



Project Kaka

Understanding the effects of 3 yearly aerial 1080 applications for animal pest control



James Griffiths

Project Kaka initiated

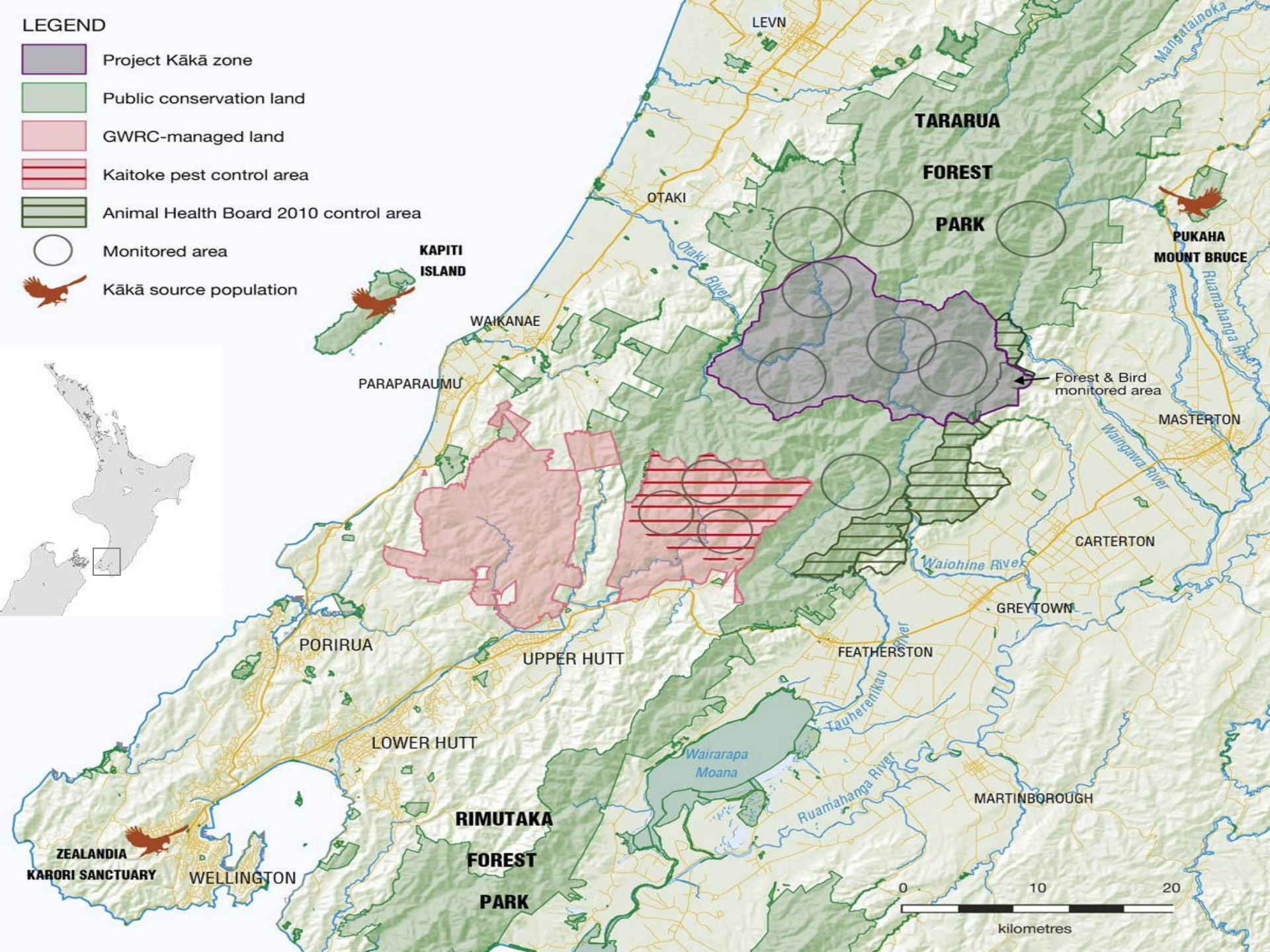
Switch from possum focused control to multi-pest control

- 6 year aerial 1080 applications to 10,000ha blocks halted over (36, 000ha) of Tararua Forest Park - 2007
- 3 year aerial 1080 with pre-feed commenced Nov 2009 (22,000ha)-Otaki to Mt Holdsworth
- Hutt Water Catchment (10,000ha), ongoing aerial 1080 treatment by GWRC, 6 year cycle, last 1080 application May 2009



LEGEND

-  Project Kākā zone
-  Public conservation land
-  GWRC-managed land
-  Kaitoke pest control area
-  Animal Health Board 2010 control area
-  Monitored area
-  Kākā source population



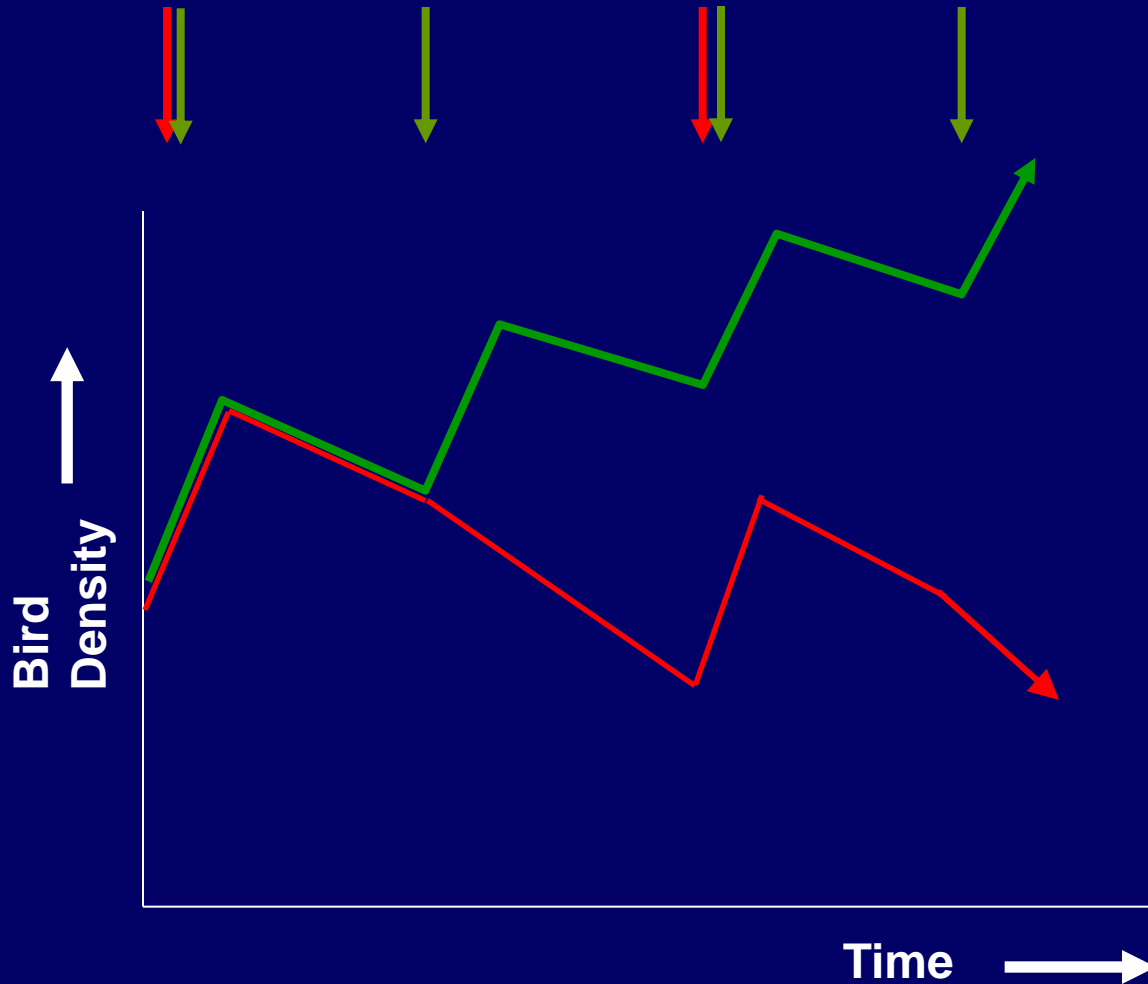
Rationale

- Pre-fed 1080 treatment can control multiple pests
 - Rats
 - *Mustelids*
 - Possums
- Increased treatment area size, consideration of shape & edge topography
 - reduced pest immigration
- 3 year treatment cycle should allow two good bird breeding seasons every three years



Bird populations

3-yearly vs 6 yearly pest control



Can we use 3 yearly 1080 ops to restore a forest ecosystem?

