

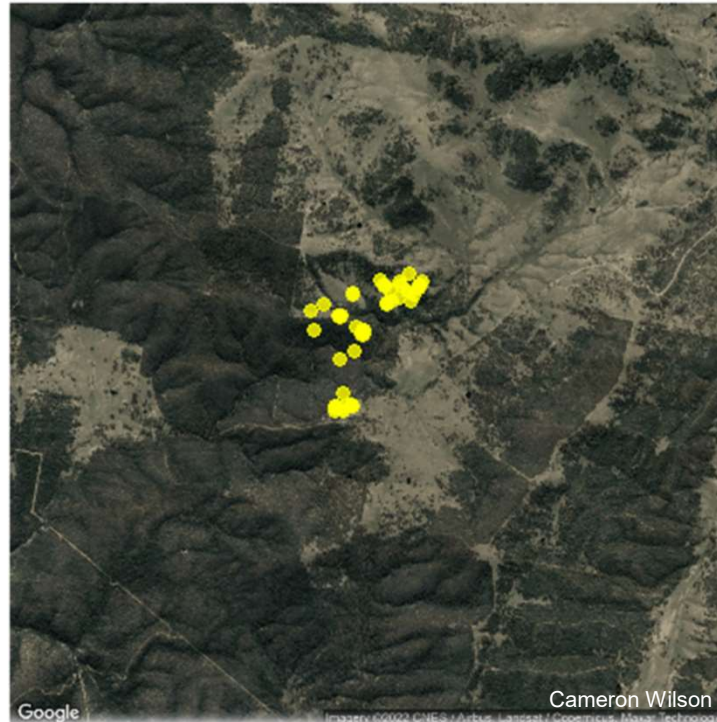


Human/Wildlife Conflict; The feral pig intersection between biophysical and human dimension research.



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Prof. Ted Alter (Penn State USA)
Dr. Matthew Gentle (DAFF Qld)
Dr. Guy Ballard (NSW DPI, UNE)
Prof. Paul Martin (UNE)

Palerang_Pig24 habitat movements



Lachlan Marshall, Darren Marshall, Aiden Sydenham.



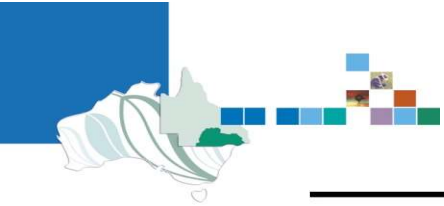
Feral Pig Impact – mixed enterprise landscapes

- Damage to agricultural assets
- Damage to environmental assets
- Biosecurity threat

