Practicalities of camera trapping to detect and count feral pigs

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NSW GOVERNMENT | Department of Primary Industries


• The right tool for the job
• Setting up to detect pigs
• Photos → Data → Inference
05/11/08 07:33

What camera is best ***fit for purpose***?

- Trigger: passive, active, time-lapse, delay
- Flash: white, NIR, long, short
- Sensor: sensitivity, detection zone
- Image quality: low & many - high & few
- Image storage: camera, base, network
- Programming flexibility

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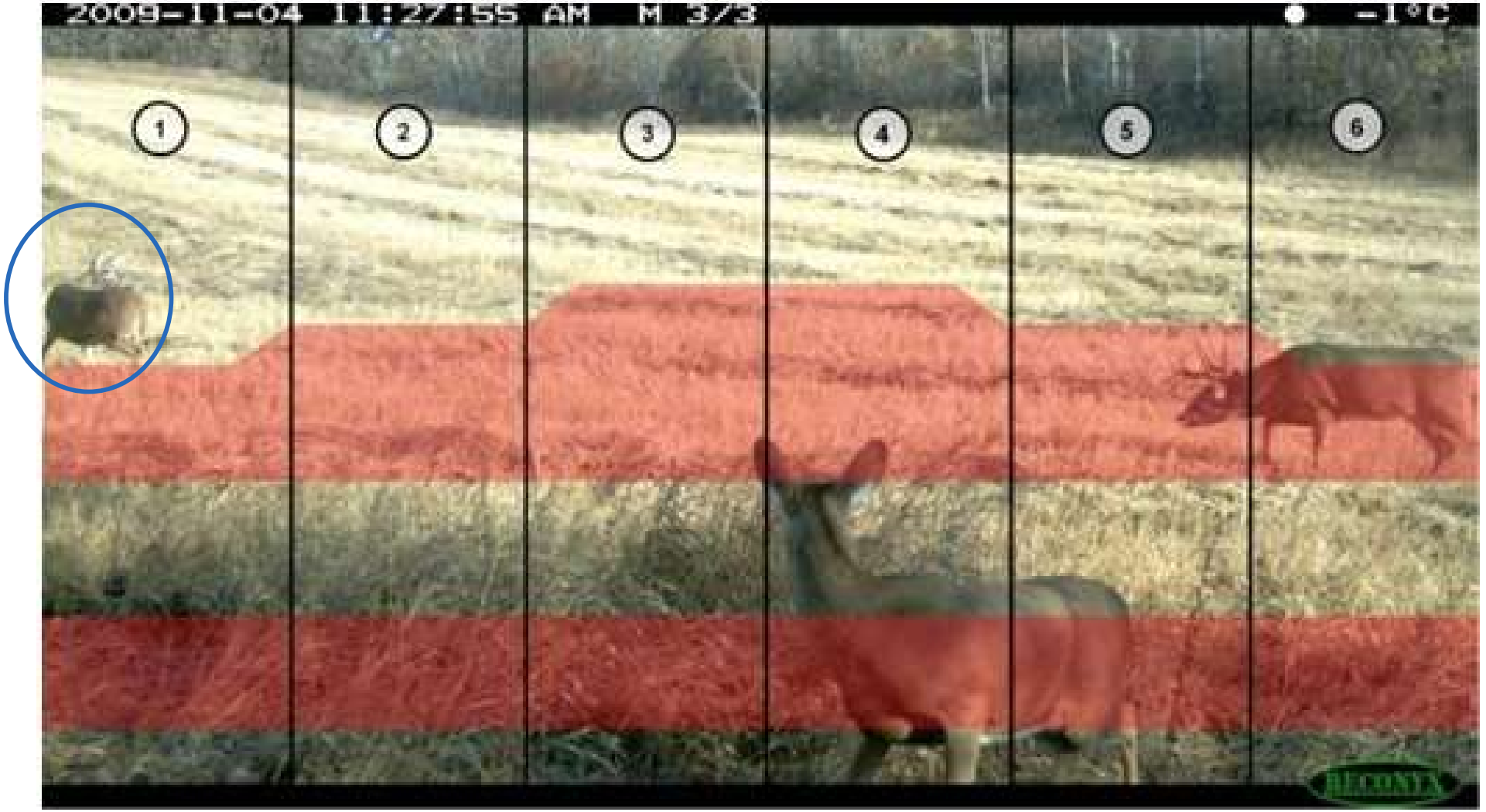
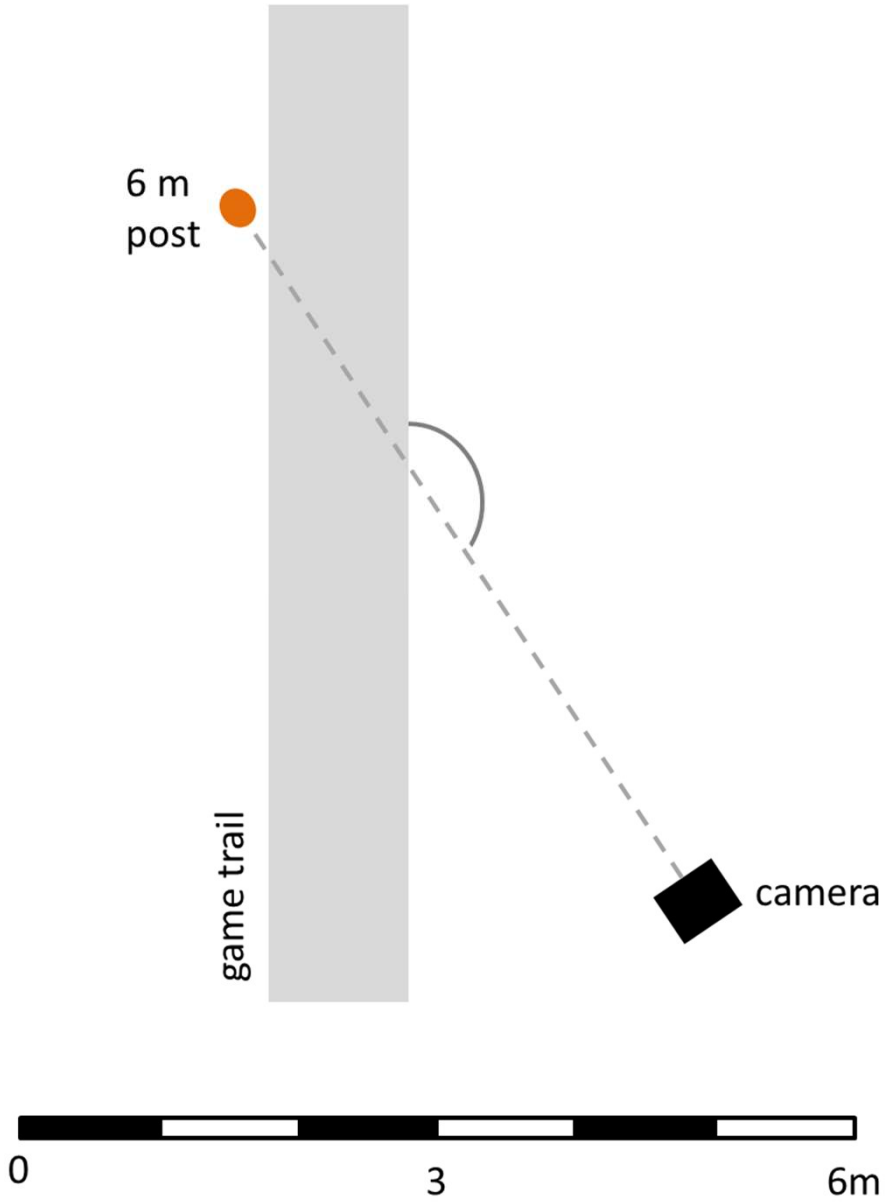
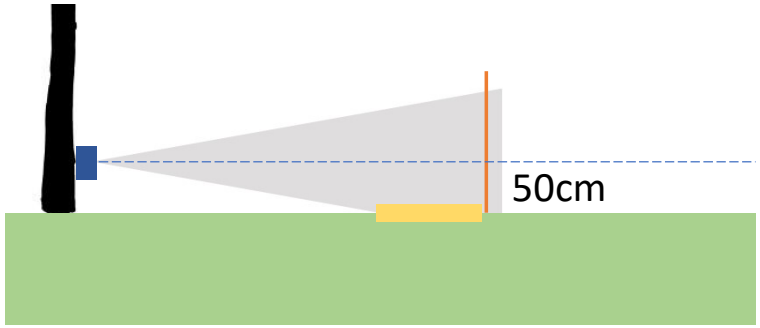
Field of View ≠ Detection Zone

