committee, which includes members of the NFPAP's Scientific Advisory Panel (SAP) and Indigenous Advisory Panel (IAP), for their dedication and hard work in making this event possible and to the Implementation Committee for their invaluable feedback and support.

I look forward to the fruitful discussions, innovative ideas and the overall success of the Conference.

I wish you an enjoyable Conference and hope you find it inspiring!

Best wishes,

John Gavin

Implementation Committee		Conference Organising Committee	
John Gavin	Remarkable NRM (Chair, IC)	Dr. Justin Perry	North Australian Land and Sea Management Alliance (SAP Chair)
Dr Justin Perry	North Australian Land and Sea Management Alliance (SAP Chair)	Dr. Peter Adams	WA Department of Primary Industries and Regional Development (SAP)
Mark Hogno	Carpentaria Land Council Aboriginal Corporation (IAP Chair)	Dr. Andrew Bengsen	NSW Department of Primary Industries and Regional Development (SAP)
Margo Andrae	Australian Pork Limited	Dr. Jens Froese	CSIRO (SAP)
Romy Carey	Northern Territory Cattlemen's Association	Dr. Matthew Gentle	Department of Agriculture and Fisheries QLD (SAP)
Richard Evison	Westpork	Jenny Lawler	KAM Events
Quentin Hart	NSW Department of Primary Industries and Regional Development	Darren Marshall	Centre for Invasive Species Solutions (IC, SAP)
Daniel Lewer	Hunter Land Management	Kate Murphy	KAM Events
Darren Marshall	Centre for Invasive Species Solutions	Jamie Petrie	Gladstone Water Board
Karen Moloney	Department of Agriculture, Fisheries and Forestry	Preethi Prayaga	Burdekin Shire Council
Dave Worsley	Land manager representative, NSW	Bradley Power	Animal Control Technologies (Australia)
Dr. Heather Channon	National Feral Pig Management Co-ordinator	Dr Angie Reid	North Australian Land and Sea Management Alliance (IAP)
Dr. Narelle Dybing	National Feral Pig Program Support Officer	Dr. Heather Channon	National Feral Pig Management Coordinator
		Dr. Narelle Dybing	National Feral Pig Program Support Officer

Contents

Managing feral pig damage for production and biodiversity

Jim Hone

University of Canberra, Bruce, ACT, Australia

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Abstract

Past feral pig control studies emphasised damage estimation, pig management effectiveness, and distribution and abundance. These are essential backgrounds for the future. For more effective and efficient future management of damage, a key challenge is the estimation of the relationship between management efforts (such as costs) and outcomes (such as crop yield, livestock production, biodiversity). Positive effort-outcome relationships have been demonstrated for both the absence of ground rooting and for bird diversity for feral pig control efforts in Namadgi National Park (ACT) in south-eastern Australia. Studies of various other animals have shown that such relationships occur at differing scales from across countries, and across farms within one region. Examples that are relevant and useful can be drawn from the management of fox kills of lambs and frequency of their control, management of poaching of black rhinoceros in parts of Africa, and the management of bovine tuberculosis (bTB) in livestock and wildlife in New Zealand. Future management should include a conceptual diagram of efforts, outcomes and aims to provide a clear overview of activities.

Biography

I am an Emeritus Professor at the University of Canberra. I study why wildlife populations vary in abundance and what causes such variation. The wildlife species studied include feral pigs in temperate and tropical Australia, to barn owls and badgers in UK, to lynx and snowshoe hares in Canada. The research includes assessing dynamics and control of wildlife disease of economic importance such as foot and mouth disease, classical swine fever, porcine gastroenteritis, and bovine tuberculosis.

The pathway forward for feral pig control: Integrated Pest Management (IPM) and funding

Sheriden Morris

Reef and Rainforest Research Centre Limited, Cairns, QLD, Australia

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Abstract

There has been progress towards an effective Integrated Pest Management approach to the protection of commercial and environmental assets from feral pig impacts.

Rural and remote regions of Australia are particularly vulnerable to impacts from feral pigs. Concerns over biosecurity, crop damage and environmental damage have been well articulated over the years. Over the same period, there have been many well intended, albeit fragmented approaches to feral pig control. A good deal of local knowledge and scientific observation has also acquired over this time.

The focus now is to create a cost-effective targeted platform that will enable governments to invest in the protection of commercial, environmental and cultural assets through placed-based feral pig control. Previous examples of plague locust management and Crown-of-Thorns Starfish control on the Great Barrier Reef map the way forward. This presentation will outline the steps needed to achieve the funding and knowledge required to attract the investment needed for asset protection from this devastating pest.

Biography

Sheriden Morris has always strongly believed in intelligent, sustainable development using the region's tropical expertise – the knowledge of living, building and working most effectively in the tropics. Since 2006, she has been the Managing Director of the Cairns-based not-for-profit company, Reef and Rainforest Research Centre (RRRC). Under her leadership, the RRRC has successfully attracted more than $400 million in grants and investment to support environmental research and development projects in northern Australia.

Sheriden is also Chair of the CRC for Developing Northern Australia and Deputy Chair of Citizens of the Great Barrier Reef.

An extensive contributor to land and sea management policy over many decades, Sheriden has also spearheaded the development and implementation of an innovative aid development program on Australia's northern borderlands with Papua New Guinea. In 2023, the impact of her work was recognised by the receipt of national Banksia Awards in two categories (Biodiversity, and Agriculture & Regional Development). Sheriden and her husband live on the family farm at Babinda, just south of Cairns.

National Feral Pig Action Plan Update – Priorities, progress and future directions

John Gavin[1] and Heather Channon[2]

[1] *Remarkable NRM, Yungaburra, QLD, 4884, Australia*
[2] *Australian Pork Limited, National Feral Pig Action Plan, Canberra, ACT, Australia*

Corresponding author: Heather Channon, heather.channon@feralpigs.com.au

Feral pigs are a significant risk to Australia's unique environment, our $90 billion agricultural sector, biosecurity, cultural heritage and values, and are regarded as one of Australia's worst invasive species. With reports of growing feral pig populations from land managers across Australia in response to favourable seasonal conditions, their impacts are also escalating. In most regions, challenges with their management have not been overcome. Inconsistency and variability in how best practice feral pig management is being conducted, low involvement of land managers in locally coordinated and collaborative management programs and difficulties in assessing success of control efforts are major constraints. This reflects that this issue is as much about people as it is about feral pigs.

The *National Feral Pig Action Plan 2021-2031* (the Plan) aims to reduce the impacts of feral pigs on Australia's environment, agriculture, cultural, and social assets through coordinated, collaborative and sustained actions by land managers, with the goal of minimizing threats and risks by 2031. The Plan intentionally sets a long-term, ambitious vision to implement solutions to address this long-term problem. Consistent and sustained management efforts by land managers, applied on a landscape scale, cross tenure basis, have been demonstrated to be effective in reducing impacts from feral pigs. Demonstration sites were set up in December 2021 to highlight this to others. With less than 10% of land managers working collectively to manage vertebrate pests, change will not happen overnight. We have a long way to go to shift feral pig management from being reactive, individual, *ad hoc* and short term to becoming proactive, strategic, coordinated and collective.

Since October 2021, following the endorsement of the Plan by the National Biosecurity Committee, our activities have focussed on promoting and supporting land managers to work more closely together in coordinated ways, building linkages between all those dealing with feral pig impacts across Australia, advocating for new investment, sharing alternate management and research learnings, raising awareness of feral pig impacts, revising best practice management standard operating procedures and advocating the importance of monitoring and management planning. It is pleasing that some state governments now support regional/state coordinator positions to strengthen the Plan's delivery and promote collaborative management on a cross-tenure basis. We are proud of our achievements, whilst acknowledging that there is still so much that we all need to do for the Plan's vision to be realised and ensure that lasting improvements and tangible benefits will be delivered. We cannot afford to stop now and lose the momentum that has been generated.

Biography

John has over 25 years of demonstrated experience in community based natural resource management (NRM) operating within Australia (through positions based in NSW, SA, Qld and the NT) and the Solomon Islands. He is passionate about community empowerment and gets enjoyment and satisfaction from working with people through collaborative approaches to NRM. His extensive NRM experience includes developing policy and managing invasive vertebrate species, including feral pigs, through cross-jurisdictional and multi-sector programs. John is well recognised for his understanding of market approaches to incentivising land management outcomes, including emerging biodiversity markets. John is currently a Director of Remarkable NRM and chair of the National Feral Pig Action Plan Implementation Committee.

Heather Channon is leading the implementation of the National Feral Pig Action Plan, as Australia's first National Feral Pig Management Coordinator. In this role, Heather strives to engage with private and public land managers from across Australia to promote benefits from working together in coordinated ways and using all available control tools strategically to improve the effectiveness of feral pig control programs. Prior to her current role, Heather was General Manager, Research & Innovation at Australian Pork Limited and responsible for the delivery of research, development and extension priorities to support the ongoing viability Australian pork industry.

Pig Picture Thinking: driving statewide coordination for feral pig management

Bec Gray[1], Mark Lettfuss[2], Sheree Lyons[3]

[1] *Local Land Services, Calala, NSW, Australia*
[2] *Local Land Services, Braidwood, NSW, Australia*
[3] *Local Land Services, Coffs Harbour, NSW, Australia*

Corresponding author: Bec Gray, bec.gray@lls.nsw.gov.au

Abstract

Local Land Services is a regional-focused NSW Government agency consisting of 11 regions. We are NSW's on-ground support, working with farmers and land managers to help improve the productivity and sustainability of their land. We connect land managers with advice, training and networking opportunities to build capacity to improve agricultural productivity, control pest species and meet biosecurity obligations.

The NSW Government responded to persistent favourable seasonal conditions and the associated population expansion of feral pigs in 2023 with the announcement of $13 million funding for LLS to deliver the NSW Feral Pig Program, from October 2023 until 30 June 2024.

The aim of the program was to promote landholder participation in feral pig programs, reduce populations of high-density feral pigs in target areas and manage the impacts feral pigs cause to agricultural and environmental assets.

This funding was the catalyst for LLS to employ the first State Feral Pig Coordinator whose role is to support the delivery of the Feral Pig Program.

Centrally managing and coordinating the Feral Pig Program across 11 regions was a change in delivery for LLS, where previously programs were managed regionally, aligning with state-based strategic management plans.

Coordination was crucial for rapid program establishment and delivery of activities in a manner that not only satisfied the scope of the funding but delivered worthwhile and effective programs for NSW landholders.

Key achievements from the coordinated approach to feral pig management under this program include:

- LLS Biosecurity Officers engaging with increased numbers of landholders, encouraging more on-ground control such as baiting and trapping.
- Scaling up the delivery of skill building workshops and events to help landholders implement more effective programs.
- Enhancing LLS' media presence and communications campaigns to create awareness, educate and start conversations about feral pigs outside the usual context of agricultural production and farming.
- Expanding broadscale coordinated control across more of NSW.

Biography

Bec Gray is NSW's first Feral Pig Coordinator, a role established under the Feral Pig Program 2023-24. Her role assists with the delivery of the statewide Feral Pig and Pest Program. Bec has worked in invasive species management with Local Land Services since 2011, as a frontline Biosecurity Officer, Team Leader and Senior Projects Officer. The majority of her work has focused on the practical application of feral pig management programs and helping staff, farmers and land managers to plan and deliver more effective control programs. Bec is part of the Project Team led by Principal Program Manager Mark Lettfuss and includes Communications Officer Sheree Lyons.

Collaboration for positive outcomes in feral pig management on Indigenous lands across remote northern Australia

Angie Reid

North Australian Indigenous Land and Sea Management Alliance Ltd, Darwin, NT, Australia

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Abstract

The North Australian Indigenous Land and Sea Management Alliance's (NAILSMA) Protecting Country Against Invasive Species Program, funded by the Department of Agriculture, Fisheries and Forestry, supports Indigenous-led invasive species control on Country and builds capacity within Indigenous Ranger Groups (IRGs). Funded activities are chosen by IRGs based on what is important to them and how best they can care for Country to ensure long-term follow through of control activities. The program is currently funding 14 IRGs in northern Australia to conduct feral pig monitoring and/or control.