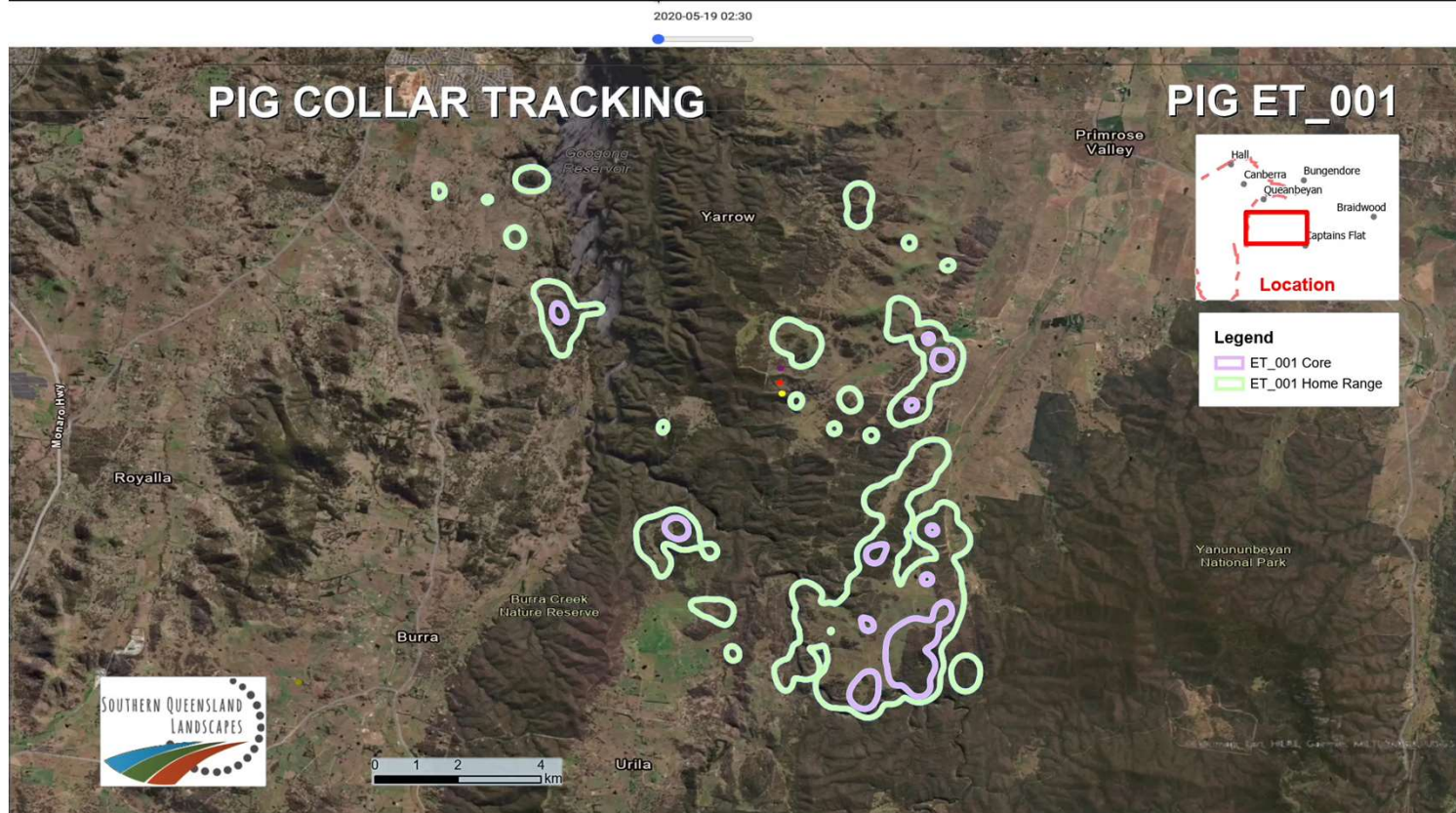




Can I use science (GPS Collars) as a platform to motivate land managers to work together and control feral pigs at a landscape scale.