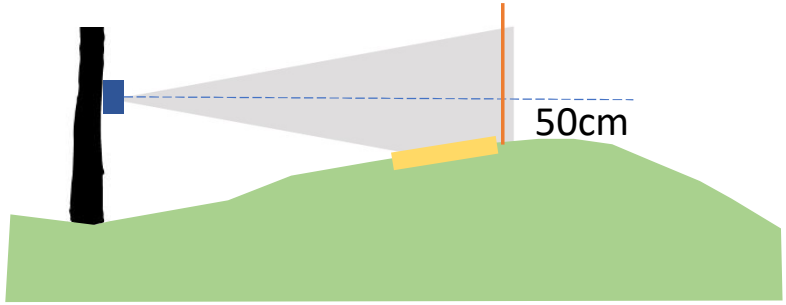
https://www.trailcampro.com/pages/trail-camera-detection-field-of-view-angle

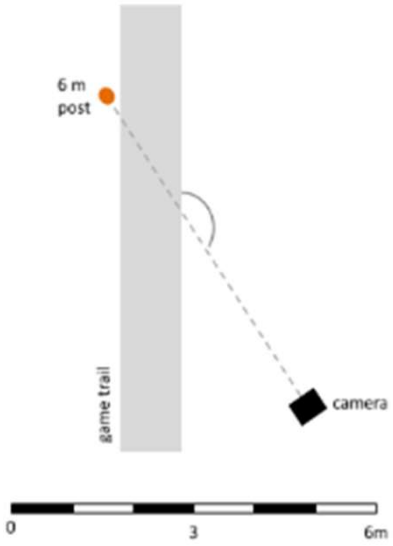
Reconyx Detection Zones




6 m
post
game trail
camera
0
3
6m

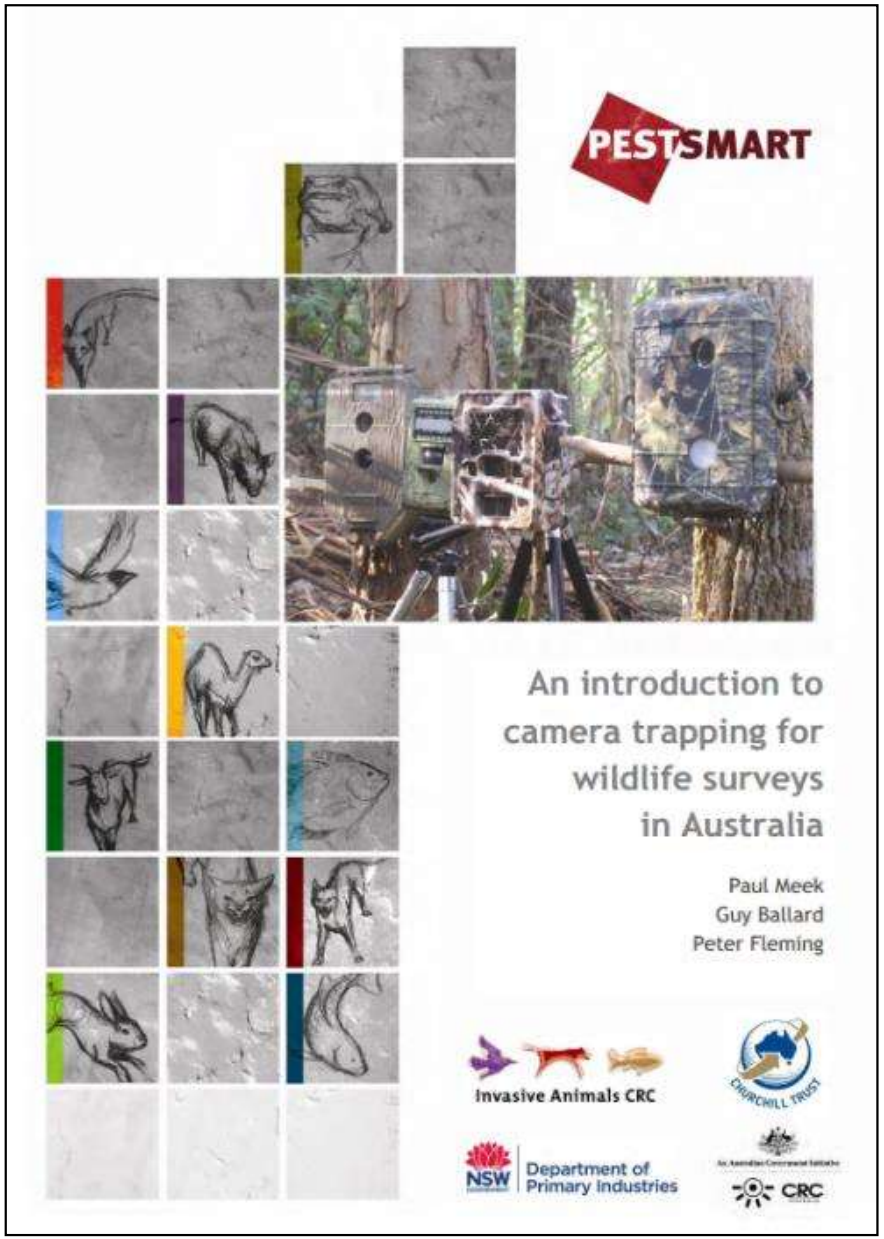

50cm