- Comprehensive research programme implemented 2009
 - Rodents/Mustlids/Possums
 - Birds
 - Invertebrates
 - Deer
 - Forest structure/composition
 - Fruit abundance
- Long term - 10 year
- Research partnerships established – DOC R&D, Greater Wellington Regional Council, Landcare Research, AHB & Vic Uni



Research objectives

1. How does 3-yearly aerial 1080 treatment influence the abundance and distribution of target pest species (possums, rats, stoats) and non-target pests (mice, deer)?
2. How are the abundance and distribution of target/non-target pest species related to the abundance and distribution of vulnerable native animal and plant species?



GOLDEN-CROWNED PARAKEET.

Research objectives

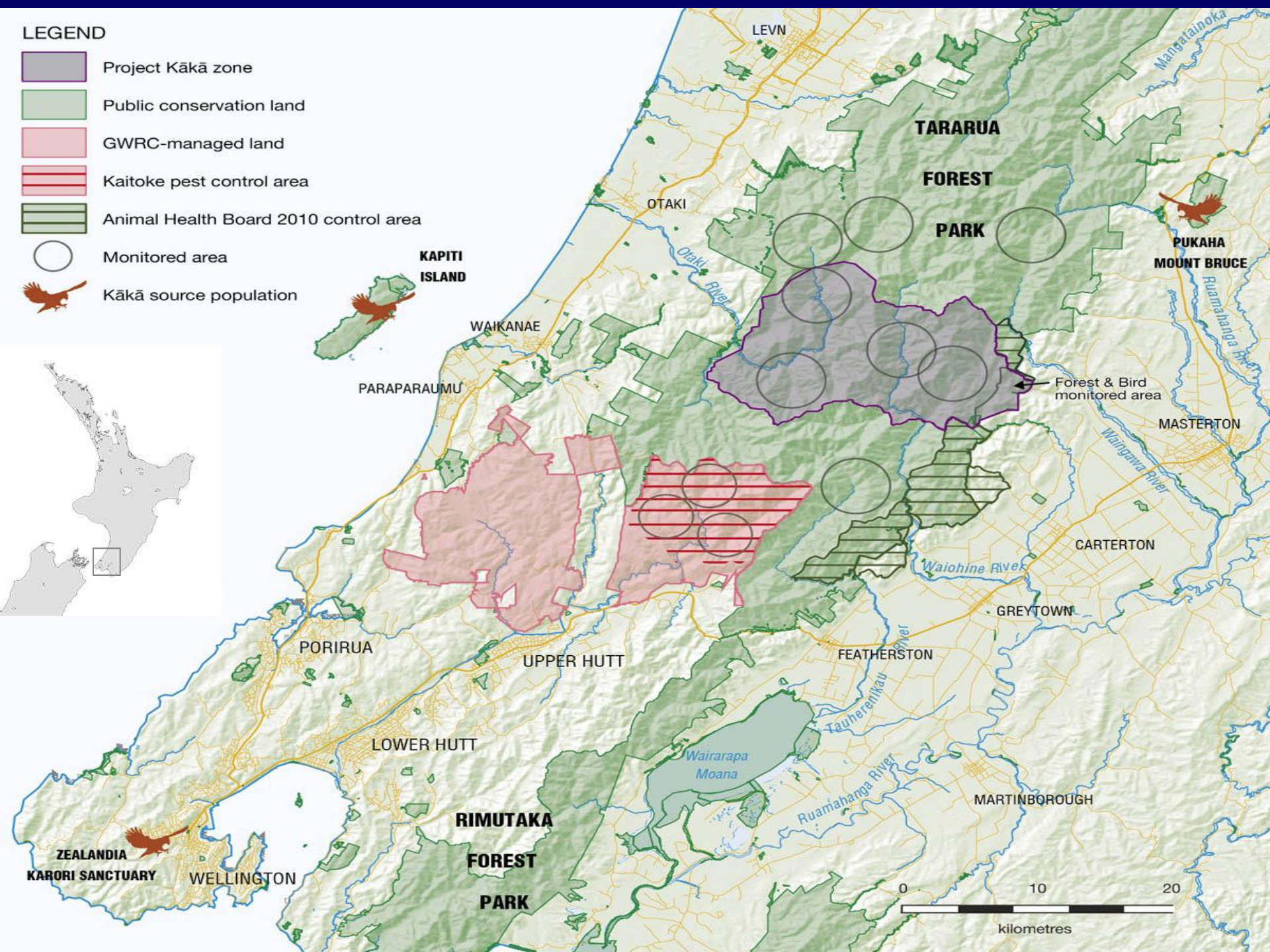
3. How are the abundance and distribution of target pest species and breeding of fruit-feeding birds related to changes in beech and rimu seedfall?
4. What is the effect of stopping 6-yearly aerial 1080 control on target/non-target pest species and ecosystem health?



GOLDEN-CROWNED PARAKEET.

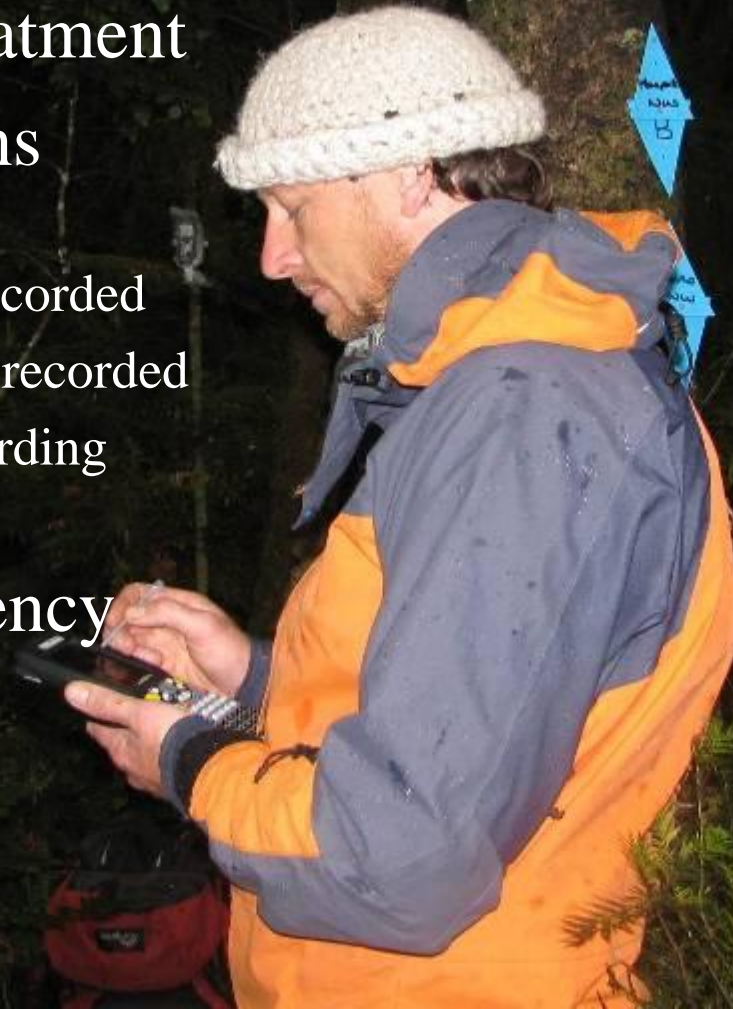
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Methods – 5MBC

- 120 stations/treatment
- random locations
 - First detection of individual birds recorded
 - Time of detection recorded
 - Digital audio recording (Olympus LS10)
- sampling frequency
 - annual



Methods – Tracking Tunnels

- Rodents/Mustelids/Weta
- 20 randomly placed transects per treatment/non-treatment area
- At least 1km apart
- 10 tracking tunnels per line
- sampling frequency
 - Quarterly – Rodents&Weta
 - Jan, Feb – Mustelids



Methods – Waxtags

- Possums
- 40 randomly placed transects per treatment /non-treatment
- 30 waxtags per transect
- sampling frequency
 - annual



Methods – Faecal Pellet Index

- Deer
- 40 randomly placed transects per treatment/non-treatment
- 30x1m radius plots per transect
- Pellet groups counted in each plot
- Sampling frequency
 - annual



Methods – Seedrain Traps

- Fruitfall, Stick insect eggs & Weta frass
- Placed under randomly selected rimu silver and beech
- Sampling frequency
 - Nov, Feb