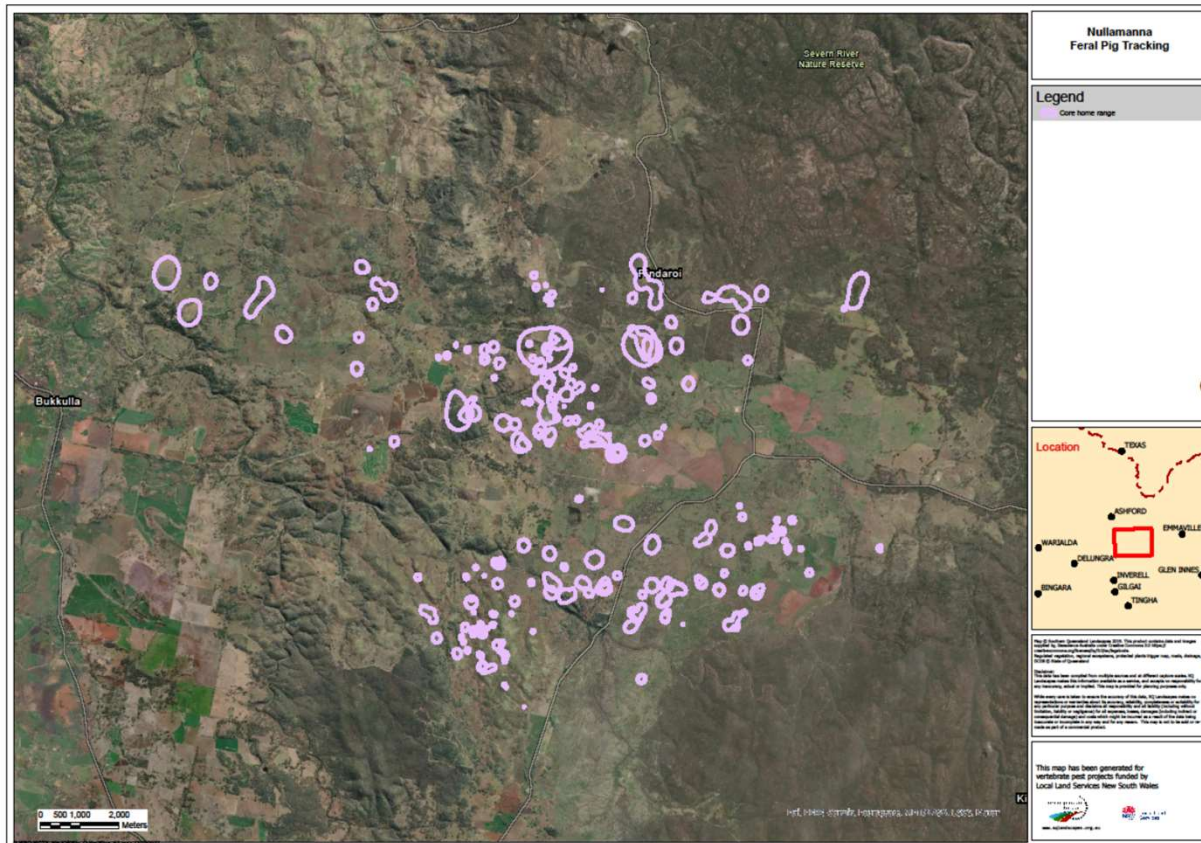


Home range and core home range movement



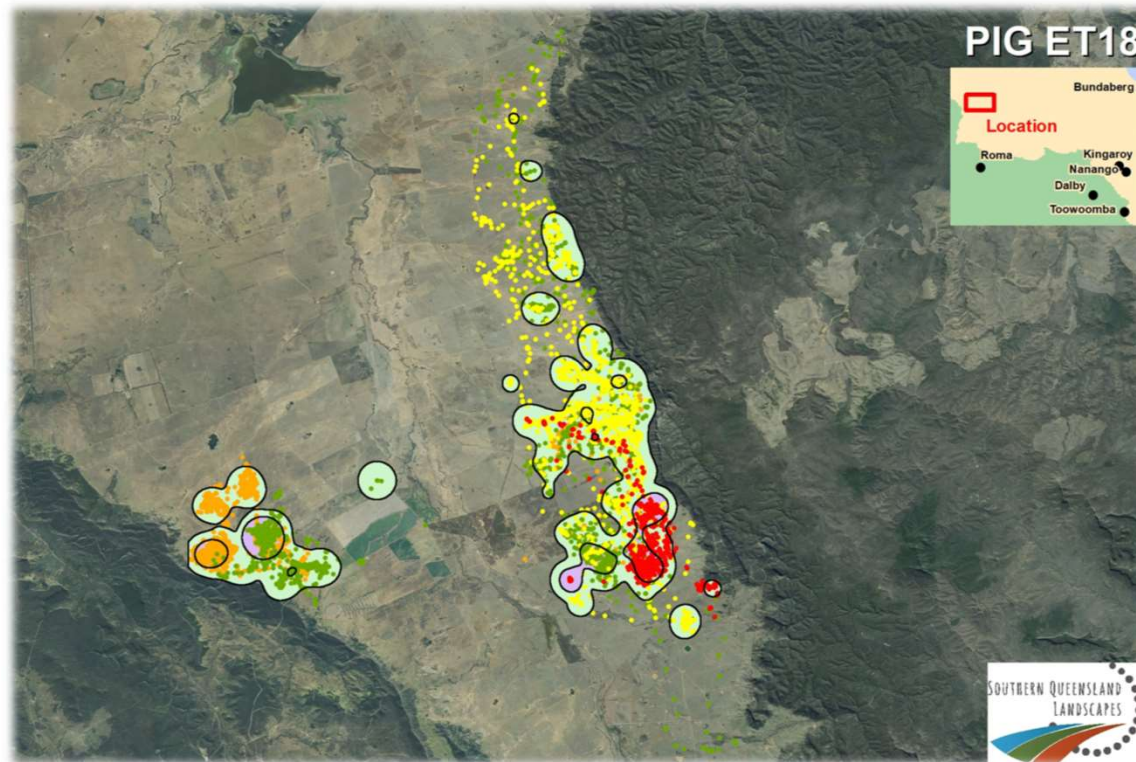


Core Home Range – district wide





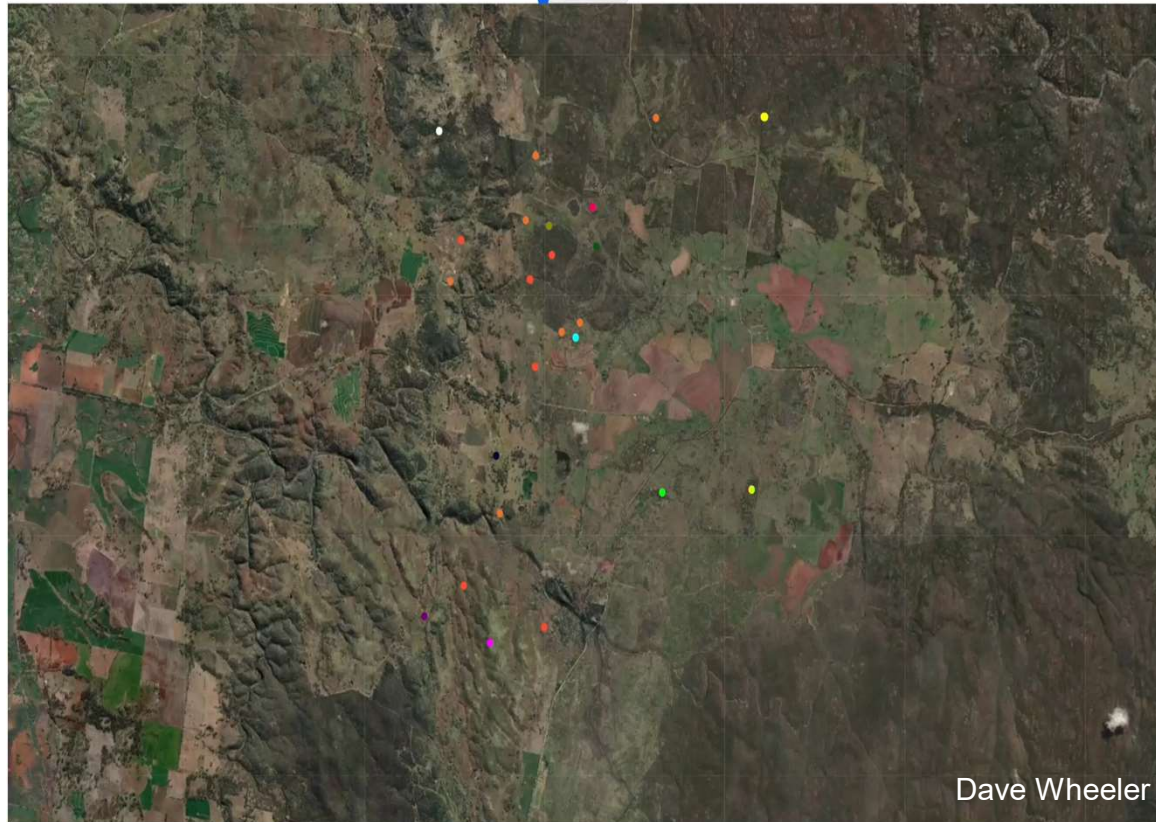
Seasonal variation





Landscape movement – Engagement Tool

2019-12-23 18:30



Dave Wheeler

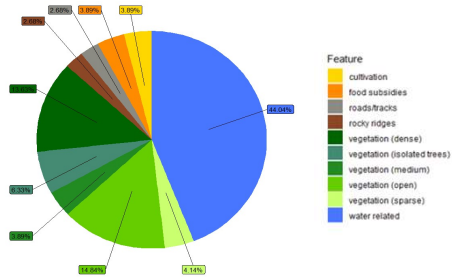