Some of the early successes of the program include aerial surveys for feral species over 2 Indigenous Protected Areas (IPA) totalling 17,000 km^2; 16 pig traps deployed; over 100 camera traps deployed; 3,808 pigs culled; over 90 ha of wetland monitoring and mapping; 2,000 ha feral sign ground surveys undertaken with all activities involving over 75 Indigenous rangers. These successes are largely attributable to functional collaborations between IRGs, which allow for resource pooling and on-ground knowledge exchange, and dedicated regional coordination roles through the Program that act as networking and knowledge brokers to connect resources to needs in remote northern Australia. We will share some of the successes and challenges of the Program as well as opportunities for further collaboration in the feral pig management space.

NAILSMA is an Indigenous led not-for-profit company with almost two decades worth of experience in delivering complex and challenging programs across north Australia. NAILSMA prioritises Indigenous leadership and aims to support and empower Indigenous people and communities to manage their land and sea country.

Biography

Dr Angie Reid is the Senior Project Coordinator for NAILSMA's Protecting Country Against Invasive Species Program. She came to Australia from the United States in 2015 to do a PhD on fire ecology and large feral herbivores working with an Indigenous Ranger Group in WA and Traditional Owners in Arnhem Land. Following her PhD, she decided to remain in Australia supporting Indigenous land management and worked as an Indigenous Protected Area Coordinator in the Great Sandy Desert for 4 years. Angie has over 15 years of experience in ecological research and land management.

The Queensland Feral Pest Initiative is contributing to the fight against feral pigs: Grants for landscape-scale, cross tenure coordination, and innovation and diversification of control tools and techniques

Rhiannon Ellis

Invasive Plants and Animals, Biosecurity Queensland, Toowoomba, QLD, Australia

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Abstract

The Queensland Government recognises that although feral pig control is a landholder responsibility, coordination through leadership and support is needed for all land managers, on both private and public lands. The Queensland Feral Pest Initiative (QFPI) is directly facilitating the best practice management of feral pigs across the state through Round 8. This round is providing a total of $3.163 million of state government funding to land managers and stakeholders to undertake effective regional coordination and collaboration and to keep up with change through innovation and diversification.

The QFPI is governed by an Oversight Group that includes representatives from government, industry, and community-based organisations. The group's function is to provide independent and strategic advice on the development, implementation and management of the QFPI, and help champion regional prioritisation, participation, cooperation and collaboration.

Round 8(a) of the QFPI has allocated $2.163 million for the employment of four feral pig management coordinators over three years. The two recipients have a combined total project footprint covering over 86% of Queensland (1,597,718.6 km^2) and will work collaboratively to deliver the following outcomes:

- increased stakeholder capacity and capability to undertake ongoing, effective feral pig management generally and during an exotic disease incursion;
- increased stakeholder capacity and willingness to collaborate to combat feral pig presence; and,
- improved volunteer, landholder, and industry engagement, knowledge and skills, and Indigenous employment and/or engagement.

Round 8(b) of the QFPI will allocate up to $1 million over three years for innovation in and the diversification of feral pig control tools and techniques. Due to the continual advancement of scientific and technological knowledge, historical practices to control feral pigs have become outdated or no longer meet acceptable community expectations, like the recent banning of yellow phosphorus (CSSP) in Queensland. This round aims to ensure a diverse and humane suite of control tools is available and accessible for use across Queensland. The recipients of this funding will be decided through a two-stage application and assessment process. Stage 1 received 48 Expression of Interest applications, eight of which were invited to participate in Stage 2. Stage 2 closed in early January 2025, and recipients were selected in early February.

Round 8 seeks a lasting legacy of strategic partnerships, strengthened capacity and enhanced biosecurity preparedness, ensuring Queensland has sustained success in more effectively managing feral pigs and reducing their impacts. Biosecurity Queensland seeks to promote the key activities, deliverables and innovative projects of Round 8 of the QFPI.

Biography

Rhiannon Ellis is a Graduate Policy Officer within the Invasive Plants and Animals team. She graduated with a Bachelor of Science, majoring in Ecology, from the University of Queensland in 2021. Rhiannon began her career with the Department of Primary Industries through the Graduate Connect program. She has been in this role for 2 years and has been collaboratively working to deliver two funding initiatives as part of the Invasive Plants and Animals grants team. Eager to pursue continuous improvement and make a difference in Queensland, Rhiannon is excited to progress her career with the Queensland Government.

Strengthening biosecurity preparedness and protection of wetlands and biodiversity in the Darling Downs & South West Queensland by the suppression of feral pigs

John Scriven

South West Regional Organization Councils, Pittsworth, QLD, Australia

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Abstract

This presentation aims to highlight and showcase a 3 year project funded by the Queensland Government though the Feral Pest Initiative Round 8A.

The aim of the project is to efficiently and effectively eliminate significant numbers of feral pigs over 10 regional council areas in Southern Queensland.

This will be achieved through three action streams:

- Mentoring and upskilling local government Biosecurity / Land Protection Officers on the latest research and best practice protocols in the use of toxins, pig traps and ground / aerial shooting that will be transferred to land managers to assist the planning and conduct of feral pig management.
- Setting up data collection activities that will feed into monitoring plans that suit the needs of each regional council– collaboration with councils to ensure individual needs are met, plans are tailored to suit each council whilst still preserving the original projects intent.
- To facilitate coordinated feral pig control activities over local and State government boundaries using a nil tenure approach to achieve better effectiveness and limit reinfestation.

Biography

With 40 years of extensive experience in feral animal control from his early years at the family farm to a professional harvester, licence dealer & wild game processor, John Scriven moved to Natural Resource Management. His experience extends from land manager engagement and pest management control though to research and helping in the development of the feral pig toxin, HOGGONE ®. John has worked with Landcare, Queensland Murray Darling Committee, Murray Darling Basin Authority and the Queensland Department of Resources. John has presented at conferences in Australia and overseas including the Feral Hog Conference USA 2016 & 2018. John currently holds the position of Darling Downs and SouthWest Queensland Feral Pig Coordinator.

A zone-based approach to feral pig management: Lessons from the Mid West demonstration site, Western Australia

Linda Vernon[1], Chris O'Callaghan[2] and Paul Pitaro[3]

[1] *Central Wheatbelt Biosecurity Association, Mukinbudin, WA, Australia*
[2] *Midlands Biosecurity Group, WA, Australia*
[3] *Vertebrate Pest Management Australia, WA, Australia*

Corresponding author: Linda Vernon, eocwba@outlook.com

Abstract

In Western Australia's Mid West region, a zone-based approach to feral pig management has emerged as a potential effective strategy driven by coordinated collaboration and a focus on community engagement. This presentation will detail the journey of the Mid West Demonstration Site and its development into a model of best-practice feral pig management.

Key elements of the program include building partnerships with landholders, collaboration of Recognised Biosecurity Groups (RBGs) and engaging with government to ensure integrated management across diverse landscapes. We will highlight how this collaborative approach has fostered trust, streamlined decision-making processes, and enabled continuous improvement in risk mitigation strategies.

A critical component of our success has been the involvement of contracted Licensed Pest Management Technicians (LPMT) who have applied insights gained from the previous National Feral Pig Conference to refine their control practices. This session will showcase how the sharing of information, innovative techniques, and adaptive management have set our program apart, delivering tangible outcomes for landholders and the environment.

Attendees will gain insights into:

- The importance of regional coordination and collaboration in feral pig management.
- Effective strategies for landholder engagement and building long-term partnerships.
- Lessons learned from field operations, zonal approach and the frequency of aerial culling programs.
- How continuous learning and adaptability are critical for keeping pace with change and enhancing program effectiveness.

By sharing our journey, we aim to inspire other regions to adopt and adapt similar strategies to combat feral pig impacts, ensuring more resilient landscapes and productive communities.

Biography

Linda Vernon is the Executive Officer of the Central Wheatbelt Biosecurity Association (CWBA), a recognised biosecurity group in the Mid-West Region of WA. With a commitment to biosecurity excellence, she provides strategic, executive, and administrative support to the CWBA Board. It is a dynamic role involving daily management, implementing annual operational plans and fostering stakeholder collaboration. With a strong focus on community engagement, Linda plays a lead role in ensuring the region remains resilient and well-prepared to address biosecurity challenges.

Spatially assisted aerial shooting (SAAS) - translating feral pig habitat preferences into improved on ground outcomes

Chris Gaschk[1], Cameron Wilson[2], John Cuskelly[2], Matt Gentle[2], Darren Marshall[3]

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Abstract

Several key barriers hinder effective feral pig management across Australia. To overcome these obstacles, it's essential to turn scientific insights into practical, effective management strategies. Despite the urgent need for control measures, challenges such as lack of motivation, inadequate strategy and limited local data continue to impede efforts to reduce feral pig numbers on a landscape scale.

This field trial, led by Western Downs Regional Council, aims to enhance the efficacy and efficiency of aerial shooting of feral pigs using spatial insights.

The trial uses feature revisitation modelling developed by Cameron Wilson (QDPI) to identify habitats favoured by feral pigs, drawing on data from feral pig collaring projects led by Darren Marshall (CISS). This modelling offers insights into feral pigs' landscape use patterns and home ranges.

Through geographic information system (GIS) analysis, specific areas with preferred habitat characteristics were mapped and targeted for aerial shooting by pest groups led by landholders. The efficiency of shooting within these key areas will be measured and compared to the default approach. Historically, the success of aerial shoots has relied on contractors' understanding of the landscape and feral pig behaviour. However, incorporating Spatially Assisted Aerial Shooting (SAAS) seeks to even the playing field, reducing reliance on contractor experience.

The trial is being implemented in three distinct landscape-use regions within the Western Downs: areas dominated by cropping, mixed cropping and grazing, and grazing systems. By evaluating the efficacy of control measures across these varied landscapes, the project aims to demonstrate that this new approach can be scaled and replicated in similar landscapes across Australia.

Ultimately, this initiative exemplifies the translation of scientific research into actionable management practices, with the potential to improve feral pig control and reduce impacts on the Western Downs and the wider continent.

Biography

Chris Gaschk is a Natural Resource Management Supervisor with Western Downs Regional Council, based in Dalby. He holds a Bachelor of Environmental Management from the University of Queensland and began his career in North Queensland, working in a joint council role focused on coordinated vertebrate pest management. At Western Downs, Chris manages diverse natural resource projects, including Flying Fox and Vegetation Management, recently his role has had a particular focus on projects that aim to increase the effectiveness of coordinator control programs targeting feral pigs. These include understanding the relationships between feral pigs, their impacts and Bunya Pine die back. The adoption of Spatially Assisted Aerial Shooting to improve outcomes in coordinated aerial control programs and finally a feeder trial is being conducted to integrate AI into feral pig management to reduce labour associated with free feeding.

Experience and effort is never futile: lessons learned from managing feral animal impacts in the Burdekin Shire

Graeme Oats

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Abstract

Managing the threat and damage of feral animals on natural resources and agriculture presents ongoing challenges. In the Burdekin Shire, these challenges have included difficult terrain, varied ecosystems, fragmented land tenures, limited and inconsistent funding, conflicting stakeholder priorities, and the complexities of maintaining collaboration. Additionally, securing skilled personnel, adopting new tools and techniques, and balancing competing priorities have compounded these difficulties.

In 2022, the Burdekin Shire Council secured funding through Round 6 of the Queensland Feral Pest Initiative to expand its feral animal control program. This initiative targeted three additional locations, fostering broader control and stakeholder engagement through cluster groups. Despite encountering obstacles, the program yielded valuable insights and outcomes. Notable achievements include expanding coverage to over 50% of rural areas, enhancing operational capacity, improving data collection, upskilling staff, and strengthening community partnerships.

By embracing a mindset of continuous improvement, the Council demonstrated that no effort is ever wasted. Key takeaways include the value of dedicated collaboration, strategic flexibility, and the importance of capturing lessons learned for future decision-making. The average cost-effectiveness of aerial control activities underscored the program's success in resource management.

This presentation will explore how the cumulative experience and efforts, despite setbacks, have laid a foundation for ongoing progress in feral animal management. As Martin Luther King Jr. aptly stated, "Change does not roll in on the wheels of inevitability but comes through continuous struggle." This ethos drives Burdekin Shire's commitment to adaptive learning and improvement.

Biography

Graeme is one of four Biosecurity Officers in the Pest Management team of Burdekin Shire Council. Graeme has been with Burdekin Shire Council for over 3 years.

Pigs of the Roaring 40°s, the unique and emerging challenges of feral pig (*Sus scofa*) management in Tasmania

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Abstract

Tasmania is largely free of feral pigs with the only known population confined to Flinders Island in the Furneaux region of Bass Strait. However, ongoing incursions and persistence of domestic pigs outside an agricultural landscape threatens the feral pig free status of mainland Tasmania. The application of knowledge gained from managing feral pigs on Flinders Island will build the capacity of land managers and agencies in Tasmania to identify and control future pig incursions.