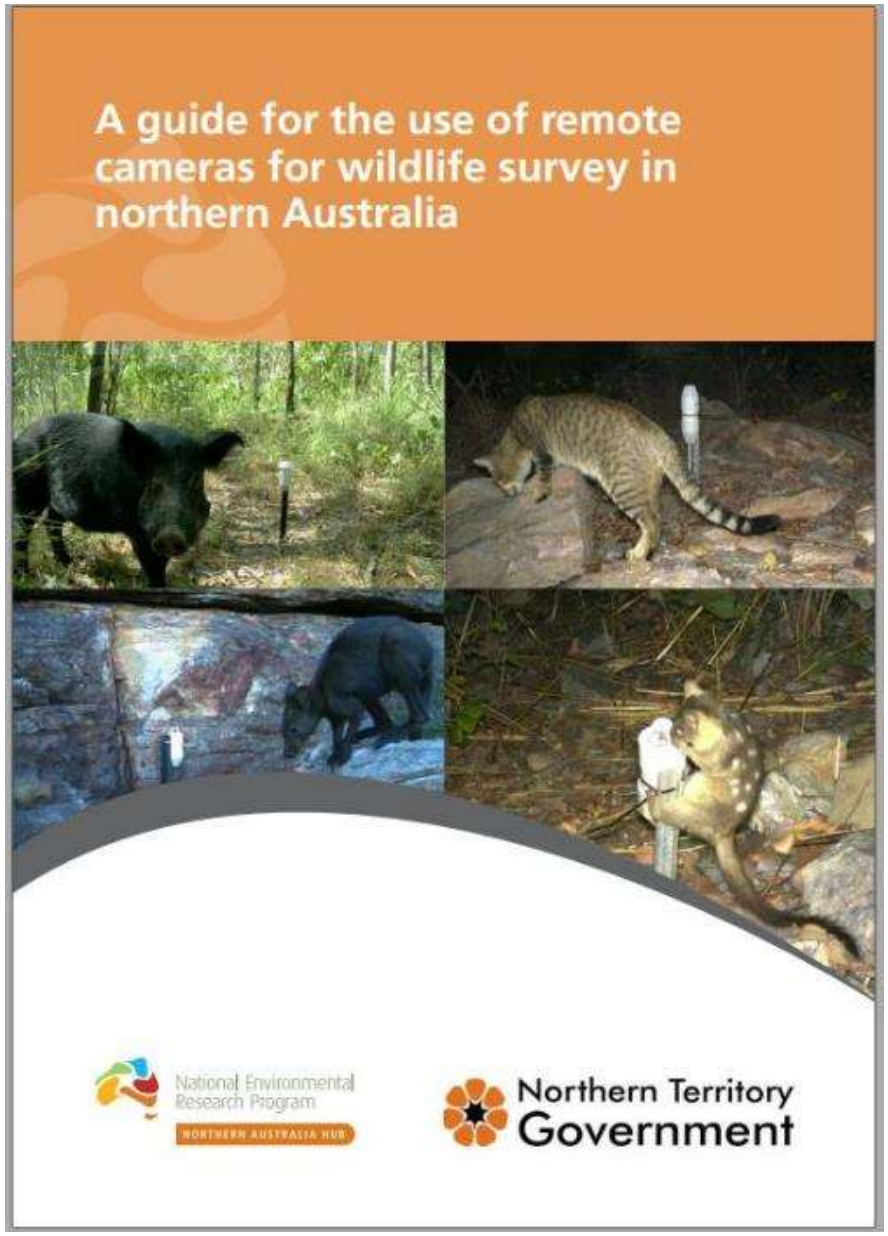

50cm


6 m
post
game trail
camera
0
3
6m

Thermal contrast

Troy Crittle


PESTSMART
An introduction to camera trapping for wildlife surveys in Australia
Paul Meek
Guy Ballard
Peter Fleming
Invasive Animals CRC
CHURCHILL TRUST
NSW Department of Primary Industries
CRC