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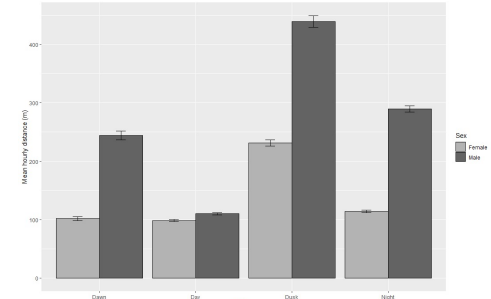


Biophysical Outcomes

Powerful partnerships: NSW Vertebrate Pest Research Unit
Biosecurity Queensland



Landscape features of highly revisited (recurse) sites



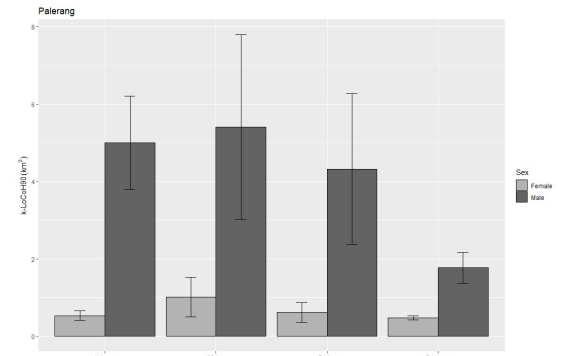
Average hourly distance (meters) by solar period