Flinders Island supports significant agricultural and natural values and is an important region for the Palawa people of Bass Strait. Feral pigs are distributed along the eastern, southern and northern coastlines, with the western and central areas of the island, for unknown reasons, remaining pig free. Historically, the control of feral pigs on the island has been limited to ad-hoc ground shooting in areas of increased pasture damage. The management of feral pigs on the island provides a unique set of challenges including limited human resources, an abundance of non-target species, dense vegetation, complex terrain and the ever-changing weather conditions of Bass Strait. In 2023, Biosecurity Tasmania together with local land managers initiated a program of poisoning, trapping and ground shooting to assess efficacy and practicality of these techniques in controlling feral pigs in an island landscape. In addition, GPS collars have provided valuable information on the spatial ecology of feral pigs and are helping to clarify some common theories of seasonal pig movement across the island. Through communicating the outcomes of this program to landowners on the island, it is hoped more effective and consistent management efforts can be implemented into the future.

On mainland Tasmania, the release or escape of domestic pigs from agricultural lands has undoubtedly occurred since European settlement, yet broadscale establishment has never been recorded. The recent rapid growth of small farm holdings together with a lack of husbandry knowledge has likely increased the risk of release or escape and may have led to the increase in reported pig incursions across the state. Working within a complex legal framework, land managers require community engagement, surveillance and operational capacity if Tasmania is to maintain its feral pig free status.

Biography

Matt is a recent newcomer to feral pig management having lived and worked on a pig free island for the past 20 years. Working for government agencies in Tasmania, Matt's work focuses on the control and eradication of vertebrate pests from offshore islands, vertebrate incursion surveillance and response, and seabird and mammal monitoring in the Antarctic. Self-confessed feral pig illiterate, Matt and the team are happy to receive advice and help from those with more knowledge.

Remote pig trapping and monitoring in Arnhem Land

Alex Ernst[1], Arijay Nabarlambarl [2], Cara Penton[2]

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Abstract

The Traditional Owners of the Warddeken Indigenous Protected Area formed Warddeken Land Management Ltd. in 2007. Warddeken is an Aboriginal-owned, not-for-profit company that combines Traditional Ecological Knowledge with Western science to manage and protect one of Australia's most unique environments. Operating out of the remote homeland communities of Kabulwarnamyo, Manmoyi and Mamardawerre, Warddeken employed over 200 Indigenous rangers in the last year to work on a variety of projects, including fire management, carbon abatement, weed and feral animal control, rock art conservation, education and cultural heritage management across 1.4 million hectares of spectacular stone country on the Arnhem Plateau.

In 2024, Warddeken rangers implemented a remote feral pig (*Sus scrofa*) monitoring and trapping program to trial innovative methods of controlling feral pig numbers, which were increasing as feral buffalo (*Bubalis bubalis*) were progressively removed through Warddeken's long-running annual feral animal removal program.

Warddeken Feral Animal Officer, Arijay Nabarlambarl, conducted consultations with Landowners for clan estates involved and identified sites impacted by feral pig damage. He then prepared the gear for slinging to remote sites via helicopter. Nabarlambarl and Warddeken rangers deployed EcoSat GPS units to transmit gate open/gate closed signals, Reconyx HP2W cameras and a 'Hog Eye' camera which uses satellite to send live footage of traps when triggered by movement. Trapped pigs were fitted with GPS collars to monitor their movements for twelve months. Utilising this technology effectively reduced trap management time and played a vital role in the successful trapping of feral pigs in one of the most remote areas in Australia.

This project is a collaboration between Warddeken Land Management Ltd. and North Australian Indigenous Land and Sea Management Alliance (NAILSMA) to build rangers and Landowners capacity in feral pig trapping techniques using the latest GPS collar technology to protect cultural values and the environment. NAILSMA provided funding and support through the National Environmental Science Project (NESP) and the Department of Agriculture, Fisheries and Forestry-funded Protecting Country Against Invasive Species (PCIAS) Program. Warddeken was supported by the Department of Climate Change, Energy, the Environment and Water Saving Native Species (priority places) grant to deploy pig traps and trial pig trapping technology as part of integrated works to improve habitat condition for priority species.

Biography

Arijay Nabarlambarl is the feral animal officer for Warddeken Land Managment and has been a ranger in the organisation for a decade. Arijay coordinates the successful feral animal program to deliver outcomes for people and country. Through Arijays leadership the program has been able to identify high pig density areas , consult with landowners , set up remote pig traps and monitoring systems which led to the successful collaring of feral pigs in the Arnhemland Plateau.

Arijay will be supported by another Warddeken ranger and the NT PCAIS regional coordinator (Alex Ernst) to present this project at the 2025 National Feral Pig Conference.

PIGOUT® Econobait 1080 long life feral pig bait for feral pig management

Linton Staples[1], Jason Wishart[2], Ben Hall[1], John Scriven[3], Darren Marshall[4]

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Abstract

Sodium fluoroacetate (1080) can be traditionally mixed, at high doses, with grain, fruit, meat or offal (dependent on legislation and permit conditions in place), prepared freshly, to poison feral pigs in Australia. While locally effective, there are concerns that some non-target species, that also eat grain or meat, may be accidentally poisoned and there are biosecurity risks if feeding offal to pigs. Despite local successes, this method, together with ground or aerial shooting and trapping, has not yet stopped the increasing disease risks, stock predation and environmental damage caused by feral pigs throughout Australia.

With the former Invasive Animals – Cooperative Research Centre (IA-CRC), a feral pig targeted bait PIGOUT Feral Pig bait was developed, containing 72mg of 1080/bait localised in a central core of a 210g bait, to enable effective feral pig control while minimising the risks to non-target species. Whilst highly attractive to feral pigs in cool temperate areas and significantly more target-specific than meat or grain bait, this manufactured bait has a high moisture content and short storage shelf-life in warm conditions.

To increase convenience, a new generation low moisture and smaller 70g bait, "PIGOUT® Econobait 1080" has been released that is APVMA approved. It is shelf stable in all environments and contains the same 1080 content/kg to PIGOUT, spread throughout the matrix. Field testing confirmed that the new matrix is highly palatable to feral pigs and unappealing to non-target species. While the bait can be used with HOGHOPPER™ and PIGBAITTA™ delivery systems, the use of hoppers is not obligatory for this bait. Three closed population pen trials (water hole trap pens of ~ 2 hectares each) confirmed PIGOUT® Econobait is lethal to feral pigs.

Biography

Dr Staples graduated with first class honours in Agricultural Science and was awarded a Masters degree in Agricultural Science from The University of Melbourne in 1979 and PhD from the University of Cambridge in 1982. Staples founded Animal Control Technologies to manufacture and distribute products for vertebrate pest management.

Dr Staples pioneered professional approach to systematic control programs and has provided industry with a range of new, targeted products and services for more effective pest management. Effective pest control products include FOXOFF®, RABBAIT®, DOGGONE®, MOUSEOFF®, PIGOUT®, PIGOUT Econobait®, HOGGONE® meSN, ANTOFF®, TOADINATOR™ and ACTA-Attracta. ACTA products are distributed via rural merchant and government distributors.

Harnessing People Power

John Nolan

Murray Local Land Services, Deniliquin, NSW, Australia

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Abstract

Most of us have a general or excellent understanding of feral pig biology, behaviour, and control, but what about the human aspect? This presentation will discuss people, and the real benefits of harnessing and motivating groups to succeed in pest animal management.

If we think about any pest animal program, we need passion and motivation from the affected stakeholders. Converting stakeholder capacity from individuals to groups and from small parcels of land to extensive geographic regions is critical to the success of managing feral pigs.

The importance of trust and relationships in working with groups of land managers (and how to do this), how to sustain their involvement in cross tenure, landscape scale management of feral pigs, and encouraging the adoption of different management approaches and monitoring tools to achieve management targets will be discussed.

Knowledge, empathy, and trust: this has been achieved in the Murray Local Land Services region, with results available to demonstrate this. Over the years, there has always been one especially important key to the success of harnessing people power, having an unofficial champion or spokesperson who has the trust of the group. This key person will drive your program once trust is established; these people are key to your success in managing feral pigs. How do we identify these people, engage them, and develop trust?

My presentation will demonstrate how "harnessing people power" will improve your pest animal, and in particular, feral pig, control outcomes with long term benefits to all stakeholders. I will highlight our key findings to demonstrate the link between human attitudes and successful pest animal control.

Biography

I am a father with a beautiful wife Claire, and two energetic boys Harry and Nick, I enjoy fishing and camping, our home is Deniliquin, the heart of the Riverina. I was raised on sultana and citrus blocks in Sunraysia then moved to sheep stations west of Nyngan NSW.

My professional life consists of 10 years with Local Land Services coordinating pest animal programs and Emergency Management. Locust management experience with the Australian Plague Locust Commission, Consultant for Food and Agriculture Organisation - United Nations, working in Yemen throughout the Empty Quarter desert region in locust operations. I have delivered control strategies targeting Yellow Crazy Ants on Christmas Island and worked as a Broadcaster and Journo with ABC radio Longreach Qld, and Commercial radio Mildura Vic.

My life motto is "Simple is best".

Obtaining social license for feral pig management in a unique environment. Inviting Iwi (Indigenous) to the decision-making table

Jamie Werner

Department of Conservation, Kaitaia, NORTHLAND, New Zealand

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Abstract

New Zealand's approach to wild pig management is distinctive, reflecting the diverse values placed on pigs by various societal groups, including Māori. Pigs are appreciated as a food source, for recreational hunting, and hold traditional and intrinsic value for many. This strong attachment can lead to conflicts, especially when pigs are seen as important by some and problematic by others.

Iwi (Indigenous) have treaty settlements in place granting them statutory acknowledgment over public conservation land, which plays a crucial role in decision-making. The effectiveness of co-management between Iwi and the government varies across the country, with examples ranging from highly successful collaborations to poorly executed efforts.

This presentation focuses on two key areas:

Collaborating with whānau, hapū, and Iwi to gain social license for pig control in New Zealand.

A case study on the island eradication efforts on Maukahuka / Auckland Island - work carried out by the Island Eradication Team.

The introduction of pigs to Aotearoa began with French explorer Jean François Marie de Surville gifting pigs to Māori in Doubtless Bay in 1769. Subsequent introductions by Captains Cook and Furneaux in the 1770s, and later by sealers, whalers and traders in the 1790s, led to the establishment of feral pig populations. Māori quickly adopted pig rearing, trading with European settlers and contributed to the spread of feral pigs around human settlements, providing a vital food source for early settlers.

Biography

I have dedicated the past 10 years to the environmental sector, gaining all my knowledge and skills on the job without any formal training or environmental qualifications. I began my career with weed spraying and have since advanced to become the National Wild Pig Programme Lead for the Department of Conservation. Throughout my journey, I have been honoured with several awards for both Iwi/communities and myself. My proudest achievement is collaborating with four of our Iwi partners to secure $13 million in funding, which created 50 jobs for our people.

Ten years of working with Santos GNLG to control and research feral pig populations to improve landscape scale nil-tenure control.

Darren Marshall and Lachlan Marshall

Centre for Invasive Species Solutions, Canberra, ACT, Australia

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Abstract

The Centre for Invasive Species Solutions are providing pest animal management across six Santos GNLG (Santos) environment offset areas (EOA) in the Surat Basin: Bottle Tree, Cobbadah, Crowman, Kentucky, Mt Tabor and Springwater in Queensland.

Each of these EOA's has an Offset Area Management Plan (OAMP) in place that outline the priority pest animal species requiring management. Feral cats (*Felis catus*), feral pigs (*Sus scrofa*), foxes (*Vulpes vulpes*) and wild dogs (*Canis familiaris*) pose a threat to threatened species, listed in the Environmental Protection and Conservation Act 1999, on these properties.

Pest animal management has been conducted for Santos across the Kentucky and Springwater offset areas since 2012 and at the Bottle Tree offset located in the Arcadia Valley since 2014. In that time, we have successfully removed 1526 pest animals, 1127 of these being feral pigs. Further to pest animal control, extensive feral pig and community engagement research within the Bottle Tree offset area has been conducted since 2017. A total of 50 feral pigs have been fitted with GPS tracking collars, providing 44 viable data sets within the Bottle Tree offset and surrounding properties. This work has delivered vital spatial and temporal data to improve management techniques by targeting control effort. Importantly, it also influenced the community's intent to work together to protect assets from feral pig impacts into the future.