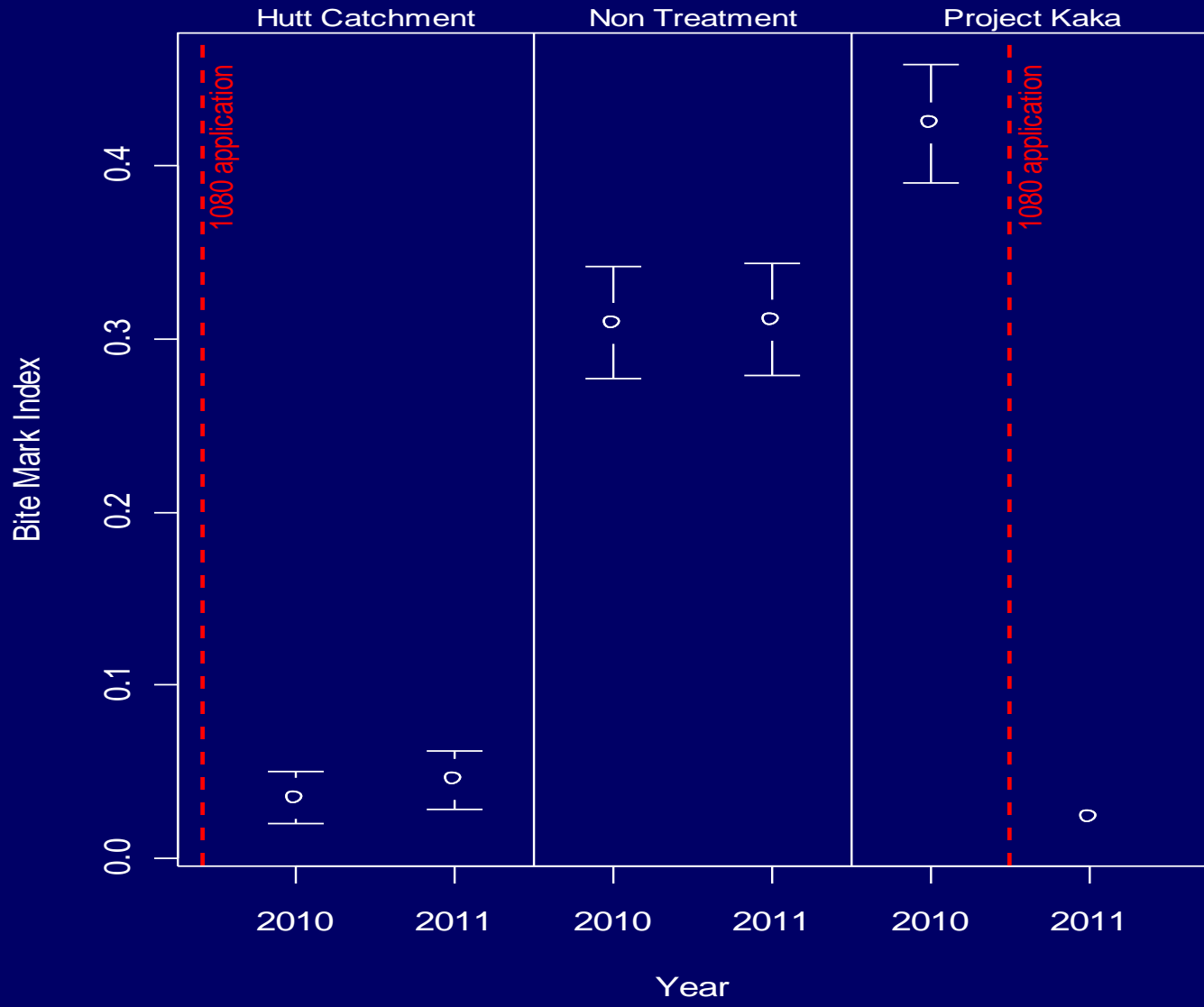
Methods – Ungulate exclusion plots

- Impact of deer on forest structure and composition
- Randomly selected sites
- Sampling frequency
 - 5 years

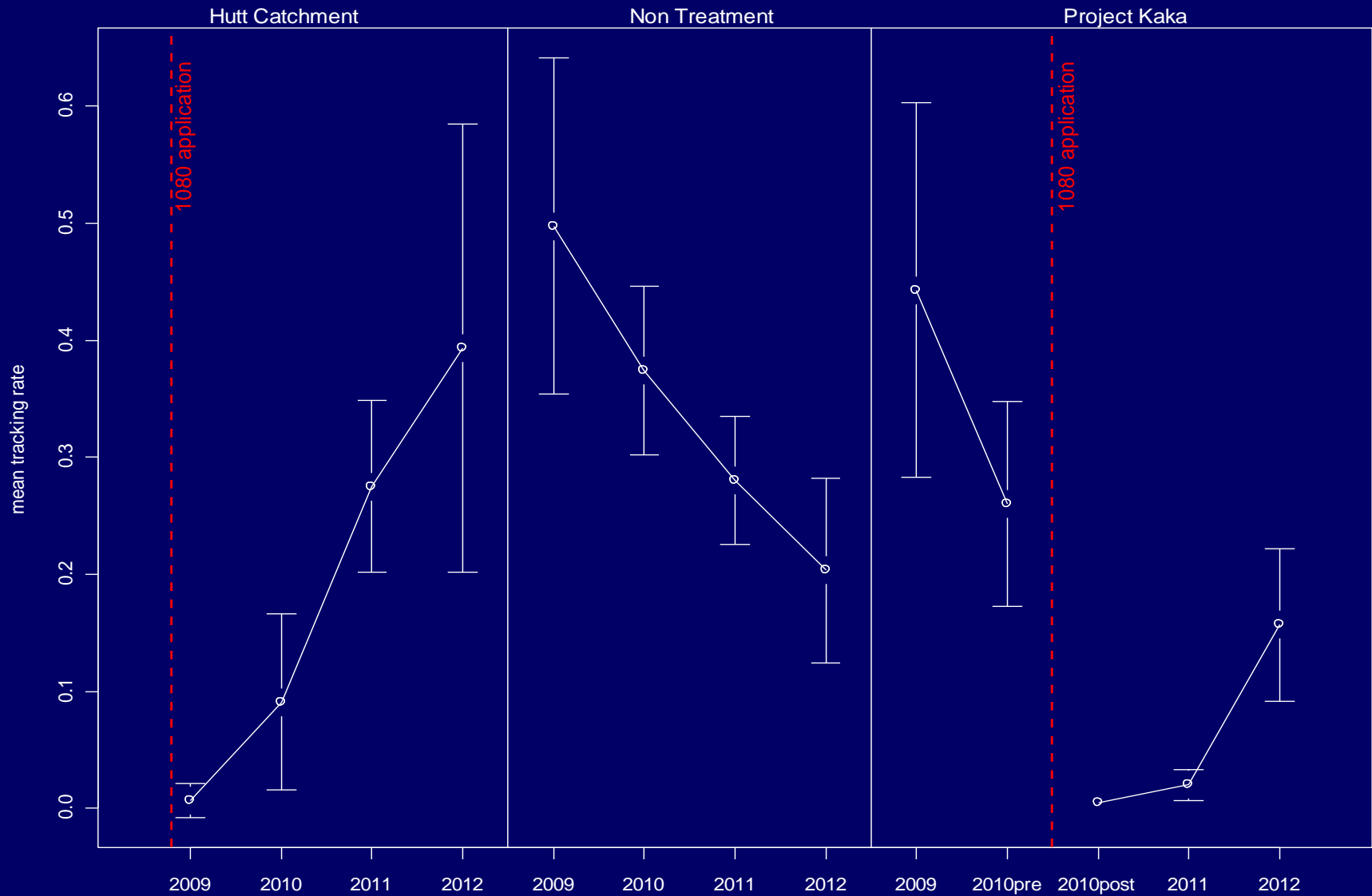
Methods – 20x20m vegetation plots

- Forest/Structure and Composition
 - Emphasis on demography/mortality
- Randomly selected from existing plot network
- Tagged palatable/unpalatable stems
- Browse scores recorded for tagged stems
- Sampling frequency
 - 10 years