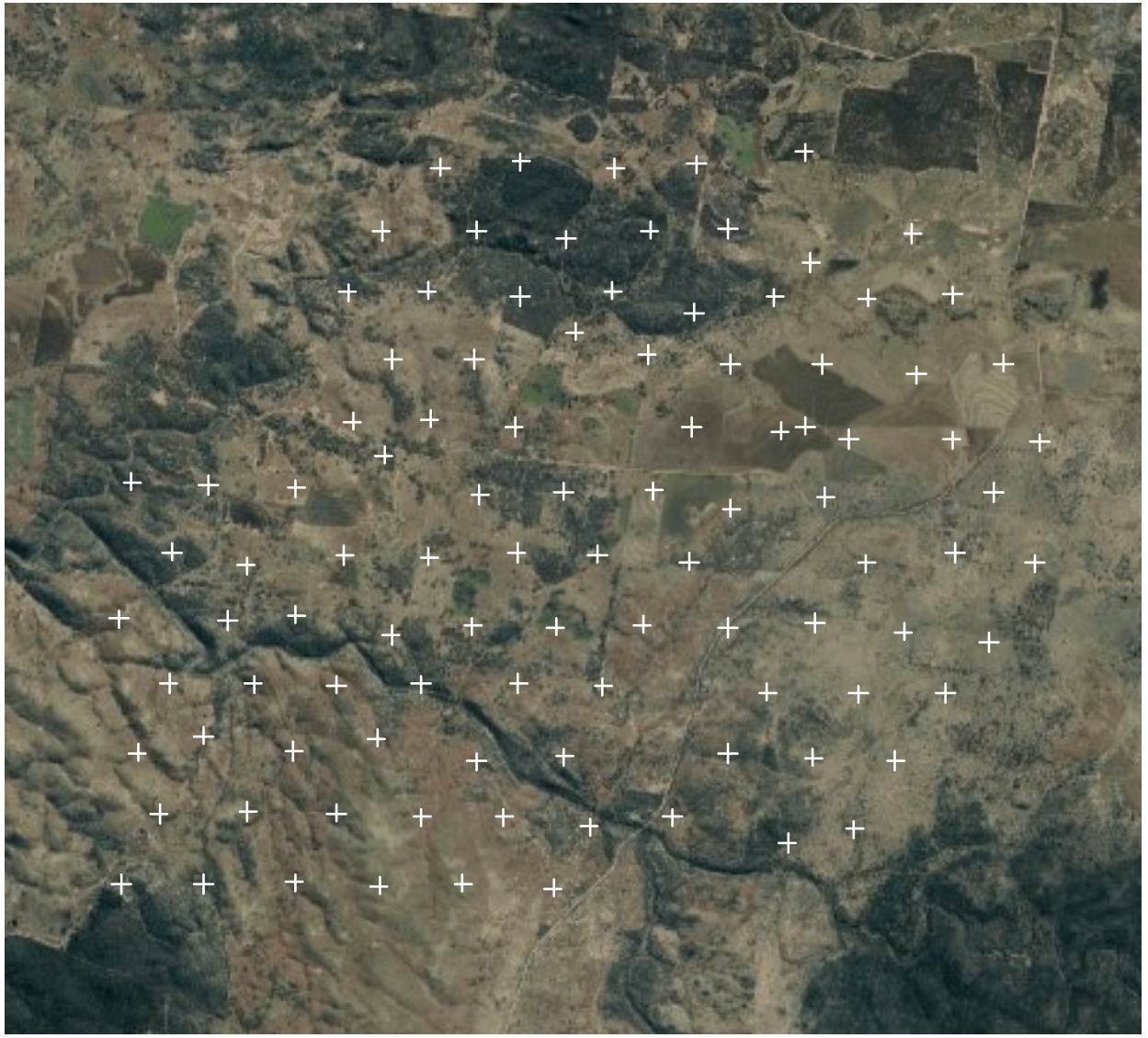

A guide for the use of remote cameras for wildlife survey in northern Australia
National Environmental Research Program
NORTHERN AUSTRALIA HUB
Northern Territory Government

Behaviour


B Benham


Deer & Deer Hunter magazine

Relative Abundance Index	
Data type	Repeated detections
Complexity	
Output	Detectability x abundance
Use	Increasing or Decreasing
Limits	Confounded, Vague