This has culminated in the local Arcadia Valley community accepting Santos as a valued neighbour, contributing to their efforts to control feral animals. Notably, the community have recognised the value from the feral pig research and have directly requested that it be replicated on wild dogs and feral cats. Santos are currently exploring how this may be supported into the future.

In this presentation, ten years of feral pig control data will be presented and the benefits from landscape scale, cross tenure management will be considered, blending cutting-edge biophysical ecological sciences with a better understanding of community dynamics grounded in human ecological sciences. We also explore the benefits and the improvements of a large company, such as Santos, supporting and being a part of the community conducting landscape scale control and research.

Biography

Darren Marshall specialises in engaging people in effective, coordinated pest animal control and landscape scale environmental management. Darren is currently the Lead Researcher, Feral Animal Projects with the Centre for Invasive Species Solutions. He is completing a PhD, testing different engagement strategies, using biophysical research as a vehicle to motivate land managers to take collective action to address the feral pig issue in Australia. This study is part of a collaboration with the University of New England and Penn State University (USA). Darren's interests lie in improving environmental management through working with land managers to tackle issues that can only be addressed at a landscape scale, particularly linking good research and effective local engagement with on-ground outcomes.

Landholder versus Government pig control. Two case studies of feral pig control conducted by Northern Tablelands Local Land Services, NSW

David Worsley[1], Elli Keyte[2], Mark Tarrant[2]

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Corresponding author: Dave Worsley, dave.worsley@invasives.com.au

Abstract

1. Yetman/Wallangra, traditional government funded and enacted control program with sustained effort and multiple tools. Limited landholder involvement

2. Yarrowitch Tia, mobilising landholders through local champions and minimal support by government. Landholder led and driven control.

The Yetman/Wallangra area has been long affected by high feral pig populations, causing extensive damage and impacts on crops, hay, stored grain, fences, waterways, pastures and livestock disease.

Landholders have been proactive with private aerial shoots, 1080, trapping, shooting and dogging in a sporadic way.

The government intervention targeted 41 private holdings and 20 Travelling Stock reserves over 78,711 ha. An aerial shooting program removed 2762 pigs, 21 foxes and 10 feral cats. Pre and post ground control was undertaken by a LLS contractor primarily using trapping (98 days) plus 1080 and one on one engagement.

Yarrowitch Tia mobilising landholders using local champions. The area has not historically had feral pig issues and are a new incursion. Landholders are keen and motivated.

We engaged with the local community to train and guide control efforts, running two events each attended by over 60 local landholders, National Parks and Forestry staff at each event. The community have used the existing structure of their wild dog group to target pigs.

Sixteen pig traps were purchased and managed by the group who also use Feralscan to help coordinate control and reporting. Individual landholders also built or bought additional traps. Baiting with 1080 and HOGGONE as well as ground shooting were also used.

This locally driven and delivered control has removed over 500 pigs from the landscape, severely denting the new incursion.

The local pest animal group, with their own pig traps and cameras, continue to manage their pest issues using a calendar-based management plan and control strategy.

The best, the worst, the reality and the future.

Biography

Dave is a grazier on the Northern Tablelands, NSW and has worked with all vertebrate pest species to develop nil tenure management plans and facilitate uptake of pest programs. Dave also participates in land manager training workshops and is the land manager representative on the National Feral Pig Action Plan's Implementation Committee.

Regional Coordination Panel

Panellists

- Heather Channon. National Feral Pig Management Coordinator, Australian Pork Limited;
- Sam Armstrong, Engagement Officer for Vertebrate Pests, Agriculture Victoria;
- Bec Gray, State Feral Pig Coordinator, NSW Local Land Services;
- John Scriven, Darling Downs and South West Qld Feral Pig Coordinator, South West Regional Organization Councils;
- Angie Reid, Senior Project Coordinator - Protecting Country Against Invasive Species, North Australian Indigenous Land and Sea Management Alliance Ltd.

Bringing the sounder together: stakeholder collaboration and engagement insights from the Otways feral pig program

James Templeton

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Abstract

The Conservation Ecology Centre's (CEC) feral pig program in the Otways, South-West Victoria, spans tens of thousands of hectares across diverse land tenures involving multiple government agencies, water authorities, industries, and private landholders. Through a collaborative, cross-tenure approach focused on community and stakeholder engagement, and informed by ecological research, the program has successfully reduced feral pig populations by 98% in targeted areas.

This presentation will share insights from the Wild Otways Initiative, focusing on fostering a culture of collaboration and trust that empowers local communities, government and industry to play an active role in feral pig management. We worked with a wide range of organisations, including but not limited to: Catchment Management Authorities, Water Authorities, Parks Victoria, Landcare and the Department of Energy, Environment & Climate Action to achieve common goals. We facilitated engagement sessions, ran workshops and opened lines of communication between stakeholders. Through ongoing communication and participation across these networks, we've been able to build trust, leverage local knowledge and create a collective sense of ownership, ultimately creating a platform for a unified and effective response to the feral pig threat.

Biography

Hailing from Queensland, James joined the Conservation Ecology Centre team in 2021, where he has been actively involved in various research and land management initiatives focusing on feral animals, native flora, and small mammals. His previous experience in ethnobotanical research and his time with grassroots organisations has bolstered his beliefs in community engagement, particularly with Indigenous organisations. Having strong connections to the Otways and community, James possesses an innate understanding of knowing when to listen and when to act. He treasures the opportunity to live and work on Gadubanud Country, where he can contribute to conservation efforts for this land.

Recognised Biosecurity Groups: The importance of community engagement and supporting landholders in invasive species control.

Rachel Rand and Teele Hooper-Worrell

Peel Harvey Biosecurity Group, Waroona, WA, Australia

Corresponding author: Rachel Rand, crisp@PHBG.org

Abstract

The Peel Harvey Biosecurity Group (PHBG) is dedicated to assisting private landholders in the control of invasive species on their properties and coordinating local control efforts to improve long-term results. The group achieves this by providing relevant and up to date information, free loans of equipment, hosting community events and engaging with stakeholders and experts in the field. The PHBG runs a successful feral pig trapping program utilising both Matlock and Pig Brig traps, in which landholders are guided through the trapping process, and given the knowledge, experience and confidence to continue their management programs in the long term.

In June 2025, the PHBG will host a South West Vertebrate Pest Forum in Pinjarra WA, as a means to update and educate landholders in the area, and for landholders to learn from stakeholders, researchers, government departments, manufacturers and technicians about best practice control methods, changing legislation and new developments and technology in the vertebrate pest management field.

This presentation will highlight how the PHBG engages with their community, and other stakeholders for more effective, nil tenure feral pig management. This presentation will also demonstrate their learnings from Pig Brig trials and how landholders have adapted and evolved their feral pig programs..

Biography

Rachel Rand has a Bachelor of Science from the University of Western Australia, with double major in Zoology and Conservation Biology. She is a Licensed Pest Management Technician (LPMT) with seven years' experience in on the ground vertebrate pest control. Rachel joined the PHBG in 2024 and is now spearheading the PHBG's Cross-tenure Invasive Species Program. Rachel is adept at balancing the challenges of engaging with the public about the need for effective invasive species management alongside coordinating projects that use best practise techniques to deliver on ground outcomes.

Estimating economic impacts of feral pigs to grain growers

Tony Lockrey

AMPS Moree, Moree, NSW, Australia

Corresponding author: Tony Lockrey, tony.lockrey@ampsagribusiness.com.au

Abstract

Feral pigs are an abundant pest in the Moree district of northern NSW. Their current management is a patchwork combination of exclusion fencing, ground shooting, trapping, baiting and aerial shooting.

Although area wide management is not practised in its pure form, there are pockets of growers that work together and, in combination with their aerial contractor, time trapping and baiting activities to culminate with an aerial shoot at critical times in the cropping and livestock calendar. Either the grower or the aerial contract shooter, or both, lead the process and co-ordinate the grower group.

The key driver for in-season aerial control, to be overlaid across existing individual management, is when observed crop damage is at a level of economic impact at or building to a threshold. In most cases, the whole group will join in the shoot resulting in a blanket of 10,000-20,000ha being covered. While there is some information available regarding the economic damage of feral pigs on our crops (AgEcon, 2021) and growers are cognisant of the fact they are required to manage feral animals on their land, much better monitoring and numbers are required to make informed decisions with respect to return on investment for control measures implemented.

There are gaps in our knowledge.

While the costs of aerial shooting are easy to quantify, and the numbers shot are accountable - the damage done by the pigs or the relief to continued damage are very hard to quantify. Due to the width of harvesting equipment being in the order of 9-12 metres, it is hard to utilise yield maps to retrospectively analyse pig damage in the crop as nests are often only 2-4 metres wide, are averaged across the header and may not show up significantly.

Another factor is that post-harvest yield reductions shown on yield maps can often be erroneously attributed to disease, wet spots or planter issues.

An approach to utilise aerial imaging (drone or satellite) to recognise and quantify coarse (>1mtr) crop damage caused by feral pigs prior to harvest is being investigated to enable accurate economic assessments to be made.

Other efforts to quantify pig damage include improved education of agronomists and growers to identify damage across the range of crops we grow and to notice signs of endemic pig populations as well as sudden influxes of mobile pigs into their range.

This presentation will include aerial and ground photographs of pig nesting and feeding damage in a range of crops. Some images analysed for economic damage may also be presented

Biography

Tony Lockrey completed his Rural Science degree with honours in 1994 and has been a consulting agronomist for 30 years. He has been controlling pigs with firearms and dogs, as well as baiting and trapping since the 1980's. He has been an aerial contract shooter since 2007 and farmer on the Moree Plains since 2010. In the last 10-12 years, he has become more involved in industry and community-based control campaigns as well as research and co-ordinates a number of farmer groups.

Land manager panel discussion

Panellists

- Brendan Taylor, AgForce Queensland Grains President, Dalby, QLD;
- Tony Lockrey, Land manager and aerial control contractor, Moree, NSW;
- Dave Worsley, Land manager, feral pig workshop trainer and NFPAP Implementation Committee land manager representative, Nullamanna, NSW.

From uncertainty to action: disease surveillance and response in feral pigs

Andrew Bengsen

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Abstract

When an emergency animal disease (EAD) outbreak hits a feral pig population, urgent and high-stakes decisions will have to be made in a highly uncertain environment. While we can't reduce the urgency or stakes, we can help reduce the uncertainty about locating and delimiting incursions and determining the most effective responses. Our two-pronged project aims to tackle this challenge through an active disease surveillance program and a research initiative to address critical knowledge gaps in our disease response capabilities.

Since 2023, we've conducted over 50 surveillance operations across New South Wales (NSW), testing different sample collection methods and gathering data on the distribution of pathogens responsible for diseases like Japanese encephalitis, brucellosis, leptospirosis, and Q fever. We've collected samples from pigs culled by aerial shooting, ground shooting, trapping, and baiting with 1080. Our findings reveal widespread exposure to *Leptospira interrogans* among feral pigs in NSW. Similarly, exposure to flaviviruses, such as Japanese and Murray Valley encephalitis viruses, is also widespread, while *Brucella suis* exposure has been detected only in the state's northwest.

Response plans for EAD incursions in feral animals in Australia have been hampered by a lack of information about feral pigs and their control. To address this, we developed a model using real-world data to predict the aerial shooting effort needed to reduce fallow deer populations to specific densities. We're now extending this tool with new data and different modelling approaches to apply it to feral pigs. Our GPS-collared pigs and fallow deer have shown that, contrary to current planning concerns, aerial shooting should be a safe method for managing EAD incursions as it doesn't cause infected animals to flee targeted areas. However, we've observed significant differences in pig behaviour across various shooting operations. GPS tracking data have also revealed considerable variability in pig social networks and contact rates across different sites, seasons, and individuals. These factors are often overlooked in the disease transmission models that we rely on to predict the outcomes of different management actions. Some of these issues will be addressed through a postdoctoral modelling project aimed at producing a reliable decision support tool.

Our research has begun to fill critical gaps in our ability to detect and respond to EAD incursions in feral pigs. It also underscores the challenges of predicting feral pig behaviour and the need for flexibility, monitoring, and adaptation in EAD response operations.