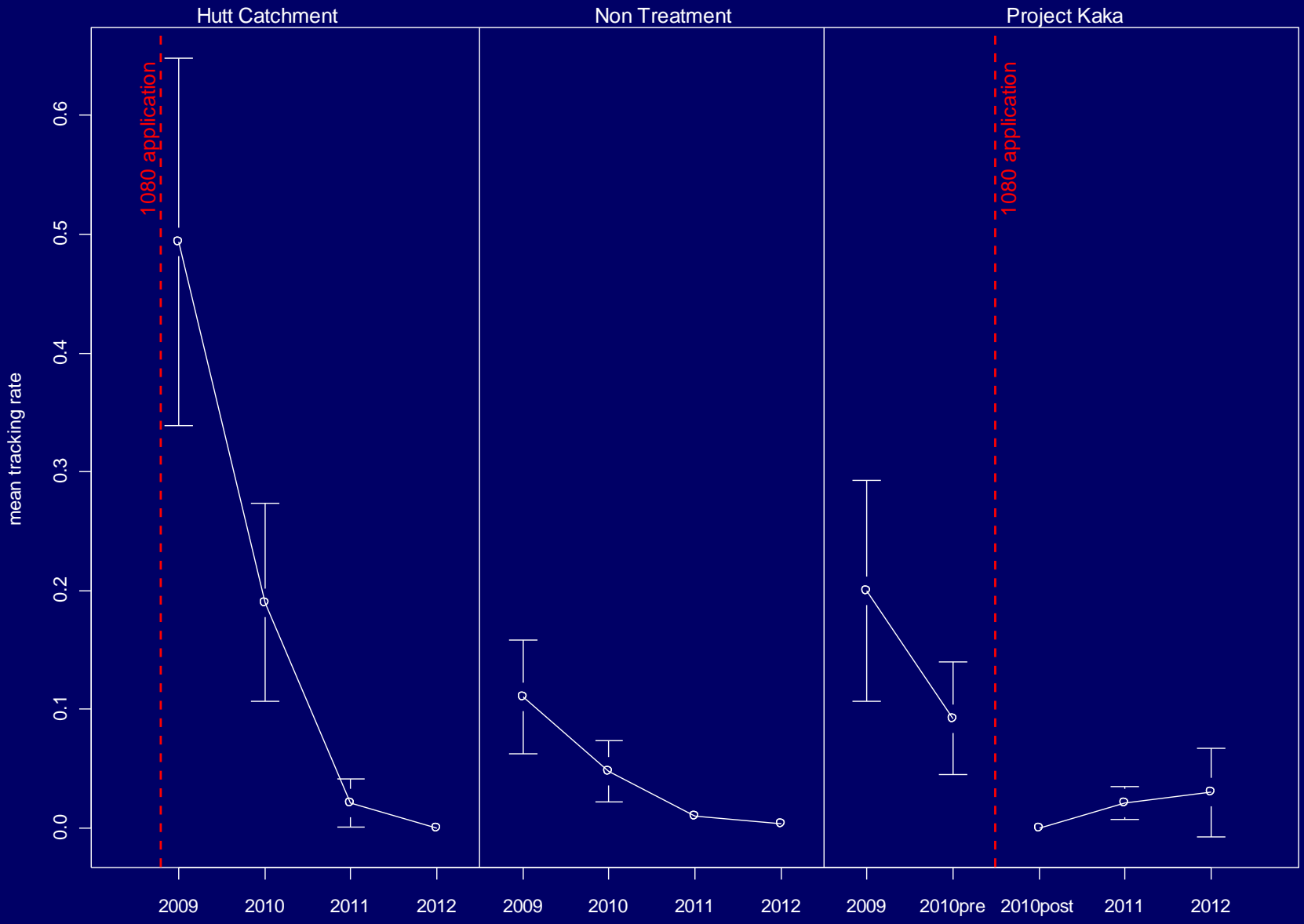
Preliminary results – Possums
2012 data to come