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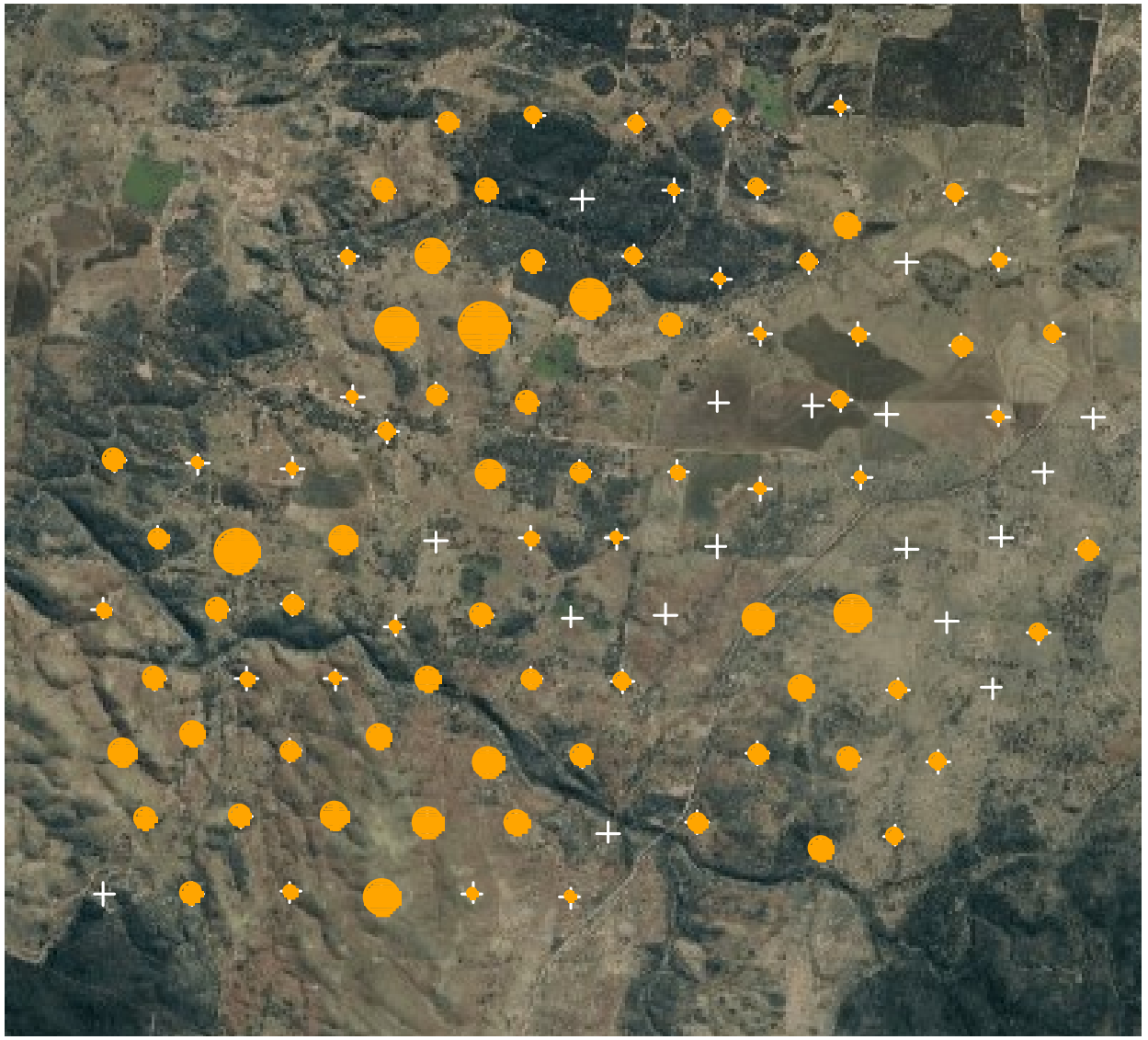