Biography

Andrew is a Senior Research Scientist with NSW DPIRD's Vertebrate Pest Research Unit. He has been conducting research to improve the management of feral pigs and other pests for 20 years.

Do the worst first – put your pig control in order for maximum population impact

Troy Crittle

NSW Department of Primary Industries and Regional Development, Tamworth, NSW, Australia

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Abstract

This presentation will outline fundamental principles in the timing, sequencing and control effort of existing feral pig control tools. This presentation builds on lessons learned from 50 years of feral pig control in NSW. Key principles developed in the 1970's are examined and their continued use and value in contemporary feral pig control are drawn. Key actions in relation to baiting and aerial control (and their complementary use) are described. Strategies for maximising the functional response (with a population reduction target of 70%) of aerial shooting and 1080 baiting are discussed and mnemonics to improve free-feeding are presented.

Utilising key timings in targeting key feral pig physiological requirements of food, water and safety are outlined for several key environments. Sequencing of feral pig control programs at less than 120 days is recommended.

Feral pig population reduction in relation to aerial shooting is discussed; based on variables of refuge areas, pig behaviour and vegetation type; 2-3hrs of aerial shooting per 1000 hectares is recommended for a 70% population reduction. Multiple aerial shoots over the same operational area required to suppress feral pig populations to 4-6 animals per km^2. Ongoing baiting and trapping programs are suggested to provide ongoing population suppression.

Biography

Troy Crittle is currently employed as an Invasive Species Officer with DPIRD in NSW. Troy has worked in the invasive species field since 1997 and let's be honest; he hasn't had once ounce of personal growth since that time. Despite that; when Troy's work colleagues could be bothered putting up with him, he has worked on feral pig control programs and done a bit of training for industry newcomers.

Catch per unit effort analysis of a local feral pig control program: suggestions for monitoring and continued effort

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Abstract

The critical data for evaluating feral pig control programs are the numbers removed, the effort expended and the costs and the number or density of the remaining population. That information enables the managers to determine the efficacy of the program and the future costs to achieve a desired population reduction for reducing density below thresholds for eliminating disease or impacts to below break-even levels.

In this paper, we present data from a helicopter control program in the Northern Tablelands Local Land Services district of New South Wales. We analyse the kill per unit of effort and the expenditure to achieve that kill, predict the starting and finishing densities and project the required kill to push the population into negative rate of increase. We then discuss the ongoing management requirements including budgeting, stakeholder engagement and the impact measurements required to determine both effectiveness and cost efficiency of feral pig control programs. These are useful for ongoing community-led management of feral pigs.

Biography

Since 1983, Peter Fleming has researched invasive animal issues including: feral pig control for exotic disease preparedness, the strategic management of red foxes, feral cats and dingoes, cockatoo damage to sunflowers, economics of rabbit damage, methods for surveying vertebrate pests, feral goat ecology and management, and management of predator-affected wildlife. He is a great fan of cooperation between researchers and land managers in practically managing invasive animal impacts.

Indigenous-led collaboration and consistent data collection to protect marine turtles from feral pig predation in Western Cape York

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Abstract

The west coast of Cape York Peninsula is a critical marine turtle nesting habitat; however, feral pigs pose a significant threat by preying on turtle eggs and hatchlings, leading to severe declines in hatching success over the past four decades. In 2013, nest predation rates reached alarming levels of 70–100%, far exceeding the sustainable threshold of 30% allowable clutch loss. The Western Cape Turtle Threat Abatement Alliance (WCTTAA), a collaborative initiative governed by six Indigenous Land and Sea Ranger groups, employs targeted feral pig control methods to mitigate nest predation impacts. Through systematic and consistent monitoring of nesting patterns, predation rates, and hatchling survival, the WCTTAA provides critical insights for marine turtle conservation.

A purpose-built data application, NESTOR, supports the program by enabling fast, accurate data collection using GPS tracking, integrated mapping features and interactive data visualisation. NESTOR also includes offline images and identification guides for turtle species, facilitating standardised data recording. Yearly in-field training on Country with Indigenous Ranger groups ensures data consistency across the Western Cape York region, enabling accurate assessments, informed management decisions and measurable conservation success. This approach distinguishes the WCTTAA from other feral pig management programs that focus solely on reducing pig populations without measuring conservation outcomes.

By reducing nest predation rates to sustainable levels, the WCTTAA has ensured the survival and recovery of marine turtle populations along the west coast of Cape York Peninsula. This collaborative initiative underscores the importance of integrated Indigenous knowledge, innovation, and coordinated efforts in addressing complex environmental challenges, serving as a model for effective, results-driven conservation programs.

Biography

Born in Thursday Island, Torres Strait, Marietta has 20+ years of experience, ranging from mine and plant operations, Emergency Responses Services, business administration, community services and a proud server of the Australian Defence Force.

In 2023, Marietta made history by becoming the first female Ranger Coordinator for Nanum Wungthim Land & Sea Rangers. During her earlier role as a Ranger admin, she witnessed the daily challenges the Rangers encountered firsthand. Now, Marietta is responsible for overseeing the care for Country of more than 200,000 hectares of land. She leads by example, completing on-the-job training alongside her Rangers while empowering and supporting them to seize every opportunity that arises.

Insights on delivering integrated pig control programs in highly restricted areas to stakeholders with differing decision drivers

Adam Quinn

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Abstract

The constant conjecture on where pigs shelter, breed and "live" and therefore who is responsible for control programs – especially who pays for it – is hotly debated.

We have designed and delivered feral pig control programs at locations that have not been able to conduct landscape scale pig removal programs in more than 20 years, and are hence safe havens for pigs, as firearms are banned at those sites. Our programs have removed over 1700 pigs from those restricted sites over those programs, which involved approximately 130 hours of flight time.

In my presentation, I will elaborate on the major reasons why we have been able to deliver ongoing programs that demonstrate value for money outcomes that are transparent and auditable including:

- How early and comprehensive engagement with key decision makers and external stakeholders through open communication and provision of detailed information about technicians, capabilities, experience, risk management, costs, area covered etc. is critical to region wide support
- CSG benefits from being a good neighbour – how farmers appreciate the work being done and thank the mines.
- How we earn support and trust with risk averse management, neighbours and communities that have their own service providers (local pig hunters etc).
- Environmental management and net cost benefits of removing pigs from rehabilitation – erosion prevention etc.
- Extremely comprehensive risk assessments to facilitate access to prohibited areas – mine sites (firearms are banned).
- Pre & post program surveys via UAV (day and night) and aircraft to record evidence of pig habitat, damage and how it differs to crop failure.
- Utilisation of technology: iPad, autonomous drones, flight computers, thermal sensors, 4G trail cameras, Qld Globe, Google Earth etc to generate detailed mapping of approved and excluded work areas.
- How results are quantified to provide accurate & transparent results through extensive reporting, real-time tracking, video footage & Avionics computers.
- Financial outcomes and cost benefit analysis results from recent programs.
- Comparison of neighbouring sites that both participated in a large aerial program in October 2023, with one site continuing ongoing pig control programs and the other that has not. A large pig population has reinhabited the non-maintained site, however the site that has maintained controls now has extremely few pigs…
- Importance of having capable, loyal and trusted team members.

Biography

Adam Quinn is the Director of GreymanOPS, a private company delivering comprehensively structured animal removal services. GreymanOPS specialises on large scale, corporate & government owned entities that require significant risk management & stakeholder engagement.

Development of camera trap surveillance to detect feral pigs at piggeries

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Abstract

Introduction - The threat of disease transmission from feral pigs (*Sus scrofa*) to domestic pigs poses a significant risk to Australia's pork industry. Current data limitations hinder our understanding of contact between feral and domestic pigs, potentially underestimating disease spread. This study aimed to investigate feral pig encounters at piggeries and optimise camera trap surveillance for industry use.

Materials and methods - A systematic camera trap surveillance system was deployed at a piggery in southeast Queensland for 12 months, with 46 camera traps around the boundary fence and 10 cameras in locations thought highly likely to experience feral pig activity ('hotspot' cameras). Results from the comprehensive camera surveillance system were compared with less intensive alternatives to assess the efficiency of detection using more feasible options.

Results - Feral pig detections were highest in autumn with a total of 1279 feral pig detections, especially in April with a median of 22 pigs/day. Feral pig encounters were detected 18.4 times higher at hotspot locations than fence cameras (95% CI: 11.8, 28.8). Feral pigs were most active around the piggery between 5pm and 6am, with comparable patterns across seasons and camera location. The probability of detecting feral pigs was found to be most efficient with a 60% coverage intensity, specifically in hotspot locations. Cameras located near cultivation, water sources and bush cover had a higher probability of detecting feral pigs compared to other landscape features.

Discussion - Piggeries should concentrate monitoring and control efforts towards areas perceived to have a high likelihood of feral pig encounters that potentially lead to disease transmission events. The methodology acts as a prototype for industry level surveillance activities around piggeries and will help parameterise disease spread modelling of African swine fever around Australian piggeries.

Biography

A/Prof Richard Bradhurst is a Principal Research Fellow and Chief Investigator at the Centre of Excellence for Biosecurity Risk Analysis (CEBRA), University of Melbourne, Australia. He is the co-creator and principal developer of AADIS (the Australian Animal Disease Spread model, EuFMDiS (the European Transboundary Animal Disease model), and APPDIS (the Australian Plant Pest and Disease model). Richard specialises in the fusion of multiple modelling approaches (analytical, agent-based, network, and cellular automata) to simulate the spatiotemporal spread and control of emergency animal diseases, and plant and environmental pests.

HOGGONE® meSN feral pig bait controls USA wild hogs but spilled bait can pose risk to small birds in winter

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Abstract

HOGGONE® meSN feral pig bait, registered in Australia in 2019, is under evaluation in the USA. Both countries have similar numbers and geographical spread of this invasive species with similar predation, environmental damage, and significant zoonotic disease threats. Despite localised control and some successful eradications from small areas of the USA and in Australia, existing control methods appear insufficient alone to stem the rapidly increasing threat. Therefore, the former Invasive Animals Cooperative Research Centre (IA-CRC), Animal Control Technologies (Australia) (ACTA), Texas Parks and Wildlife Department (TPWD) and USDA have jointly tested HOGGONE® in the USA and developed a target-specific bait delivery hopper.

Early tests in Texas USA in 2018, using a prototype hopper and bait mixed with corn found risks to passerine birds from spills of crumbled bait. Apart from a small number of crows killed during early trials, such non-target risks when the bait is deployed in trays and pre-feeding duration is managed to maximise group size as is advised in Australia. Further trials, during winter 2021 in the USA, explored lowered sodium nitrite dosing, hopper design modifications and removal of corn fragments. Subsequent trials during summer 2022 in Texas and Alabama achieved 88–98% reductions in visitation of pigs to bait sites following toxic baiting, with no bird impact. A final trial during winter in Texas in 2023 also used bird scarers and spilled bait was collected. We showed 90% + reduction in pig visitation to bait sites following toxic baiting but found ~5–6 dead non-target birds per bait site (primarily dark-eyed juncos), possibly killed by small particles of toxic bait spilled, despite the mitigation techniques. Migrating birds are more common in the winter than in summer. Despite excellent pig control, spillage of the toxic bait continues to be problematic for non-targets in the USA. Registration has been deferred in the USA.

Biography

Dr Staples graduated with first class honours in Agricultural Science and was awarded a Masters degree in Agricultural Science from The University of Melbourne in 1979 and PhD from the University of Cambridge in 1982. Dr Staples founded Animal Control Technologies to manufacture and distribute products for vertebrate pest management.

Dr Staples pioneered professional approach to systematic control programs and has provided industry with a range of new, targeted products and services for more effective pest management. Effective pest control products include FOXOFF®, RABBAIT®, DOGGONE®, MOUSEOFF®, PIGOUT®, PIGOUT Econobait®, HOGGONE® meSN, ANTOFF®, TOADINATOR™ and ACTA-Attracta. ACTA products are distributed via rural merchant and government distributors.

Towards effective feral pig control on the Yampi Sound Training Area (Kimberley, Western Australia)

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Abstract

The Kimberley, in NW Australia, is an area of exceptional biodiversity values that has seen fewer impacts of feral animals than other areas of Australia. There are increasing concerns about feral pigs expanding into areas of the Kimberley, where they have not previously been detected, and that population density may also be increasing in certain areas. Yampi Sound Training Area (YSTA), located on Dambimangari Country in the south-west Kimberley, supports habitat for many threatened species which is susceptible to damage from the impacts of feral pigs (*Sus scrofa*).