Temporal use of recurse sites



| Sex | Total km travelled | Average daily distance |
|--------|--------------------|------------------------|
| Male | 9,806 km | 4.99km |
| Female | 5,501 km | 2.72km |

| Sex | Home range (Km ²) | Core home range (Km ²) |
|--------|-------------------------------|------------------------------------|
| Male | 9.25 | 1.32 |
| Female | 0.85 | 0.11 |



Home range by season

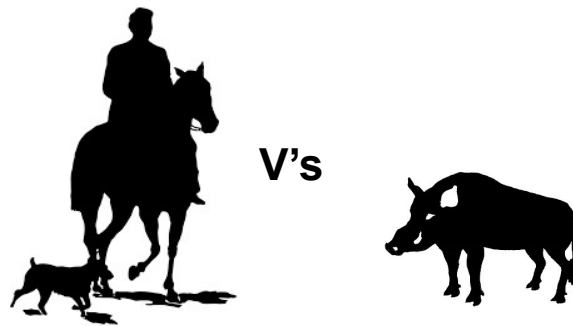


Current and complete GPS collaring sites





What impact are we having?





Do we need to think differently?



Biophysical Ecology



Human Dimension Ecology



Do we need to think differently?

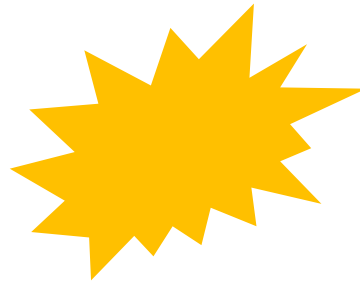


Biophysical Ecology



Human Dimension Ecology

Both are necessary



Neither alone is sufficient to influence change!



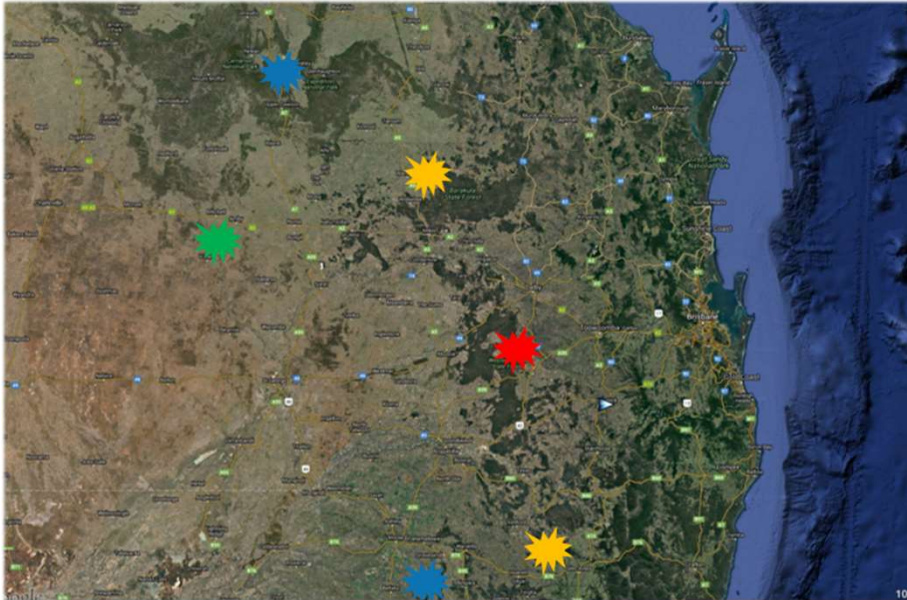
Research Objectives - Human Dimensions

- Assess the effectiveness and promise of alternative engagement interventions for managing feral pigs.
- Examine the effect of alternative engagement interventions on land manager and community member:
- **knowledge** of (1) the impact of feral pigs on agriculture, the environment and disease transmission, (2) feral pig management techniques, (3) coordinated control, (4) land manager and community responsibility for control, and (5) the ecology (movement patterns etc) of feral pigs.
- **attitude** toward (1) coordinated control and (2) land manager and community responsibility for control, of feral pigs.
- **trust** amongst (1) land managers within a community and (2) land managers have for researchers and practitioners.
- **networks** within a community, specifically weak ties between (1) land managers within a community and (2) land managers and researchers/ practitioners.
- Community-based research will increase voluntary participation in coordinated control events.