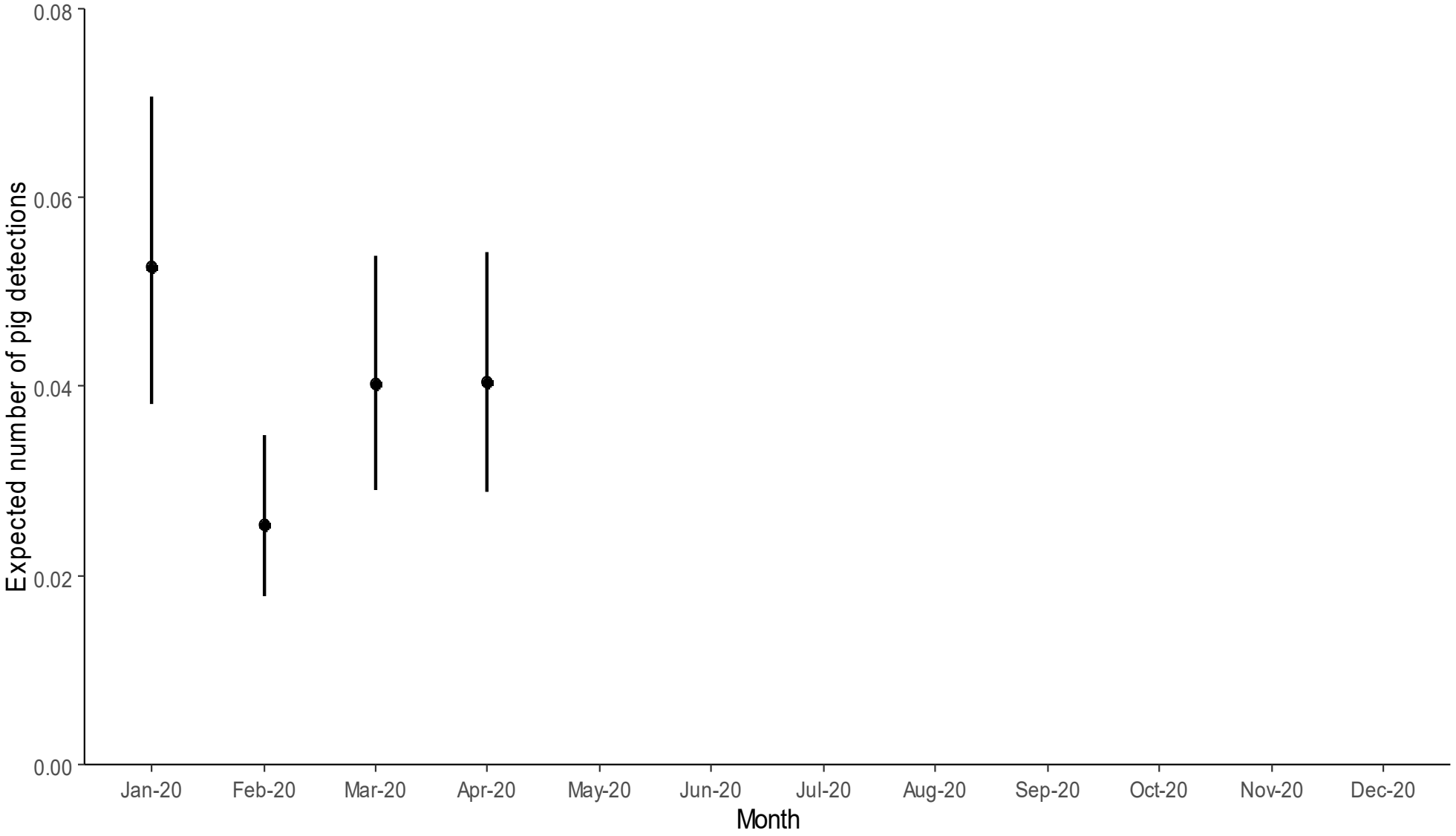
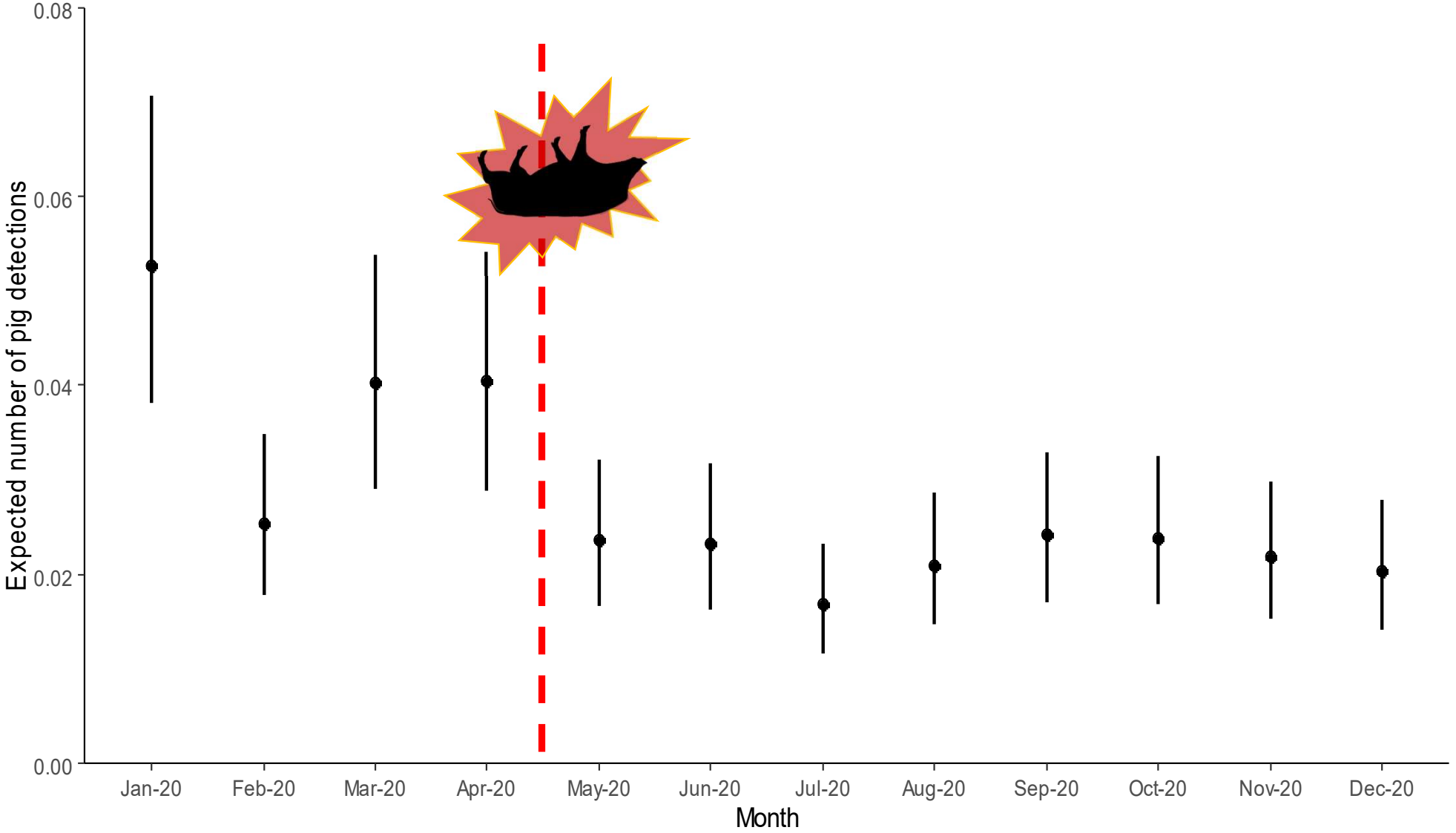