Under contract for the Department of Defence, Australian Wildlife Conservancy (AWC) in collaboration with Dambimangari Aboriginal Corporation (DAC), have managed feral pig populations on YSTA since 2017. Targeted aerial shooting began in 2020 and has comprised the majority of management effort. Since then, the aerial shooting regime has increased in frequency and continually integrated new learnings and technology to maximise pig detection and removal in a relatively low-density population in dense habitat. The efficacy of this control program has been evaluated by measuring changes in pig damage in riparian and wetland habitats throughout the landscape, as well as occupancy from a standardized annual feral animal camera array. Declines in rates of pig damage at wetlands, and site occupancy in 2023, may indicate positive effects of increasing and adapting management effort since the program's inception.

Biography

Braden is a conservation land manager who has worked in the Kimberley region of Western Australia for the last 5 years. As a trained ecologist, he draws on a multidisciplinary background to deliver effective landscape-scale fire, feral animal and weed programs across 1.3 million hectares of Dambimangari Country in the West Kimberley in collaboration with Dambimangari Traditional Owners. Braden has also co-managed an extensive aerial control program across 4 million hectares of the Kimberley since 2022, with the aim of maintaining the lowest possible feral animal densities across the landscape. Partnering with Traditional Owners, pastoralists and government organisations, he thoroughly enjoys breaking barriers towards effective conservation and contemporary land management.

Firearms high-risk areas: perception vs reality.

Andrew Williams

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Abstract

Most people learn about firearms in movies or the media. Real-life exposure and understanding (especially in invasive animal management) seems to be declining. Even the word firearm can be intimidating to some people. As professionals who use this tool daily it is advantageous to think about how people perceive our role and the use of firearms so we can have meaningful conversations and purvey the realities of their use.

During the planning stages of a project involving firearms a key component is assessing and mitigating risk. This sounds simple and should be captured in detailed protocols, however, the core of a safe and effective program is understanding the tool (firearm), the environment and the target species. Key considerations include selecting appropriate tools and techniques, coordinating with relevant stakeholders, and ensuring compliance with legal and ethical standards. Thorough planning not only minimizes risks but also increases the likelihood of achieving the desired outcomes safely and efficiently. Success hinges on the knowledge and proficiency of staff; comprehensive training ensures they are well-versed in firearm operation, safety, and ethical considerations while remaining adaptable to dynamic field conditions. Equally critical is understanding the unique challenges of the project site, such as terrain, vegetation, weather, and potential non-target risks, to ensure operations are both safe and ecologically sound. The selection and performance of firearms and ammunition, including considerations like calibre and ballistics, play a pivotal role in achieving humane outcomes and effective results. All of this must then be packaged and provided to decision makers, managers, stakeholders, landholders and the public in ways they understand to ensure we are all able to safely use this tool in the workplace

Biography

Currently working as a local government invasive animal officer, Andrew has experience in on-the-ground management of invasive animals and native wildlife in both rural and built-up environments. This has providing him with invaluable operational experience and fostered an understanding of the behaviour and impacts of invasive animals, along with effective management strategies. With extensive experience managing projects from inception to completion across Australia, Andrew has worked with a broad range of stakeholders, including landholders, private entities and local, state, and commonwealth organisations.

Pig carcass decomposition dynamics: Insights into carcass disposal for emergency animal disease management

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Abstract:

Australia is free from many economically devastating emergency animal diseases (EADs) that threaten livestock production in neighbouring countries. In Australia, an important consideration for EAD control is managing susceptible feral animal populations, especially in remote and inaccessible areas. While population control may be feasible using techniques such as aerial shooting or poison baiting, carcass disposal poses considerable logistical challenges. This is of relevance for environmentally persistent viruses, such as African swine fever virus (ASFV) and foot-and-mouth disease virus (FMDV).

One proposed solution for carcass disposal in these areas is to utilise natural decomposition above ground through the 'destroy and let lie' (D&LL) method, relying on post-mortem changes in carcass temperature and pH to inactivate the EAD agent. We investigated temperature and pH changes in pig carcasses at two locations in Queensland (subtropical Australia), to gain insights into how carcasses left in situ decompose under Australian conditions. Our modelling revealed that days since humane killing, air temperature, rainfall, relative humidity, anatomical site and study location as significant predictors of carcass pH and temperature. We also used machine learning and risk assessment to prepare a predictive tool for feral pig managers to assess carcass infectivity under future environmental conditions.

While the observed carcass pH and temperature conditions did not meet ASFV inactivation thresholds, FMDV was likely to be inactivated in the thoracic cavity, superficial and deep skeletal muscle and abdominal cavity of most carcasses. However, FMDV inactivation thresholds were not reached in bone marrow and brain. Overall, FMDV inactivation criteria were not met in one or more anatomical sites in 27 pigs (84%). This suggests that these carcasses may potentially remain infectious with ASFV and FMDV in situ under the experimental conditions encountered, based on the inactivation thresholds selected. Despite this, culling large portions of a feral pig population, in conjunction with D&LL disposal approach, may still support disease control imperatives during an EAD response by reducing live pig numbers and disease transmission. The specific disposal method/s adopted during an EAD response will need to be considered in the context of the outbreak, location and environment.

Biography

Brendan is a veterinary epidemiologist and Executive Director of Ausvet Pty Ltd.

He started his working career as a cattle veterinarian, before moving into research with a PhD in feral pig control and then looking at disease transmission between cattle and feral pigs. He now does a variety of biosecurity and epidemiology work across the globe and in Australia.

Applying One Health to feral pig management in Australia: challenges and opportunities

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Abstract

It is estimated that feral pigs occur on up to 45% of Australia's land mass. Feral pigs carry over 30 pathogens and over 30 different types of parasites, including pathogens that can affect human health, the agricultural industry, and the environment. Pathogens carried by feral pigs can be transmitted to people via food, water, direct contact, and vectors such as mosquitoes or ticks. One Health is based on the understanding that health and wellbeing for humans, animals and the environment are interdependent. One Health involves multisectoral collaboration and coordination with communities, land managers, scientists, traditional knowledge holders and policy makers. One Health can be applied to complex issues including zoonotic diseases (diseases passed from animals to people or vice versa), antimicrobial resistance, climate change, water and food security, and biodiversity loss. Feral pigs are associated with each of these.

An example of a One Health issue involving feral pigs is the waterborne transmission of zoonotic diseases, such as parasites like Cryptosporidium and *Giardia* spp. Feral pigs carry these widespread and abundant parasites and can contaminate water sources via faecal contamination and wallowing behaviour. This poses risks to humans who swim in or hand wash using contaminated water and is particularly concerning for remote and very remote Indigenous communities. Animals and people infected by these parasites can become extremely sick, they are very infectious and easily passed on to others and can have long-term consequences for children's development.

The increase in feral pig populations is occurring at the same time as climate change and biodiversity loss and together they are influencing the patterns of zoonotic diseases. The One Health approach is beginning to gain traction in Australia, but to the best of our knowledge, has not yet been applied in the context of feral animal management. Working in a One Health approach to improve our knowledge of health impacts from feral pigs including the pathogens they carry and their prevalence in the landscape, specific disease transmission pathways and appropriate prevention methods is urgently needed. In this talk, we will discuss the potential to apply One Health in the management of feral pigs in Australia, including the challenges and benefits of adopting this approach.

Biography

Joanne is Wildlife Health Australia's Capacity Building Program Manager. Jo is a graduate of Flinders University with Doctorate and Master's in public health. Her doctoral thesis explored the nexus between ecological public health and sustainability in rural communities in Australia. Jo has over twenty years of experience in the health sector. She started her career as a Registered Nurse and Midwife before moving into management, research, policy development and advocacy roles. Jo's work is focused on increasing awareness, collaboration and coordination and building partnerships and networks for One Health. Jo is also working with people working in feral animal surveillance and management and is raising awareness of how feral animals impact human health.

Modelling the potential for spillover transmission of emergency animal disease between feral pigs and livestock

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Abstract

Introduction - If an emergency animal disease such as African swine fever (ASF) or foot-and-mouth disease (FMD) were to enter the feral pig population in Australia it is unclear whether it would establish and pose an ongoing threat to livestock. Epidemiological models can assist in the formation of policy for emergency animal diseases such as ASF and FMD, especially when local empirical data does not exist and field studies are not possible or practical.

Materials and methods - The Australian Animal Disease Spread model (AADIS) is a national-scale agent-based model used by animal health authorities in Australia to support disease planning and preparedness. The model was expanded to better represent the potential for spillover of emergency disease between feral pigs and livestock. The feral pig population was modelled as discrete sounder agents with home ranges that vary seasonally and regionally. Domestic cattle, sheep and pigs were modelled as farm agents with spatial risk areas for direct or indirect contacts with feral pigs. Spillover transmission of disease was possible when feral pig home ranges and farm risk areas overlapped in time or space. The control option of feral pig population reduction in or near declared areas of infection was implemented with configurable duration, effectiveness, periodicity and cost, and considered remoteness and accessibility.

Results - The degree of spillover transmission between livestock and feral pigs was dependent on production system characteristics, on-farm biosecurity, feral pig density, contact rates between feral pigs and livestock, and regional and seasonal influences on feral pig carcass decay.

Discussion - The potential for spillover transmission between livestock and feral animals is a complex problem in time and space, especially in the context of a large country such as Australia with diverse ecological regions and production systems. The AADIS model can help explore the potential spread and control of emergency animal diseases in both domestic and feral populations. The project highlighted the importance of credible estimates of feral pig distribution and abundance, and identified variables that were influential in the simulated spread of emergency disease under Australian conditions. Some of these variables such as feral pig home ranges, direct/indirect contact rates between livestock and feral animals, and the role of infectious carcasses in transmission are not well understood on a national scale. The parameterisation of the model and its utility for decision support will continue to benefit from field studies characterising regional and seasonal influences on feral pig ecology and the nature of direct and indirect contacts with livestock.

Biography

Associate Professor Richard Bradhurst is a Principal Research Fellow at the University of Melbourne and a Chief Investigator at the Centre of Excellence for Biosecurity Risk Analysis (CEBRA). Richard works with veterinary epidemiologists and animal health specialists from over 20 countries developing the Australian Animal Disease Spread model (AADIS) (www.aadis.org.au) and the European Foot-and-Mouth Disease Spread Model (EuFMDiS). These models assist in planning and preparedness for emergency animal diseases by simulating incursion, spread, detection, control, and proof-of-freedom.

A national map and dataset of feral pig current distribution in Australia (2024)

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Abstract

Feral pigs are recognised as one of the most damaging invasive species in Australia because they harm ecosystem integrity, threaten cultural heritage, are an economic burden in agricultural cropping systems, and are a known host of significant disease-causing pathogens. Despite being established in every state of Australia except Tasmania, existing national maps of distribution and abundance are based on incomplete and outdated data. This is largely due to disparate data sources being held by many different stakeholders across jurisdictions. CSIRO and ABARES have been collating diverse data sets across Australia for priority vertebrate pests and weeds and developing Integrated Species Distribution Models ('ISDM') to improve the reliability of estimates of their distribution. Here, we present a new national map and dataset of feral pig current distribution in Australia (2024).

We collated 21 presence-only, six presence-absence, and three abundance-absence datasets of varying spatiotemporal extents across Australia, including aerial and camera-trap surveys, as well as observations from atlases and targeted control operations. We fitted a static ISDM whereby feral pig current distribution varied with six covariates as fixed effects and a spatial random effect, as well as a sampling effort layer to correct for bias in the presence-only data. The model provides quantitative and spatial estimates of feral pig current distribution and relative abundance, as well as associated uncertainties across Australia, at a spatial resolution of 25 km^2. Importantly, our reproducible workflow allows estimates to be updated as new information becomes available. The publicly available national map and spatial dataset fills an important knowledge gap identified by the National Feral Pig Action Plan, which is useful for diverse stakeholders, e.g. as an input into disease risk and spread models, a communication and engagement tool, or to support strategic decisions about research, monitoring and management activities.

Biography

Jens is a landscape ecologist with research expertise in biosecurity and biological invasions, data integration, spatial analysis, risk modelling and structured expert elicitation. He specializes in developing methods, workflows and tools to enable adaptive management of invasive species and other biothreats for improved on ground and policy outcomes. Jens serves as a member on the Scientific Advisory Panel to the National Feral Pig Action Plan.