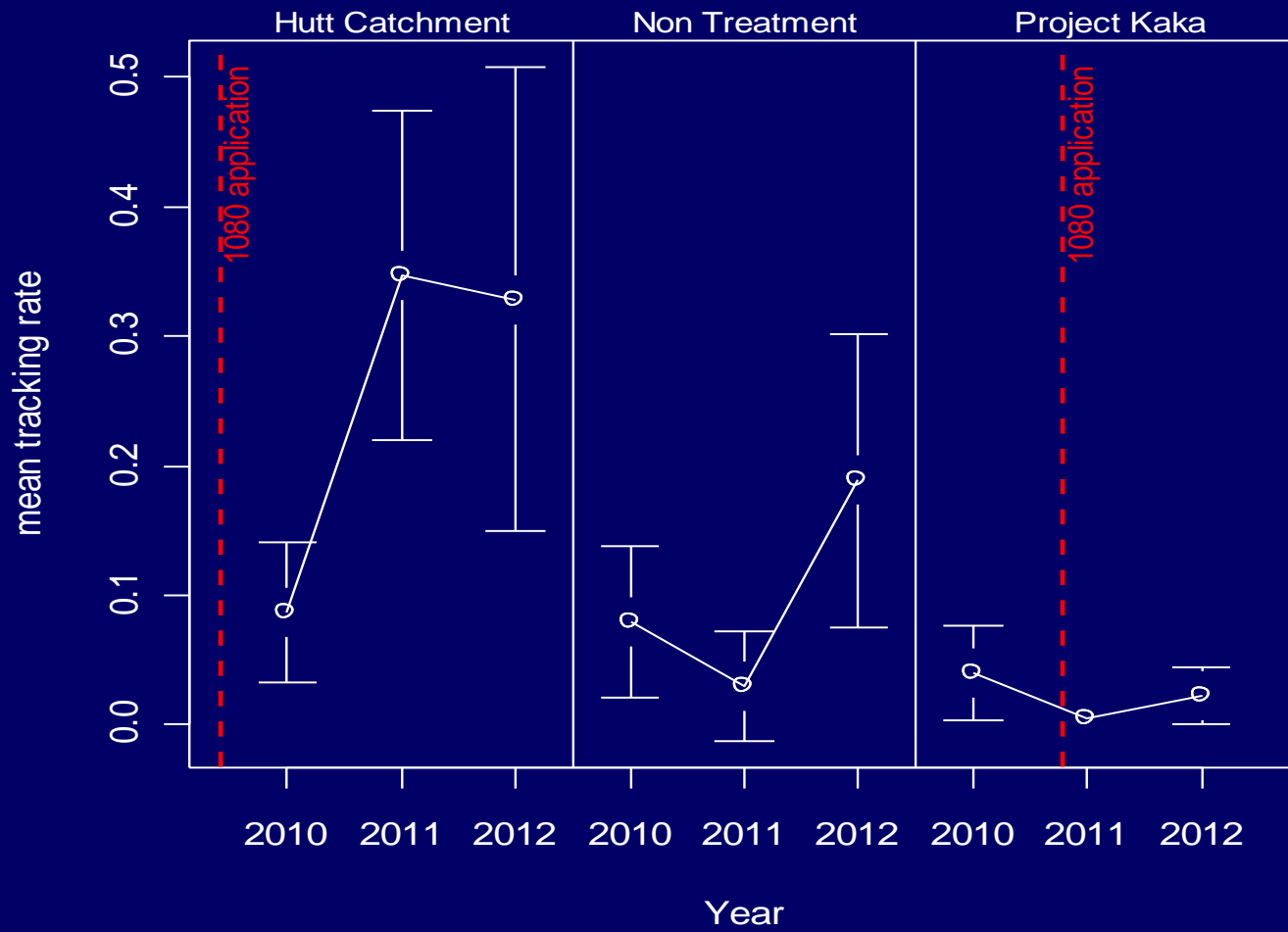
Preliminary results - Rats



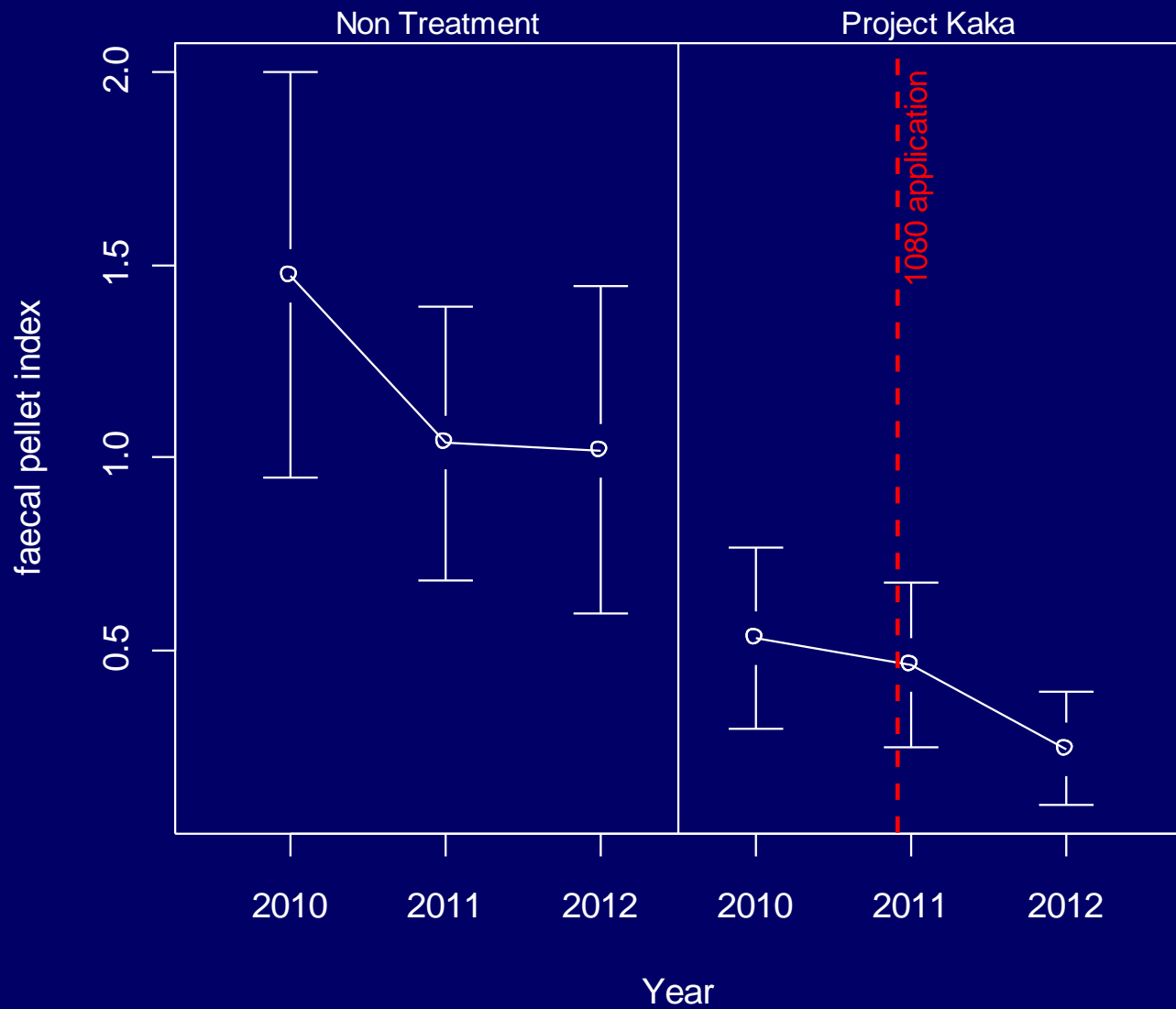
Preliminary results - Mice



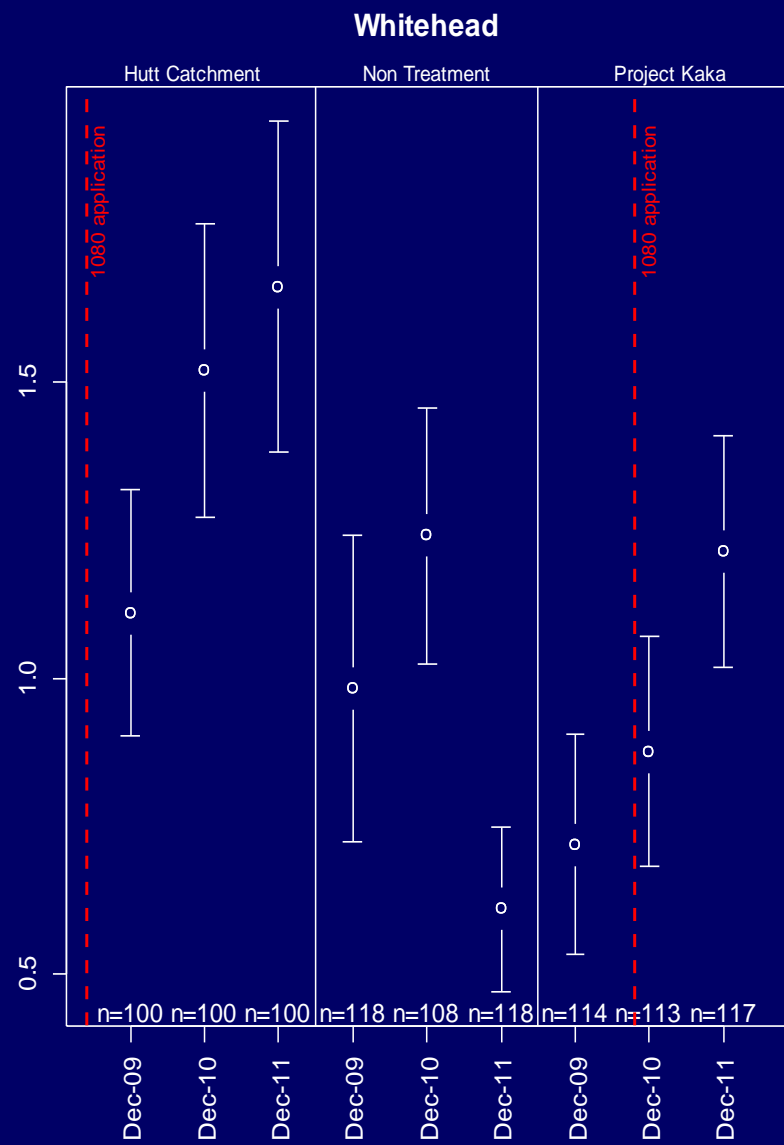
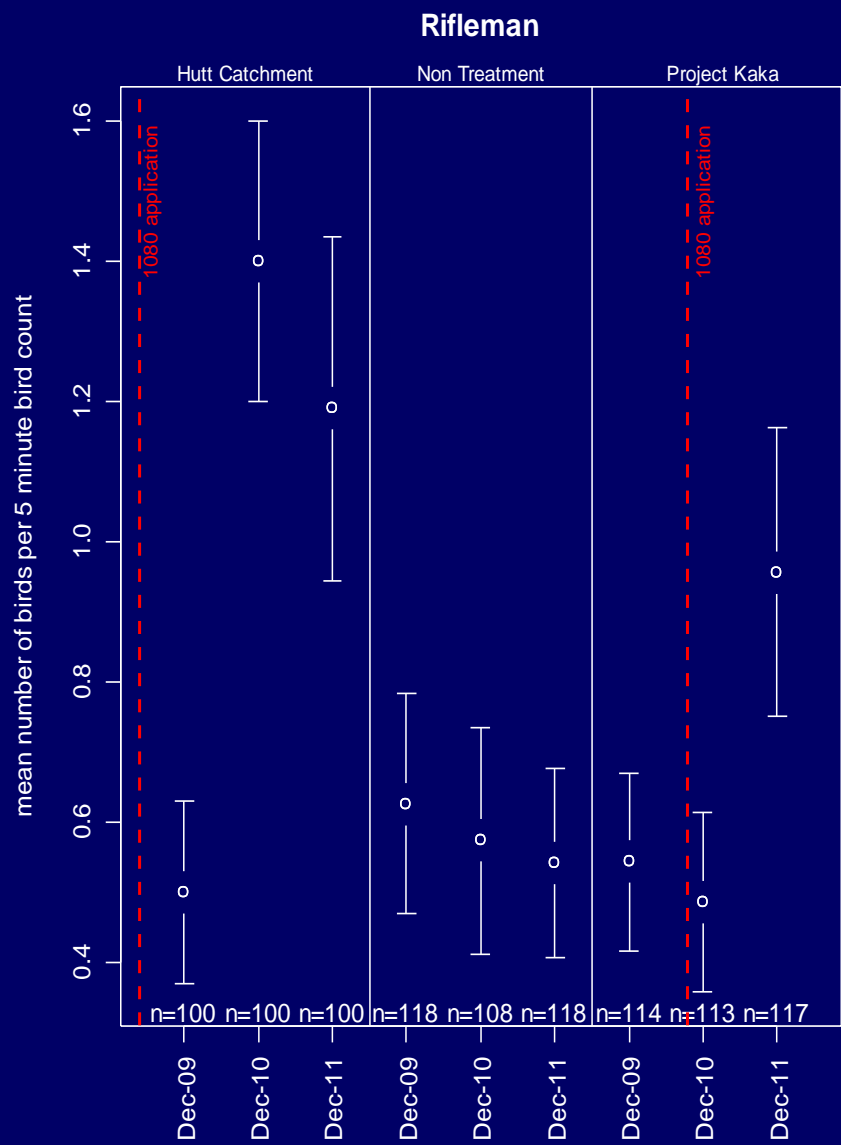
Preliminary results - Stoats