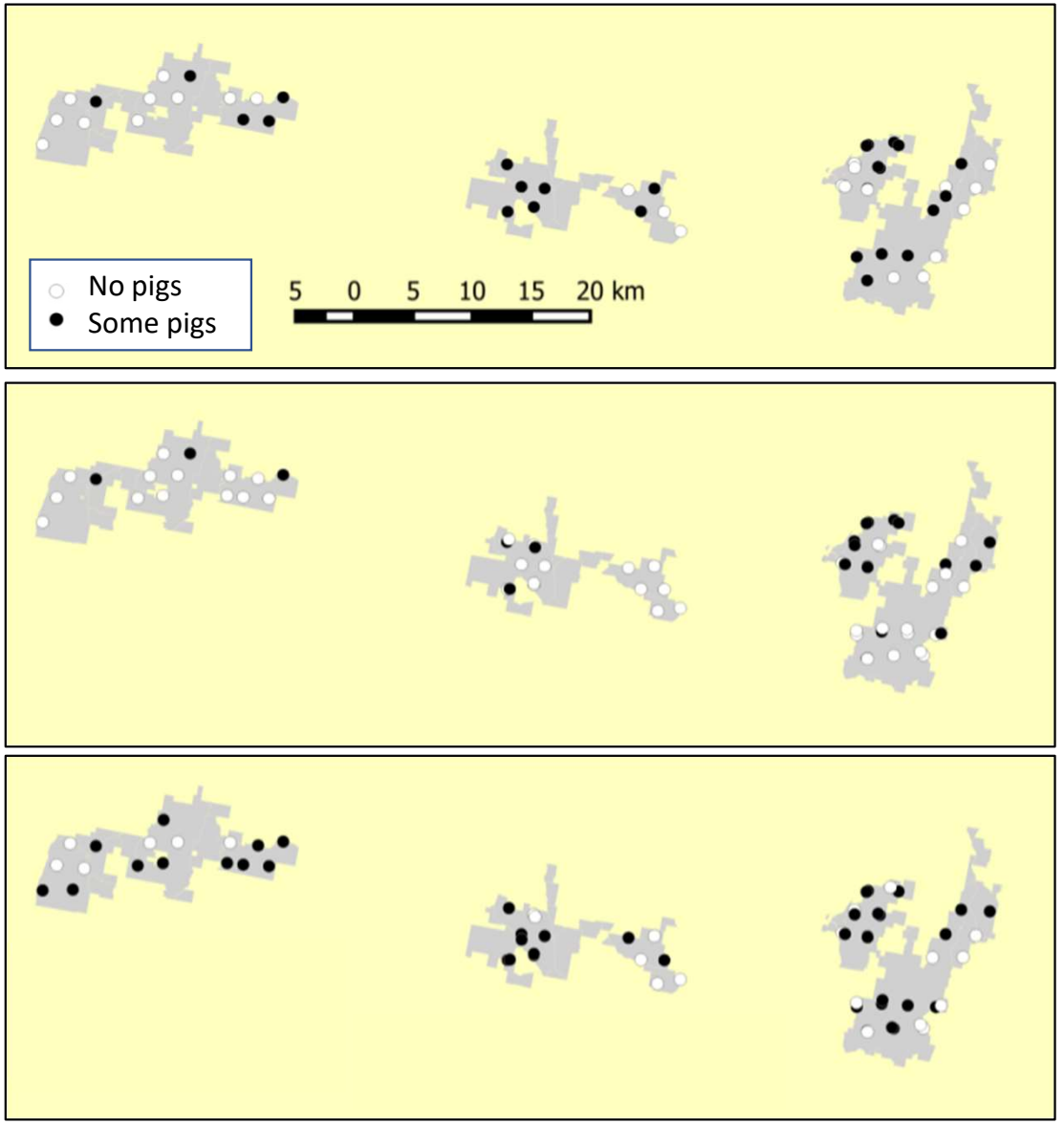


Data from Darren Marshall and team



Data from Darren Marshall and team

Occupancy	
Data type	Repeated spatially-independent detections
Complexity	
Output	Area occupied, …
Use	Distribution
Limits	Big change in abundance ≠ change in occupancy