Unravelling the swine web: decoding feral pig networks for disease prevention in Australia

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Abstract

Feral pigs pose a significant threat to wildlife and inflict substantial economic damage to Australian agriculture. They also serve as potential hosts for numerous infectious diseases, including foot-and-mouth disease (FMD), swine vesicular disease, Aujeszky's disease, African swine fever (ASF), and classical swine fever, all which are exotic to Australia.

National preparedness for the incursion of these diseases hinges on the development and validation of disease transmission models. Estimating contact rates between individual animals is crucial to support valid transmission models. However, current models rely on contact rates from feral pig populations outside Australia, which may not adequately represent within and between Australian feral pig social units (sounders).

This study aims to fill this gap by quantifying interactions within and between feral pig sounders in Queensland and New South Wales. We utilized GPS-tracking data from feral pigs and employed network analysis to estimate direct and indirect contact rates for each year, season, and pig population. Our datasets were fitted to a continuous-time movement model (CTMM) to infer trajectories at a finer scale (five-minute intervals). We also examined the impact of varying distance thresholds on determining direct or indirect contact and explored factors that may influence contact rates, such as sex, season, and location.

Our analysis of 139,940 location fixes from 146 animals tracked from 2017 to 2023 revealed that the majority of direct (96%) and indirect (69%) contacts occurred within the same sounder. Indirect contacts within and between sounders were most prevalent during winter and less in summer. The sex of the dyad significantly influenced the contact rate. Our results provide locally relevant estimates of contact rates to support disease modelling. Importantly, our findings also underscore the importance of considering demographic and seasonal variations when estimating contact rates, given they will significantly affect contact rates and likely the dynamics of disease transmission.

Biography

Dr. Tatiana Proboste is a Research Fellow at the Spatial Epidemiology Lab (UQ), specialising in zoonotic disease transmission and spatiotemporal analysis. Her work utilises spatial models and network analysis techniques to enhance our understanding of disease transmission dynamics, particularly within wildlife populations and at the wildlife-human interface. Dr. Proboste has been involved in projects ranging from the molecular detection of tick-borne pathogens to the development of tools for exploring wildlife's role in disease transmission. Recent years have seen her focus on investigating mosquito-borne disease outbreaks, identifying Q fever clusters in Queensland and associated risk factors, and applying network analysis to estimate contact rates in feral pig populations in eastern Australia. In addition to her research, Dr. Proboste is a casual lecturer at the School of Veterinary Science. She is also part of the Centre for Biodiversity and Conservation Science, Q fever Interest Group and the HEAL Network.

Feral pig (Sus scrofa) activity areas across Australia for integration into disease spread models

Deane A Smith[1], Paul D Meek[2], Darren Marshall[3], Lachlan Marshall[3], Matthew Gentle[4], Aiden Sydenham[4], Andrew Bengsen[5], Peter Adams[6], Stuart Dawson[6], Justin Perry[7], Andrew Hoskins[8], James Templeton[9], Matthew Pauza[10], Stephanie Mahon[11], Richard Bradhurst[12], Peter Fleming[13]

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Abstract

Understanding the movement patterns and activity areas of pest vertebrate species is crucial for managing their impact on ecosystems and, in some cases, critical in controlling the spread of diseases. Feral pigs (*Sus scrofa*) are managed as a pest species in Australia because of the impacts they have on the environment and agriculture. There is additional interest in this species due to the potential they have to spread disease, such as Foot and Mouth Disease (FMD). In this study, we aggregate GPS collar datasets collected from feral pigs across various landscapes in Australia. We use this data to assess activity areas and discuss environmental factors that may contribute to the size of activity areas and movement distances. Our analysis revealed significant variability in movement behaviours, even within sites. In total, we aggregated 520 feral pigs collar data sets, across all states and territories, except SA and ACT. Feral pigs were found to mostly have relatively small home ranges and movement distances. However, within most sites, individual pigs with atypical long-distance movements or much larger home range sizes were recorded. By integrating these empirical movement data into disease spread models, we could enhance the accuracy of predicting outbreaks and designing targeted control measures. This knowledge is vital for developing effective strategies to mitigate the environmental and economic impacts of feral pigs and to prevent the transmission of diseases to livestock.

Biography

Deane joined the NSW Department of Primary Industries and Regional Development (DPIRD) in 2021, where he has worked across several projects, primarily on animal movement. His current focus is on the Exotic Animal Disease Preparedness Project, where he is working on feral pig movement. Prior to his appointment to DPIRD, Deane worked in the private sector on a range of projects including effects of exclusion fences to non-target fauna, feral horse impacts, threatened fish translocation, rock-wallaby surveys and dingo genetics.

Picking the low hanging fruit, practical applications of distribution modelling and telemetry datasets

Andrew Morton

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Abstract

Distribution modelling and movement ecology provide critical insights for land managers designing feral pig control programs by providing a deeper understanding of the distribution, movements, and habitat preferences of feral pigs. Beyond their research value, these data can have many practical applications when directly integrated into control methodology, improving program targeting and efficiency. Understanding the distribution of target species is important when planning control, and by utilising high resolution spatial datasets, models can be produced with enough granularity to allow the identification of specific landscape features that may harbour feral pigs.

These models can also be used to identify areas where isolated populations persist and the corridors that facilitate movements between them. Since pigs typically invade new areas slowly (excluding translocation events), targeted control in these locations could delay re-establishment, even without further investment in control, although with minimal ongoing investment in monitoring and responsive control, re-establishment may be prevented indefinitely.

While distribution models can be used to identify suitable habitat, suitability does not guarantee habitation. For nearly 40 years, radio telemetry has been a cost-effective tool for locating herds during culling operations and as GPS tracking technology becomes increasingly reliable, land managers should consider incorporating a tracking component into their programs. GPS telemetry can enhance culling efficiency by identifying, with high accuracy, which specific landscape features within the available habitat are being used by local pigs. Additionally, collared animals can assist in locating herds in the field during culling efforts.

With limitations on available resources, it is important that effort is directed where it will have the greatest impact

This presentation will explore these ideas, drawing on unpublished data from a recent study conducted of distribution and movements in the Kimberley region of Western Australia.

Biography

Andrew is an ecologist and land management practitioner working in Northern Australia. His recent work has largely focused on fire and feral animal management in the Kimberley region.

Hit them so hard they can't get backup: population modelling to optimise harvest strategies for feral pig eradication on Kangaroo Island

Peter Hamnett[1], Frédérik Saltré[2], Brad Page[3], Myall Tarran[3], Kate Fielder[3], Matt Korcz[3], Lindell Andrews[3], Corey JA Bradshaw[1]

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Abstract

Prior to the catastrophic bushfires of summer 2019/2020, Kangaroo Island had ~5000 feral pigs causing economic losses of $1M per year and major environmental damage. The fires had a devastating impact, burning nearly half of the island. However, the fires also reduced the feral pig population by about 90%, presenting an opportunity to eradicate them. Led by the Department of Primary Industries and Regions (PIRSA) and the Kangaroo Island Landscape Board, the Feral Pig Eradication Program mobilised support from various government departments and landholders. Using thermal-assisted aerial culling, ground-shooting, trapping and baiting to eliminate the remaining pigs before the population was able to recover, this is potentially the largest successful island-wide eradication program in the world.

To support good decision making, we simulated feral pig eradication options by: (1) varying the rate of removal to exceed the population's rate of increase; and (2) calculating the cost and effort per animal as pigs became scarcer. Our model indicated it was necessary to remove at least 80% of the population each year to achieve eradication within the project's 3-year timeframe. Comparing predicted costs among control methods, we identified that ground-based shooting was the most cost-effective strategy for achieving the eradication target, while also revealing that eradication could be achieved by any of the available control methods within the program budget and timeframe. In practice, we recommend using a combination of control techniques, encouraging the most cost-effective means where the landscape permits, and more expensive aerial control where access is difficult. Annual removal rates should be maximised from the beginning of the control program to achieve rapid population reduction. The eradication program applied the findings of our model — hit the remaining population hard and early before it could recover. This strategy appears to have been successful, and the program has now progressed to its final stage: demonstrating proof of eradication. Eradication of feral pigs from Kangaroo Island is widely regarded as the single biggest silver lining that resulted from the island's bushfire recovery.

Biography

Peter is a PhD student in the Global Ecology Lab, Flinders University, researching the use of ecological and economic models to support decision making on the South Australian Feral Deer Eradication Program.

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Developing an ACCU Scheme method to manage feral ungulates in wetlands.

Justin Perry[1], Catherine Lovelock[2], Jack Hill[2]

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Abstract

Australian wetlands are important cultural sites and provide critical ecosystem services, including carbon sequestration and greenhouse gas emissions abatement. However, these wetlands are readily and regularly degraded by feral ungulates, including pigs, which reduces their ecosystem function. We are developing a new Australian Carbon Credit Unit (ACCU) Scheme method which will provide saleable carbon credits for projects that manage feral ungulate impacts in wetlands.

In this presentation, we review the evidence for the draft method, including the impact of feral ungulates on greenhouse gas emissions across Australia, and spatially explicit on-ground and satellite imagery methods for monitoring feral pig impact and management efforts. With a focus on pigs in northern Australian wetlands, we showed that emissions of carbon dioxide, methane and nitrous oxide were higher at ungulate disturbed sites, especially in wet soil conditions, suggesting that feral ungulate control delivers a carbon abatement benefit. We also outline the structure of the draft method and ongoing method development process, including an invitation for conference attendees to engage as interested stakeholders. Inclusive development of a rigorous ACCU Scheme method for feral ungulate control in wetlands could provide sustainable, long-term funding for this important management action in Australia's wetlands.

Biography

Jack is a marine ecologist with a passion for coastal vegetated ecosystems, fieldwork and foregrounding Indigenous knowledges. He lives and works on Yagera, Turrbal and Quandamooka Country in south-east Queensland. He is currently supporting the development of a new Australian carbon market method that Traditional Owners could use to earn income while keeping their wetland Country healthy, by managing feral ungulates. During his PhD, he was excited by the unique physical structures of mangrove trees and roots, and how they allow these forests to survive in the dynamic intertidal zone.

Achieving rapid removal and local eradication of feral pigs: methods to improve impact and exotic disease management outcomes

Tarnya Cox[1], Michael Leane[2], Rod Baker[2], Jessica Sparkes[1], Robert Matthews[3]

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Abstract

The control of feral pig populations could play an important role in minimising exotic disease transmission and maintenance in Australia. Rapid removal of pigs (>95% of the population) through aerial control would be a key component in a Foot and mouth disease (FMD) or African swine fever outbreak. Aerial culling from a helicopter is the most common landscape-scale pest control tool used to control pigs.

The current standard method of finding pigs in aerial culling is the habitat-informed approach. Habitat-informed searching is based on knowledge of the animal's habitat preferences, where the crew search pockets of land where they think target animals are likely to be in the landscape. This is an effective approach for management of pig populations, however, there are no reports of a program ever achieving >90% reduction. We investigated the use of a systematic (with thermal) search pattern, where transects are overlaid within the target area to achieve complete coverage, as an approach to achieve >95% reduction in pigs. The systematic search approach reduced the pig population by 96.8%. The results also suggest that with further flights, local eradication of pigs could have been achieved.

The total cost of the systematic search to achieve FMD eradication was AU$12.57 ha^{-1}. The cost to achieve a >75% reduction for ongoing management was AU$5.97 ha^{-1} and the minimum cost to undertake the systematic program was AU$2.03 ha^{-1}. When compared to the habitat-informed search method (both visual-only and with thermal), the thermal habitat-informed approach was the cheapest with an average cost of AU$1.69 ha^{-1} (range AU$0.76–AU$2.34 ha^{-1}) and had the highest rate of pigs hr^{-1} removed. However, it only achieved a 59% reduction in the feral pig population.

The choice of search pattern in an aerial culling program can greatly affect a programs efficacy and outcome. A systematic-with-thermal search approach can result in cost-effective and rapid local removal of pigs for elimination of an exotic disease outbreak. Further, the addition of thermal equipment to a habitat-informed program can substantially reduce costs per ha by increasing the number of pigs detected and removed. Our results demonstrate that rapid removal of feral pigs both for management and for the localised control of an exotic disease such as FMD is achievable and that the addition of a thermographer improves program outcomes.

Biography

Tarnya Cox is a Research Scientist with the Vertebrate Pest Research Unit in the NSW Department of Primary Industries and Regional Development. Tarnya has worked on improved biological control of the introduced European rabbit through the introduction of an additional strain of rabbit haemorrhagic disease virus and landscape-scale feral cat management. Tarnya's main field of research is in the use of thermal imaging technologies to improve animal detection and how these technologies can be used to improve pest animal management methods and outcomes.