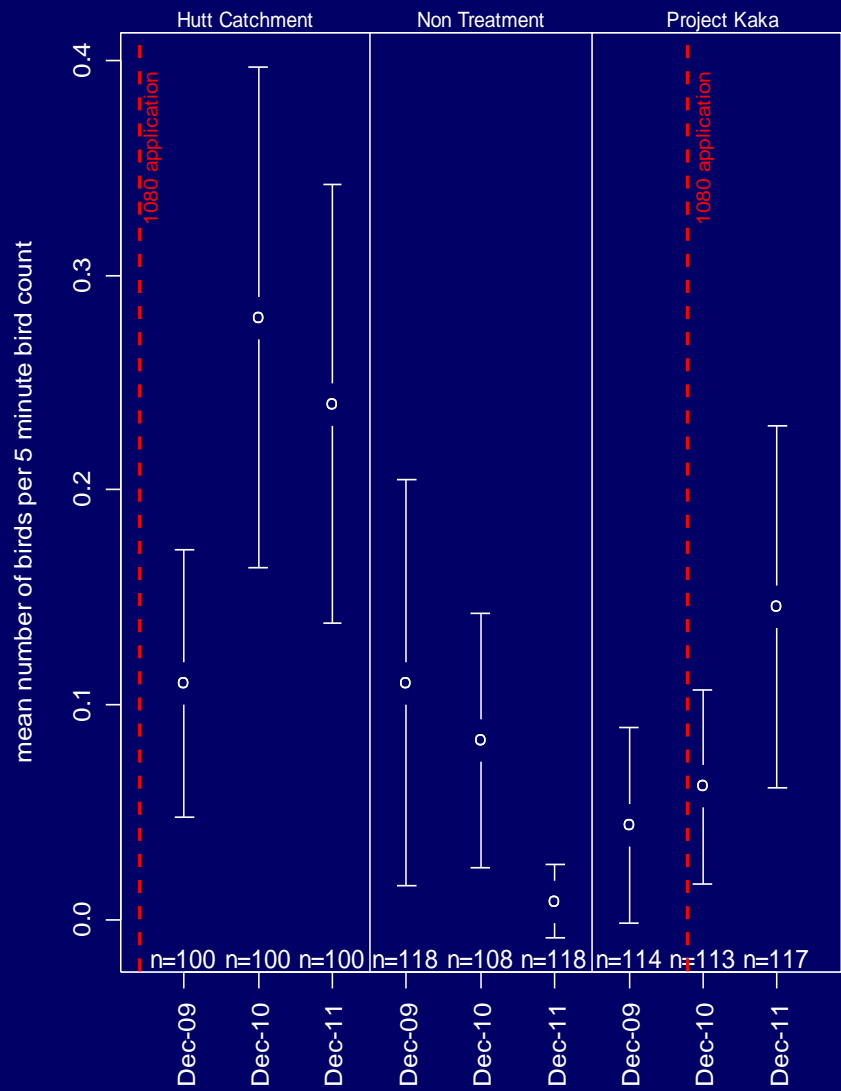
Preliminary results – Deer



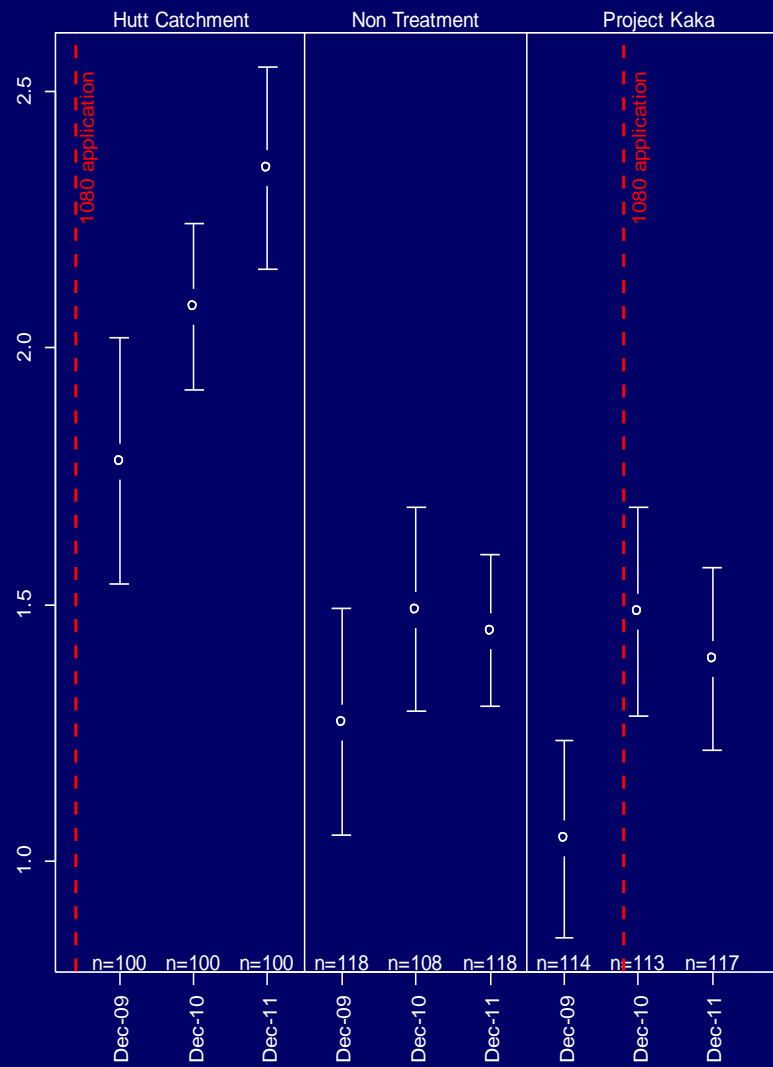
Preliminary results – Birds

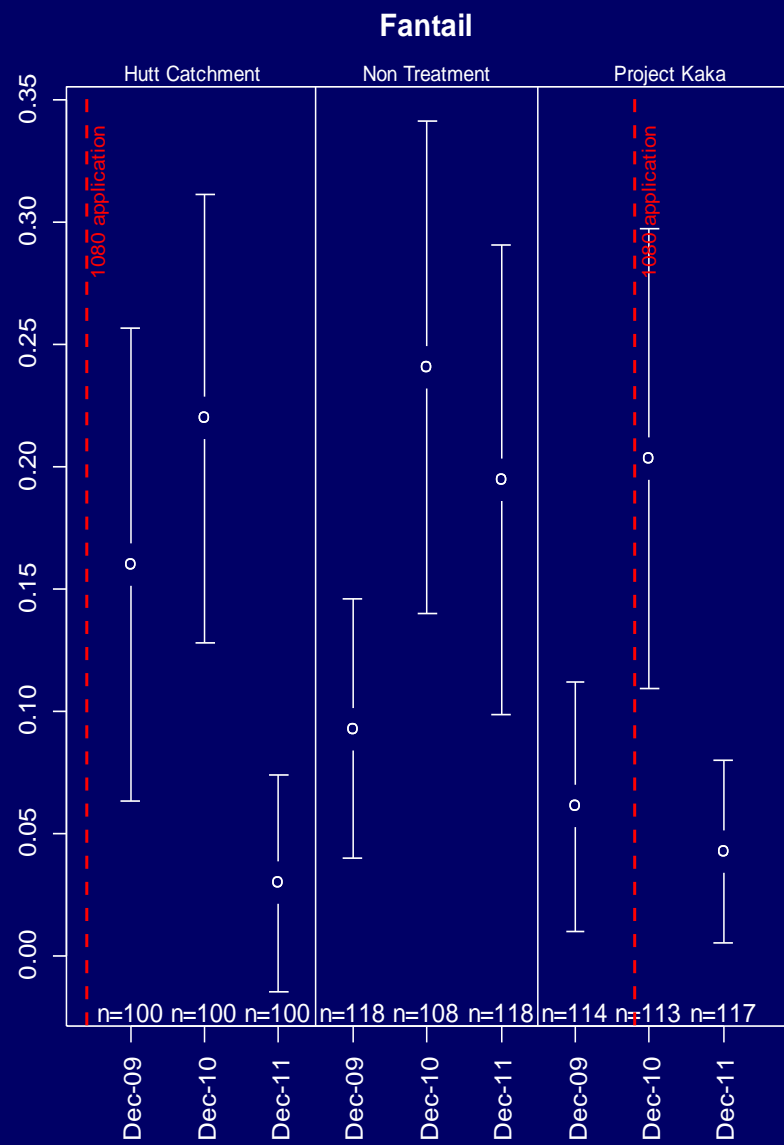
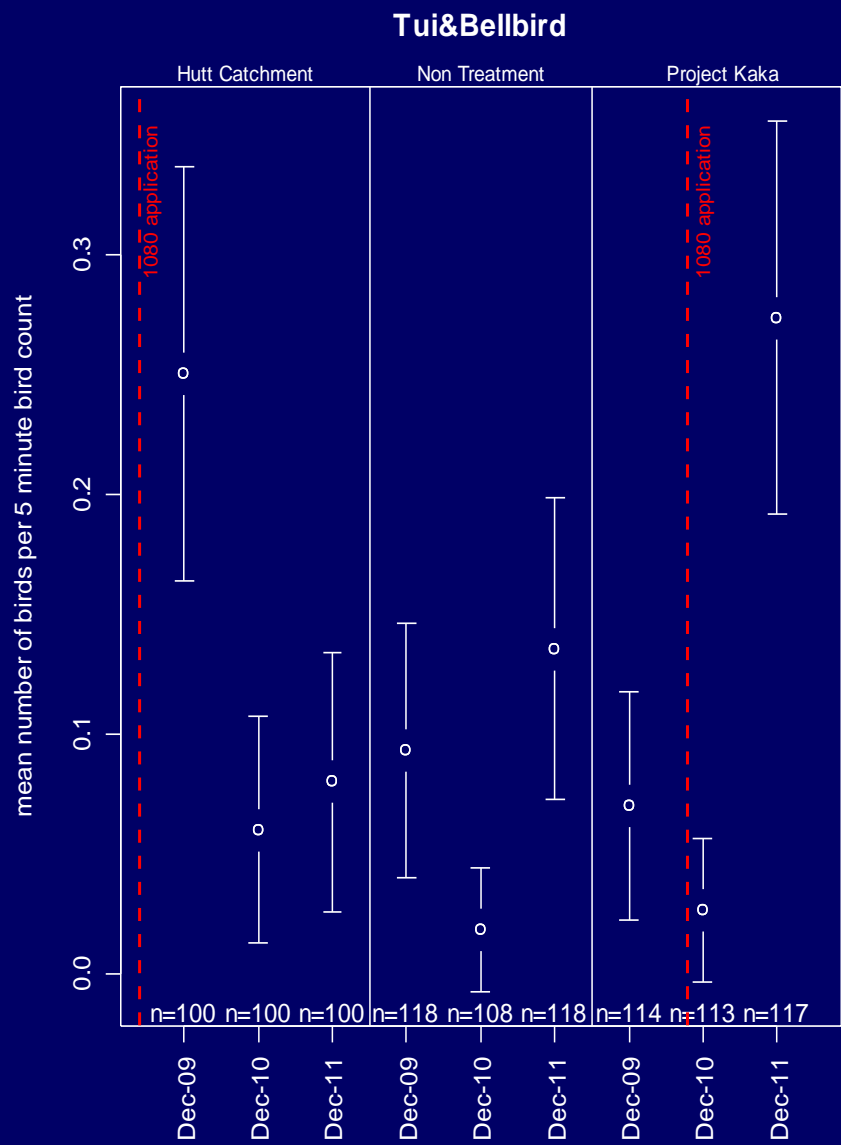