Research Design



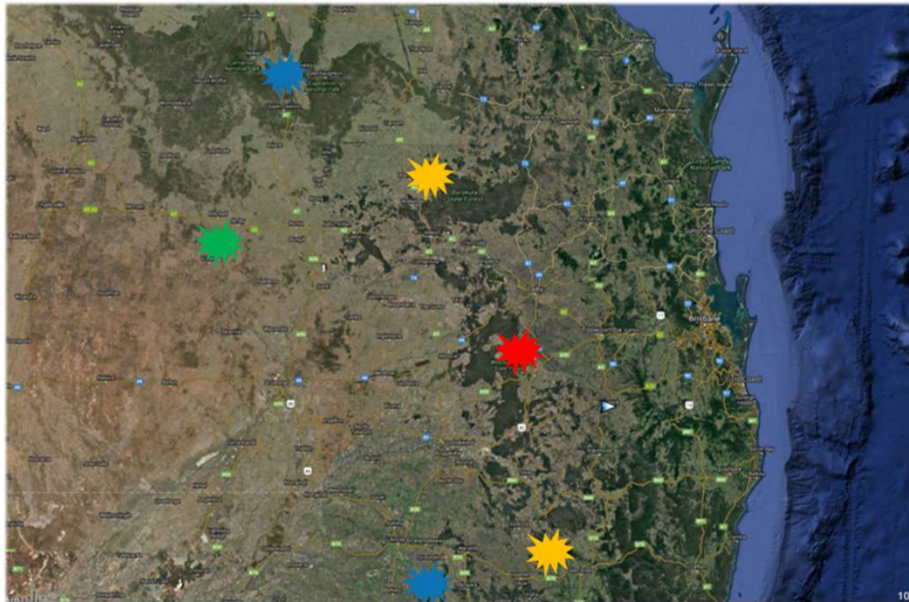
| | Research + | Research - |
|--------------|----------------------------------|---------------|
| Engagement + | Arcadia Valley Berrigal Creek | Butlers Creek |
| Engagement - | Nullamanna Downfall Creek | Dunmore |

-  Engagement (+) --- Research (+) = **Treatment 1 X 2 reps**
-  Engagement (-) --- Research (+) = **Treatment 2 X 2 reps**
-  Engagement (+) --- Research (-) = **Treatment 3 X 1 rep**
-  Engagement (-) --- Research (-) = **Control site X 1 rep**





Research Design



| | Research + | Research - |
|--------------|--------------------------------|-----------------------------|
| Engagement + | Thick "Integrated approach" | Thin "coordinator model" |
| Engagement - | Conventional "expert model" | Control |

- ★ Engagement (+) --- Research (+) = **Treatment 1 X 2 reps**
- ★ Engagement (-) --- Research (+) = **Treatment 2 X 2 reps**
- ★ Engagement (+) --- Research (-) = **Treatment 3 X 1 rep**
- ★ Engagement (-) --- Research (-) = **Control site X 1 rep**



Human Dimension Methods

- **Individual participant Surveys**
 - Quantitative analysis
 - Pre and Post survey at each site
 - Measure evolution within sites
 - Comparison of treatment sites
 - n=201 participants across all sites
- **Semi- Structured Interviews**
 - Qualitative analysis
 - Using Most significant change theory
 - N=21 participants across all sites
- **Community Profiles**