Biodiversity enhancements from controlling feral pigs, buffalo and cattle in wetlands in Australia.

Valerie Hagger, Catherine Lovelock, Jack Hill, Renee Rossini

The University of Queensland, St Lucia, QLD, Australia

Corresponding author: Valerie Hagger, v.hagger@uq.edu.au

Abstract

Feral pigs, buffalo, and cattle (ungulates) disturb wetland soils and vegetation, reducing biodiversity, water quality and cultural heritage values. Studies in wetlands in northern Australia have shown that removal of feral pigs can increase vegetation cover, plant species richness, and recovery of rare species. Despite the widespread damage feral ungulates cause, funding for management has been inadequate to address the problem. Payments for carbon abatement by removing feral ungulates from wetlands may provide a stream of finance that could support long term management of feral ungulates. Improved data on the biodiversity enhancements from controlling feral ungulates is needed to support a new carbon method in Australia and the emerging nature market.

We conducted field surveys of feral pig, buffalo and cattle impacts on wetlands with Traditional Owners in Kakadu National Park, Northern Territory and Wunambal Gaambera Country, north-west Western Australia and with the local council in the Whitsunday Coast, north Queensland. We surveyed a range of wetland types such as billabongs and riparian areas on coastal floodplains in areas that were impacted and less impacted by feral ungulates. We assessed the percentage of physical ungulate damage around the edge of waterbodies and sampled vegetation and habitat condition of the wetland vegetation (e.g. swamp forest, floodplain grassland, and riparian forest) and the adjacent dryland vegetation (e.g. savanna woodland). We also assessed the communities of two focal groups of fauna – invertebrates and insectivorous bats, which are integral to wetland processes. Ant species diversity was assessed in dryland vegetation, and aquatic macroinvertebrates in suitable habitat (waterbodies) near wetland vegetation. Bat species and bat activity across the wetland sites were identified using acoustic bat recorders.

In this presentation, we will identify trends in vegetation structure, habitat condition, and diversity of plants, invertebrates, and bats across vegetation types with varying levels of damage by feral ungulates. We will also discuss some of the issues with detecting local-scale impacts of feral ungulates on biodiversity across different wetland typologies with widespread damage.

Biography

Dr Valerie Hagger is an ecologist and conservation scientist based at The University of Queensland, Australia. Her research informs coastal wetland conservation and restoration by identifying drivers of ecosystem change, opportunities for restoration, and benefits for biodiversity and carbon abatement. As a UN Ocean Decade Action, her AXA-UNESCO research fellowship is exploring how community- and Indigenous-based management of mangrove forests can enhance their conservation and restoration. She leads research projects on developing biodiversity assessment methods for coastal wetland restoration, assessing the feasibility of coastal wetland restoration across regions with Indigenous groups and local governments, and characterising carbon abatement and biodiversity enhancements from controlling feral animals in wetlands. She has 20 years of industry and research experience in environmental management, biodiversity conservation, and ecological restoration.

Genetic biocontrol options for feral pigs.

Stephen Frankenberg

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Abstract

Invasive vertebrate pests, including feral pigs, continue to have a devastating impact on Australia's natural environment, biodiversity, and agricultural productivity, providing a compelling case for finding a 'silver bullet' to the problem. Genetic biocontrol has the potential to humanely suppress, or even eradicate, vertebrate pest populations.

Our research focusses on two main obstacles to the application of genetic biocontrol in Australia: (i) optimising the design of effective genetic biocontrols, including self-sustaining "gene drives"; and (ii) developing efficient pipelines for producing individuals with targeted integration of large DNA constructs in non-model species. For the first objective, we are using the zebrafish as a model to optimise the design of 'homing gene drives' for rapid spread through a target population. By targeting a gene essential for female fertility, gene drives are predicted to humanely suppress or even eradicate a pest population. For the second objective, we are developing stem cell resources and assisted reproduction technology (ART) workflows for efficient production of genetic biocontrol embryos of multiple non-model mammal species, which can then be cryopreserved for later establishment of captive breeding populations and then field deployment. With the current rate of progress and pending funding, we expect that production of captive breeding populations for deployment of 1st-generation genetic biocontrols could be achievable for at least some species, including feral pigs, within the next 2-3 years.

Biography

Stephen Frankenberg is a research fellow in the School of BioSciences at the University of Melbourne. His interests encompass early development, stem cells, and reproductive biology of vertebrates (especially marsupials), including the application of genomics and CRISPR editing. Most of his current research projects share the common theme of applying genetic engineering to solving problems in conservation and biodiversity, including genetic biocontrol for invasive pests, cane toad toxin resistance in threatened northern quolls, transgenic immunity to chytridiomycosis in amphibians, and (with Prof. Andrew Pask) de-extinction of the thylacine.

Exploring the use of thermal in aerial culling in northern Queensland.

Matthew Gentle[1], Aiden Sydenham[1], Bren Fuller[2]

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Abstract

Aerial culling can be a highly effective method for reducing populations of medium-large sized-herbivores such as feral pigs and deer. When populations are at high densities and habitats permit high detection probability (e.g. open habitats with sparse canopy cover), harvest rates (i.e. animals shot/hr) from aerial shooting are typically high. However, particularly in habitats with dense or complex canopy cover, or where there are fewer animals, detecting and dispatching animal groups becomes increasingly difficult and more time-consuming. Tools or technologies to increase the detection of animals may improve the efficiency of aerial culling programs (e.g. animals detected and removed per hour of flying) but require consideration to ensure that they remain cost-effective against more conventional approaches.

In southern Australia, the use of thermal-assisted aerial culling can dramatically increase the efficiency and improve program outcomes. This technique uses a thermal camera operator to help locate groups of animals that can be then dispatched by the aerial marksman. A modified approach using a thermal camera operator may assist aerial culling in deer and pig- affected areas in northern Queensland but remains largely untested under such contrasting landscapes and (typically warmer) climatic conditions.

Biosecurity Queensland (BQ) are collaborating with a Whitsunday Regional Council (WRC) control program to examine the potential of thermal to assist aerial control operations for feral deer (and pigs) near Collinsville, northern Queensland. An experienced contractor provides guidance to the marksman (i.e. shooter) via a thermal camera. Collinsville is an appropriate test site with deer and pigs sheltering in heavy vegetation cover (rubber vine, tall grass, tree canopy) along river courses - as well as in the more open areas. This assessment will help to determine whether the use of a thermal camera is suitable in these areas, can be incorporated into existing programs, and the benefits compared to conventional aerial culling methods. This will assist to optimise control practices to better inform end-users.

This presentation discusses the importance of the information sought, the approach and the results of this initial assessment to date. This work is supported through funding for deer control through the National Feral Deer Management Coordination Program, WRC and BQ.

Biography

Matt Gentle is a Principal Scientist with the Pest Animal Research Centre, Biosecurity Qld in Toowoomba. After studying at the University of Queensland, Matt started his career at the New South Wales DPI Vertebrate Pest Research Unit and subsequently completed his PhD with the University of Sydney. His career has since focused on investigating the impacts and improving the effectiveness and safety of managing vertebrate pests, including foxes, wild dogs, feral cats and feral pigs.

Passive acoustic detection: a new tool in the feral pig monitoring toolbox.

Nina Scarpelli[1], Simon Linke[1], Stewart Macdonald[2], Maryam Golchin[2], Jens Froese[1]

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Corresponding author: Nina Scarpelli, nina.scarpelli@csiro.au

Abstract

Passive acoustic recorders have increasingly been used for monitoring biodiversity. These sensors are deployed in the field and continuously record all the sounds produced in the surrounding environment. The collected sounds are later analysed through different techniques and a range of taxonomic groups such as birds, mammals and insect species have been studied using this technology. Because the sensors are deployed in the field and left unattended, the method is considered non-invasive and it provides long-term data on wildlife removing observer bias. Acoustic technology offers an opportunity to complement camera traps for monitoring invasive pigs. In this study, we are working with Bush Heritage Australia in a proof-of-concept to assess the effectiveness of acoustics for (1) feral pig monitoring and (2) evaluating pig management for conservation outcomes.

We deployed 50 acoustic sensors, 10 camera traps, climatic data loggers and conducted local scale vegetation assessment on a property in Far-North Queensland, Australia. We are analysing 1 year of data using a machine learning algorithm for detecting pig grunts and squeals over the recordings. The results are being compared with camera trap detections and preliminary results indicate complimentary detections between sensors, with encroached mobs being better detected by acoustic recorders. The pig detections will then be linked to the other collected variables as well as management actions, such as fencing of water holes and pig removal. The detection rate will be compared between camera traps and audio recorders to determine the effectiveness of each method.

While camera traps are an already established method for feral pig monitoring and the images can provide additional information on individual recognition, the acoustic sensor records continuously and microphones have a detection radius wider than the camera, being able to survey a larger area continuously. With technology advancement, alert systems can be created so that the recorder can be deployed in remote areas and if pig presence is detected, alert messages are sent to land manager to go and check the area. If proven effective, acoustic recordings can also provide long-term trends for invasive species and be added to the land manager surveillance tool kit.

Biography

Nina Scarpelli is an ecologist working with acoustic technology for conservation. Originally from Brazil, she has completed a Bachelor and Master's degree in her home country and moved to Australia 6 years ago for a PhD at Queensland University of Technology. She is now a postdoctoral fellow at CSIRO experimenting the use of acoustic sensors to monitor invasive species and their impact in native wildlife.

3.30pm Wednesday 26 March 2025

Where to from here?

John Gavin, NFPAP Implementation Committee Chair, Remarkable NRM, QLD
Heather Channon, National Feral Pig Management Coordinator, Australian Pork Limited

Feral Pigs on Gunditjmara Country

Brad Williams, Stacey Koprdova, and Evelyn Nicholson

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Corresponding author: Brad Williams, brad@gunditjmirring.com; Stacey Koprdova, stacey@gunditjmirring.com; Evelyn Nicholson, evelyn@gunditjmirring.com

Abstract

A brief overview of Gunditjmara Country and places where we are controlling feral pigs, with specific focus on the World Heritage listed Budj Bim Cultural Landscape in south western Victoria will be provided. Much of the Budj Bim Cultural Landscape is cared for by Gunditjmara through the Budj Bim and Tyrendarra Indigenous Protected Areas and co-managed Budj Bim National Park, in partnership with Parks Victoria. Some of the challenges being faced with trapping pigs because of highly sensitive Gunditjmara sites out on Country and the risks to Country from disturbance by feral pigs will be discussed.

Biography

Brad is a proud Gunditjmara and Wiradjuri man who works for Gunditj Mirring Traditional Owner Aboriginal Corporation (GMTOAC) as an Invasive Species Officer. Stacey works for GMTOAC as an Invasive Species Officer. Evelyn Nicholson supports Gunditjmara to care for Country as GMTOAC's Budj Bim IPA and Planning Manager. With a background in environmental management, Evelyn leads a diverse team caring for Mirring (Country), Pareety (Water) and Weeyn (Fire).

Engaging with communities for feral pig control

Gavin Melgaard and Mick Freeman

Department of Energy, Environment and Climate Action, VIC, Australia

Corresponding authors: Gavin Melgaard: gavin.melgaard@deeca.vic.gov.au, Mick Freeman: michael.freeman@deeca.vic.gov.au

Abstract

Coordinated and collaborative Victorian State Government programs have been initiated to control and monitor feral pigs in the state's north east with a focus on community engagement and building local capacity. Feral pig populations in this region are becoming a growing problem to both private and public land managers. These programs are being delivered across several public land blocks, bordering private properties, pine plantations and farmland through Victoria's Protecting Biodiversity 2037 program and the Victorian Livestock Biosecurity Grant fund. The programs work closely with inter and intra agency programs, landholders and industry to mitigate impacts across land tenures and strengthen biosecurity.

Biography

Gavin has led invasive flora and fauna control programs in response to the 2020 Black Summer bushfires. Currently, he is managing fox and feral pig control programs in northeast Victoria, with an emphasis on collaboration and capacity building.

Since 2016, Mick has been coordinating community programs for the Vertebrate Species Management Program (Department of Energy, Environment and Climate Action) and working on collaborative approaches to mitigate on-farm impacts.

We would like to thank all our attendees (both in-person and virtual).

We hope to see you at a future National Feral Pig Conference!