Kakariki



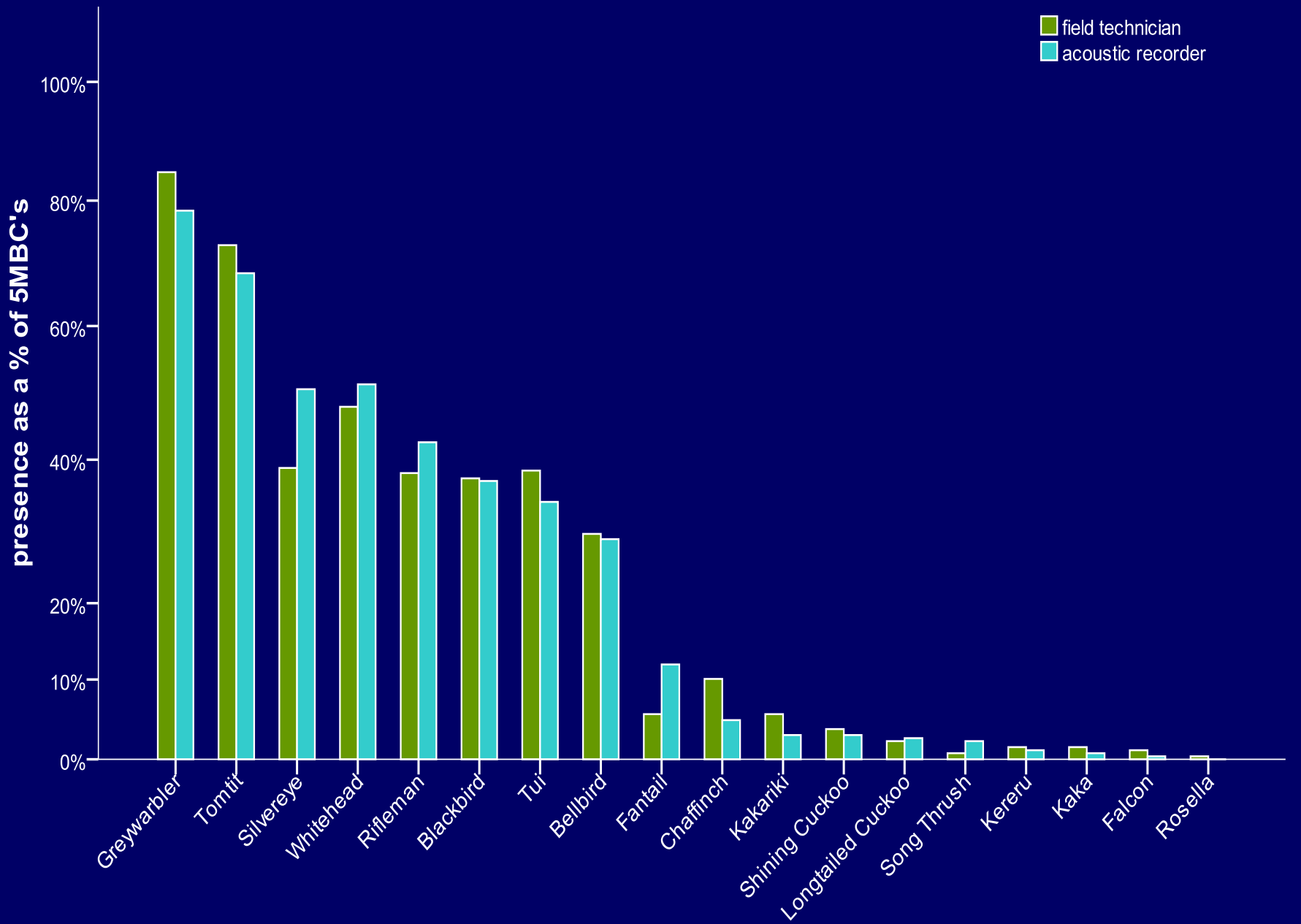
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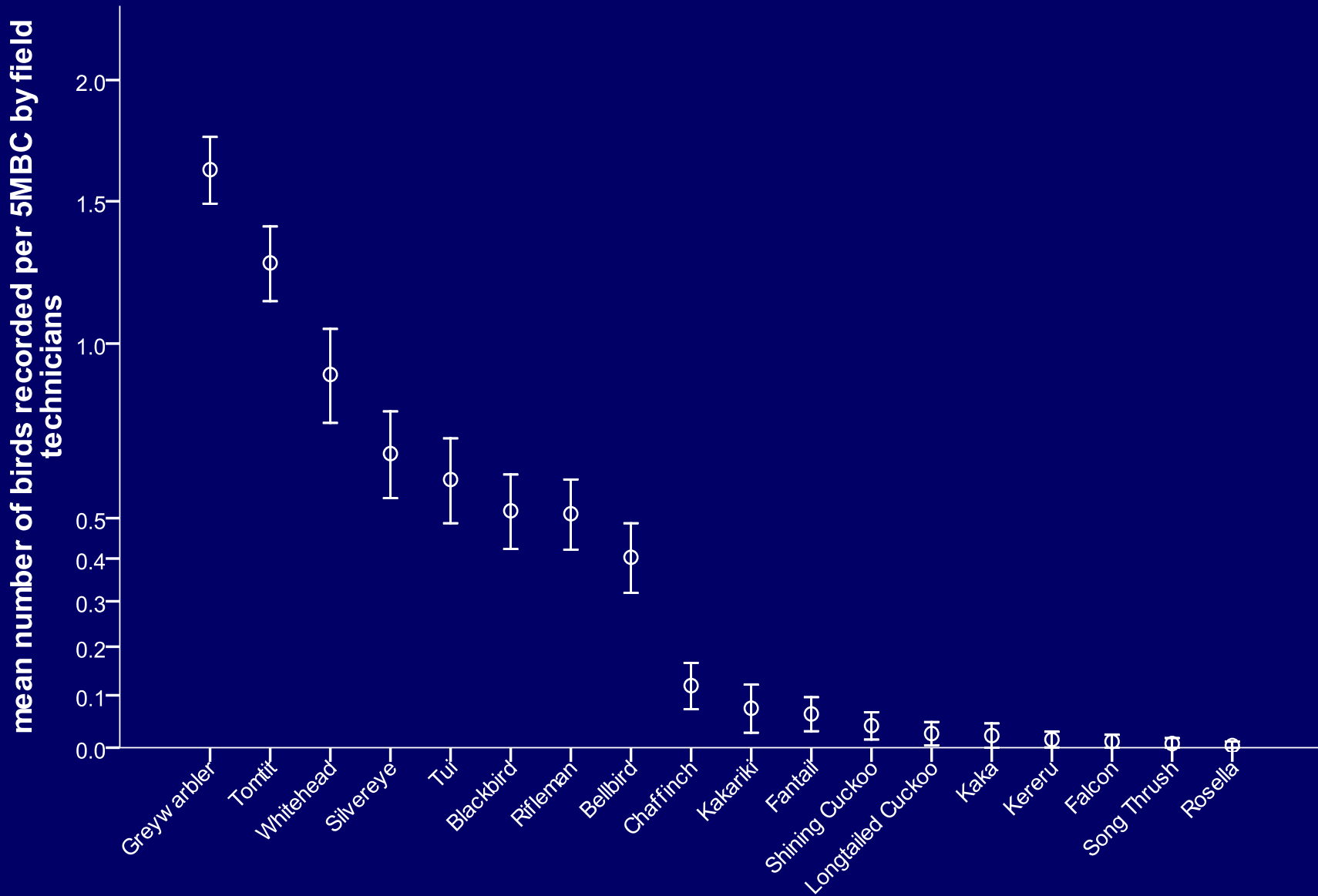