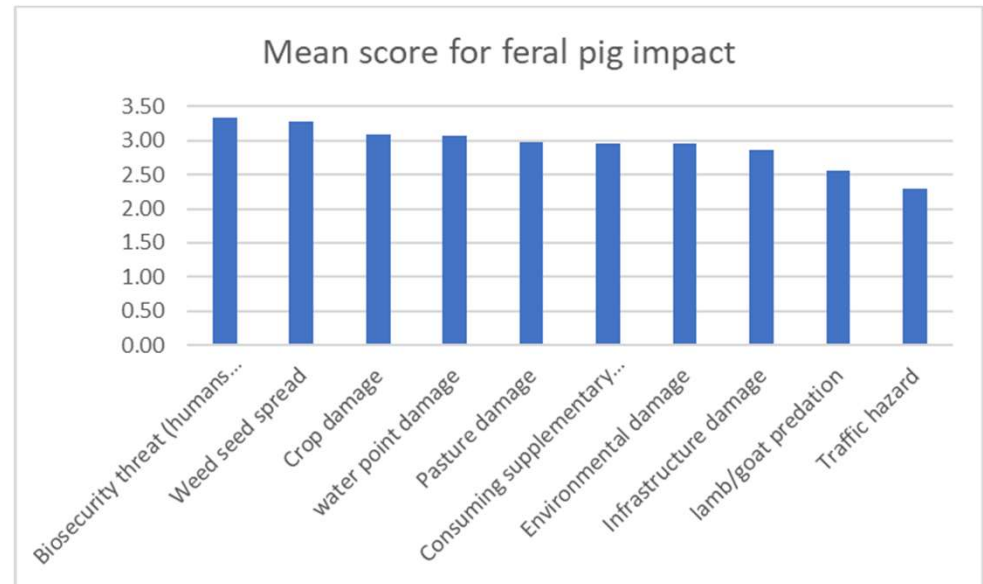




Preliminary Results

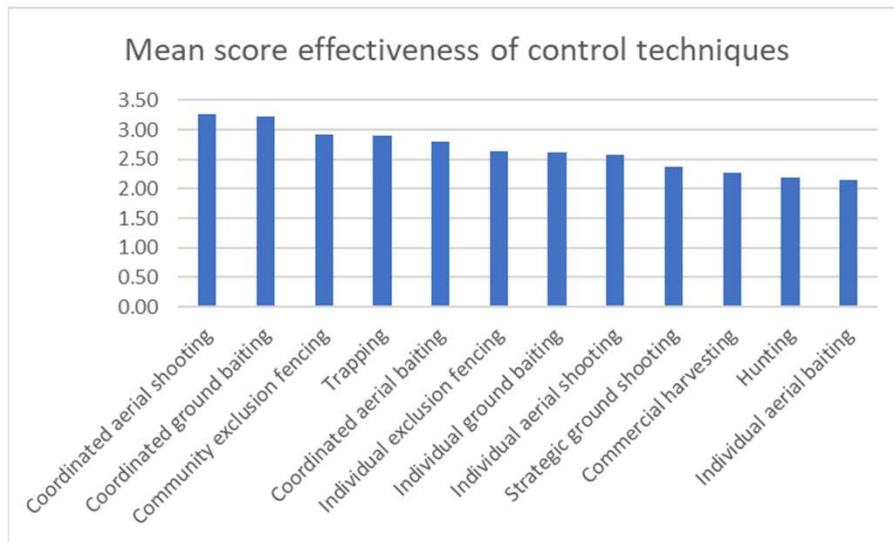


Lachlan Marshall



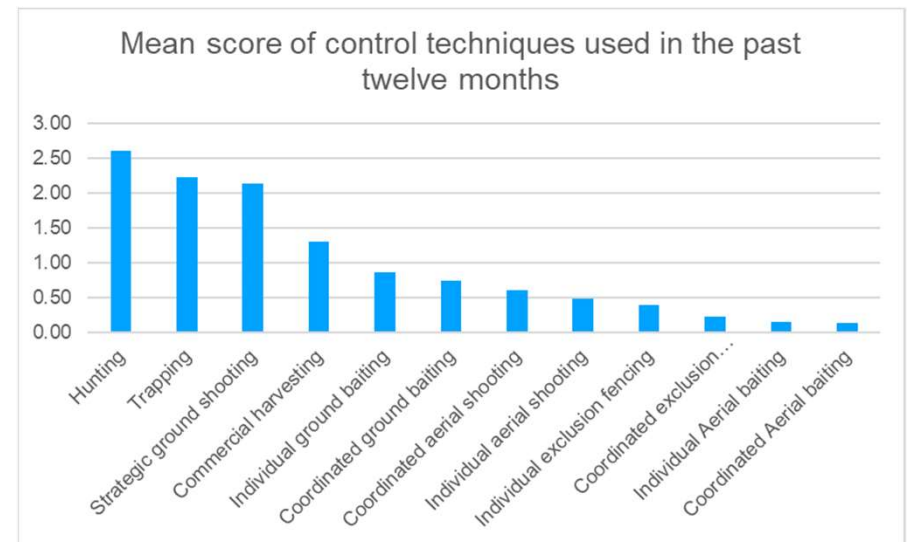
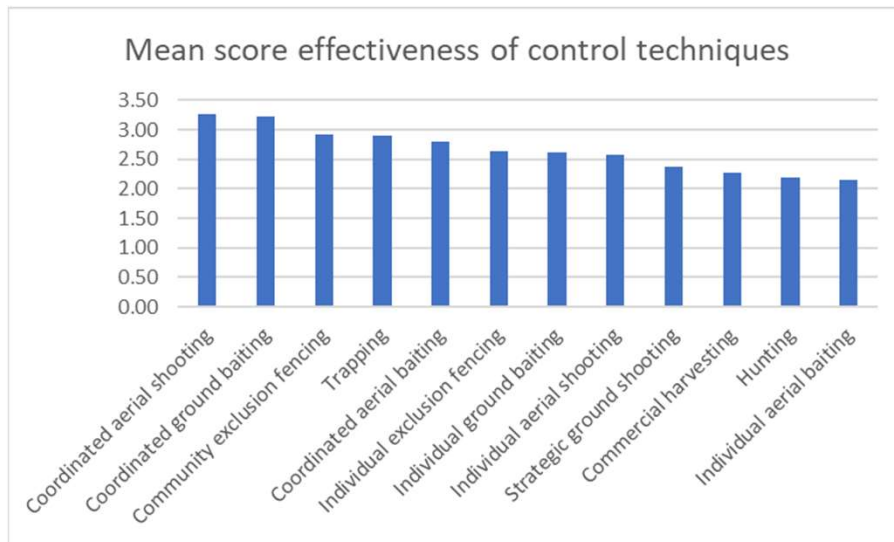