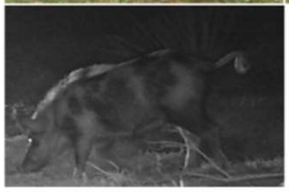
Feb 2016
Site V2B3

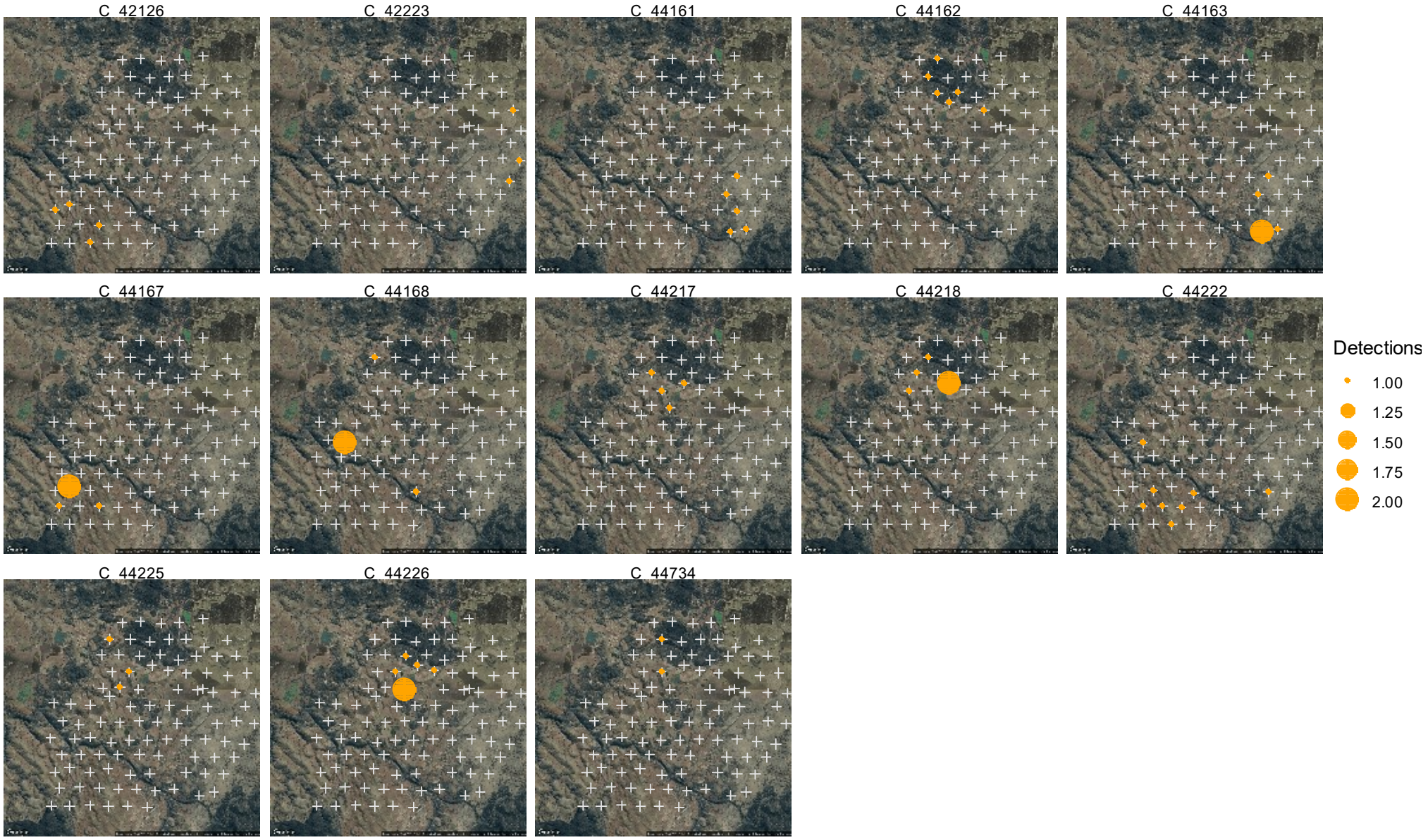
Mar 2016
Site V2C2

Jun 2016
Site V2B3

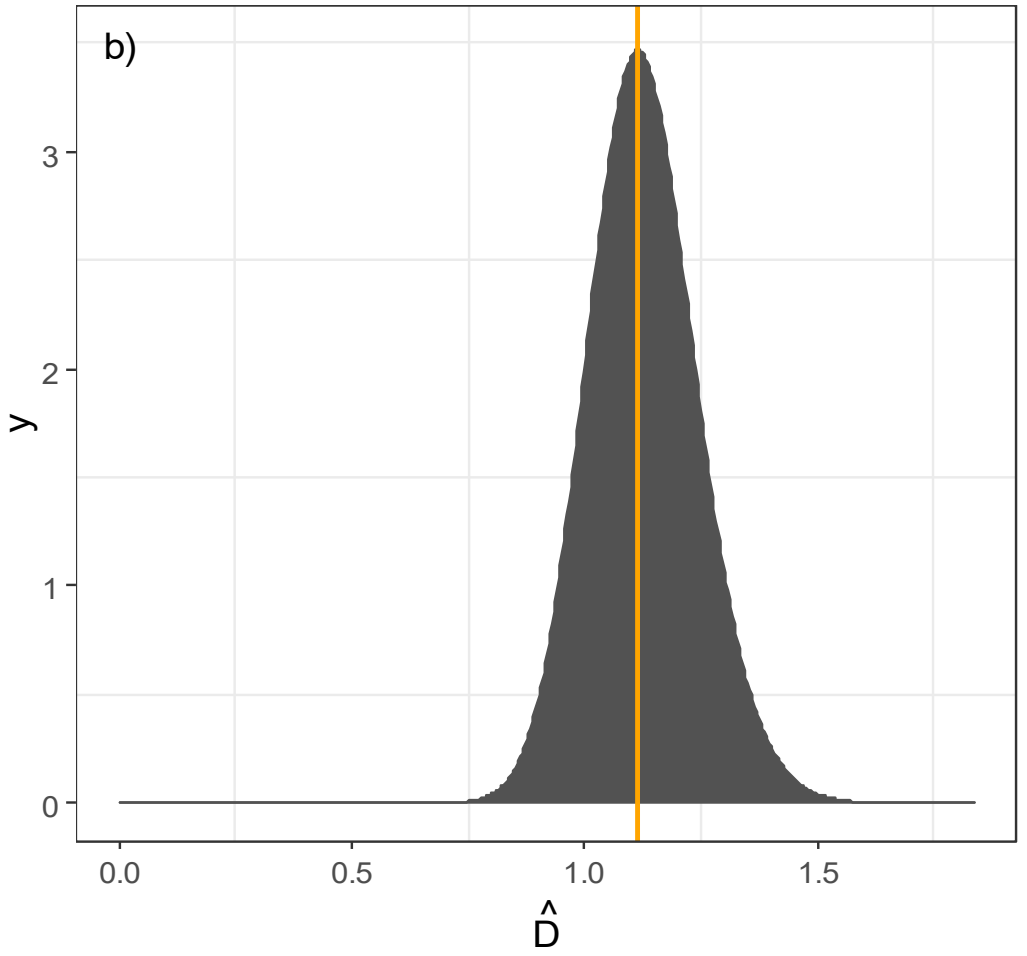
Oct 2016
Site V2B3

Nov 2016
Site V2B3




C_42126
C_42223
C_44161
C_44162
C_44163
C_44167
C_44168
C_44217
C_44218
C_44222
C_44225
C_44226
C_44734
Detections
1.00
1.25
1.50
1.75
2.00

Density	
Data type	Spatially-correlated detections ± Mark-recapture ± …
Complexity	😖
Output	Density, …
Use	How much of a difference did/must we make?
Limits	Site size, ?



Density = 1.13 pigs km^{-2} (95% CrI = 0.91, 1.37 pigs km^{-2})

Set meaningful aims

Get to know your gear

Get to know your analysis/t

Outcomes --> methods --> gear

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https://andrewbengsen.github.io/Presentations.html