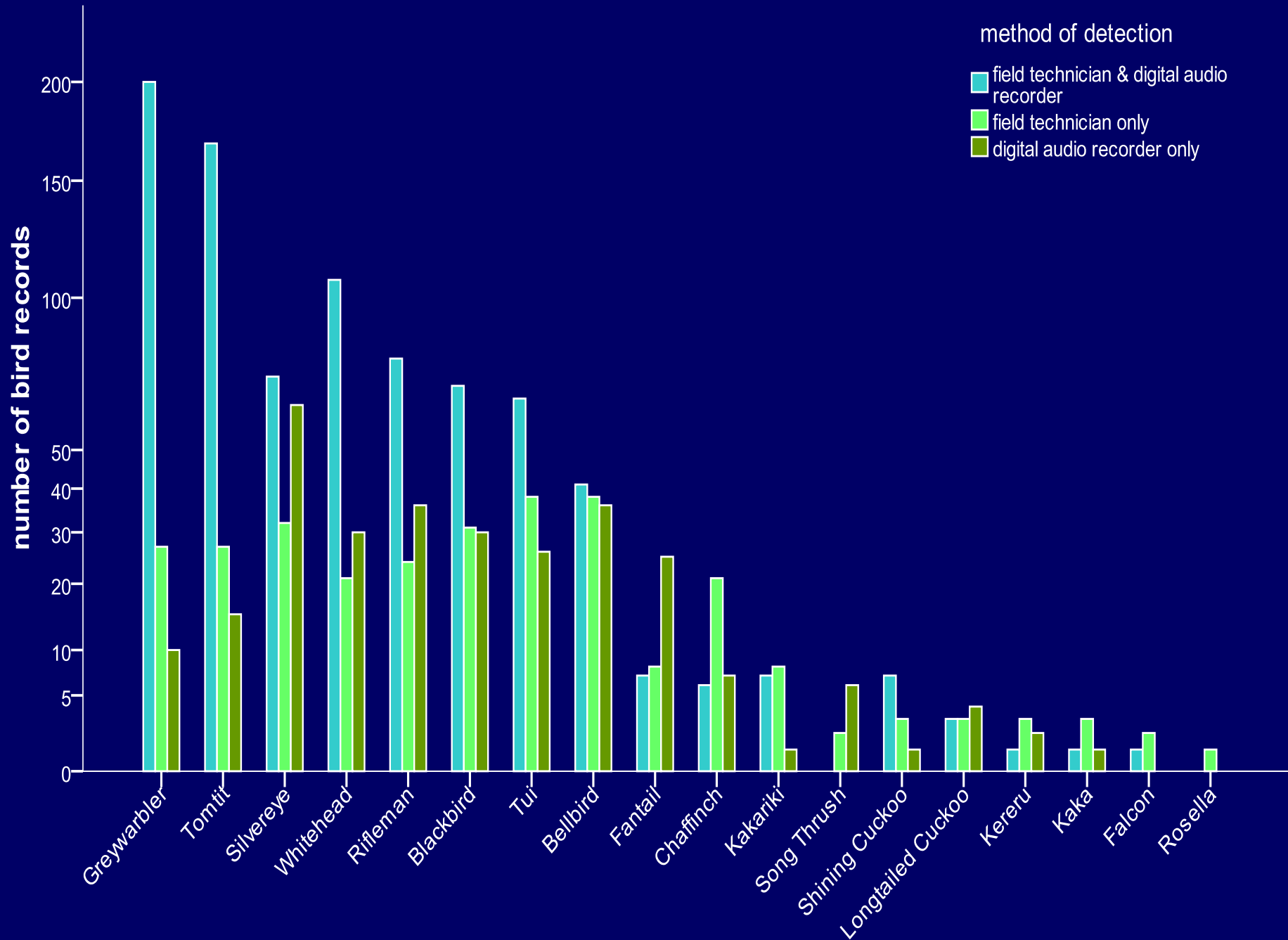
Acoustic Recorders – Birds

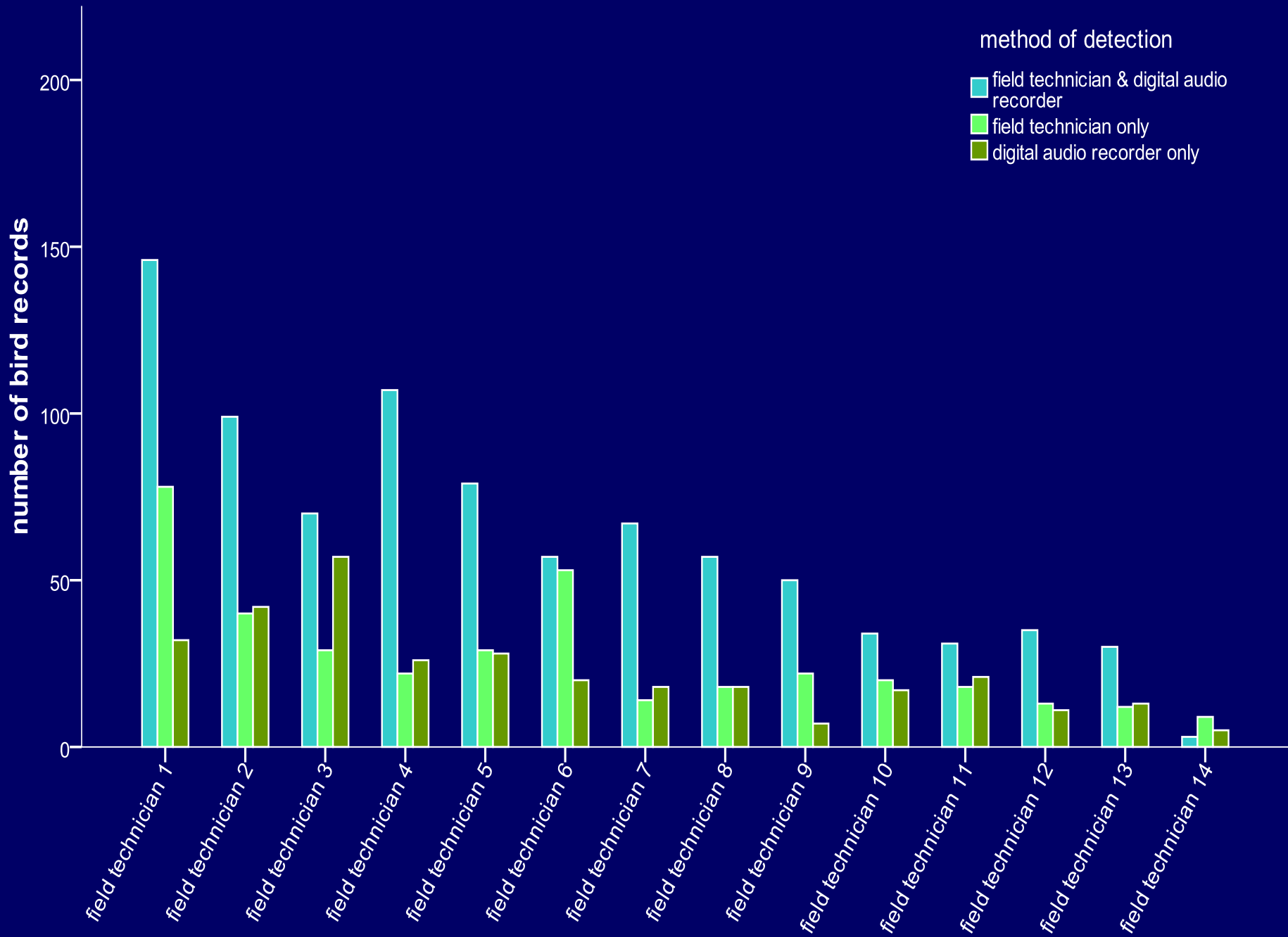






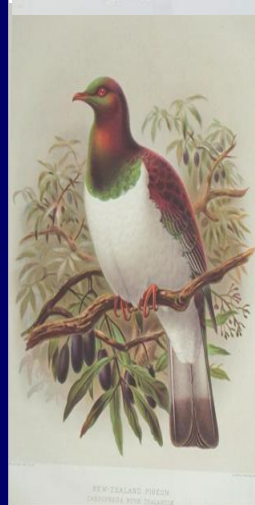
Error Bars:
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What next?

- 1080 applied
 - Project Kaka area 2013&2016
 - Hutt Catchment 2015
- Ensure sampling is consistent and executed to a high standard
- Develop models that accurately predict the effect of treatment and interactions between animal pests, fruiting events, & native flora & fauna
- Report on progress
 - Stakeholder newsletters
 - Internet
 - Science literature



Acknowledgements

- DOC Graeme Elliott, Maheswaran Rohan, Josh Kemp, Ben Reddiex, Colin Miskelly, Jack Mace, Clare Veltman, Wairarapa and Kapiti AO staff
- Greater Wellington RC – Philippa Crisp, Kim Broad, Owen Spearpoint and field staff
- Landcare Research - Mandy Barron, Wendy Ruscoe, Rob Allen & Peter Bellingham



Questions?