Preliminary Results





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Preliminary Results



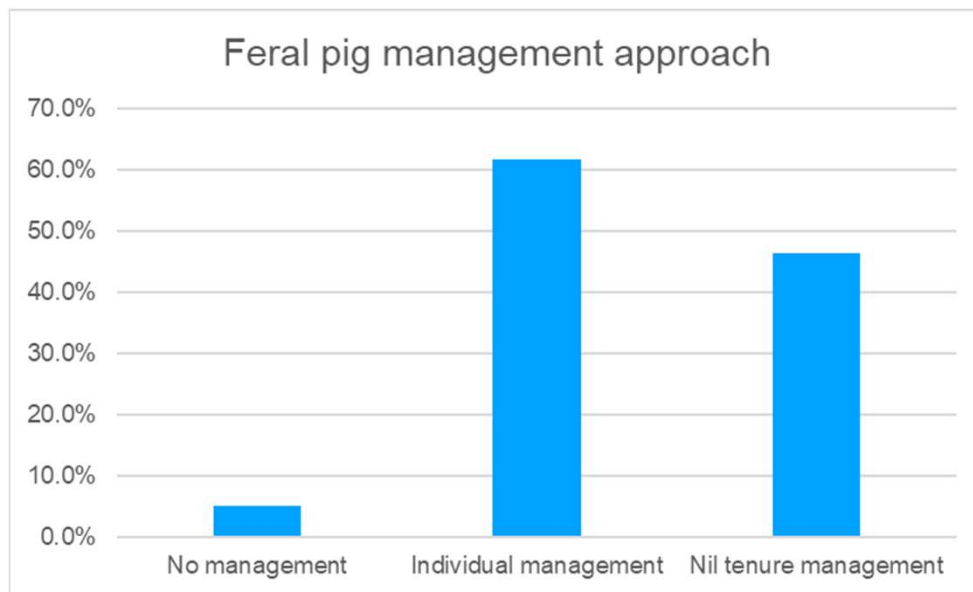


Preliminary Results





Preliminary Results

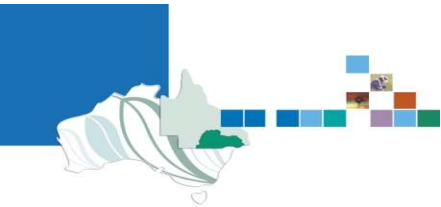




I personally aim to bridge the gap between the biophysical ecology and human dimension ecology sciences.



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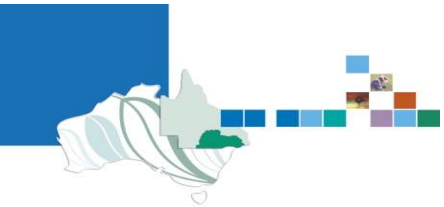
Acknowledgements

- Biosecurity Queensland – DAF
- Vertebrate Pest Research Unit – NSW DPI
- Penn State University
- University of New England
- University of Southern Queensland
- University of Melbourne
- National Feral Pig Coordinator
- LOTEK
- Western Downs Regional Council
- Toowoomba Regional Council
- Fitzroy Basin Association
- SANTOS GLNG
- Arrow Energy
- Outdoor Cameras Australia
- North Australian Indigenous Land and Sea Management Alliance (NAILSMA)
- Bunya People’s Aboriginal Corporation
- Queensland National Parks and Wildlife Service (QPWS)
- New South Wales National Parks and Wildlife Service (NSW NPWS)
- Pest Animal Control and Training
- Northern Tablelands Local Land Services (LLS)
- North-West LLS
- Western LLS
- South-East LLS
- Central-West LLS
- Australian Pork Limited (APL)



Photo: Bec Gray





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