Monitoring introduced mammalian predators in the Whangamarino Wetland

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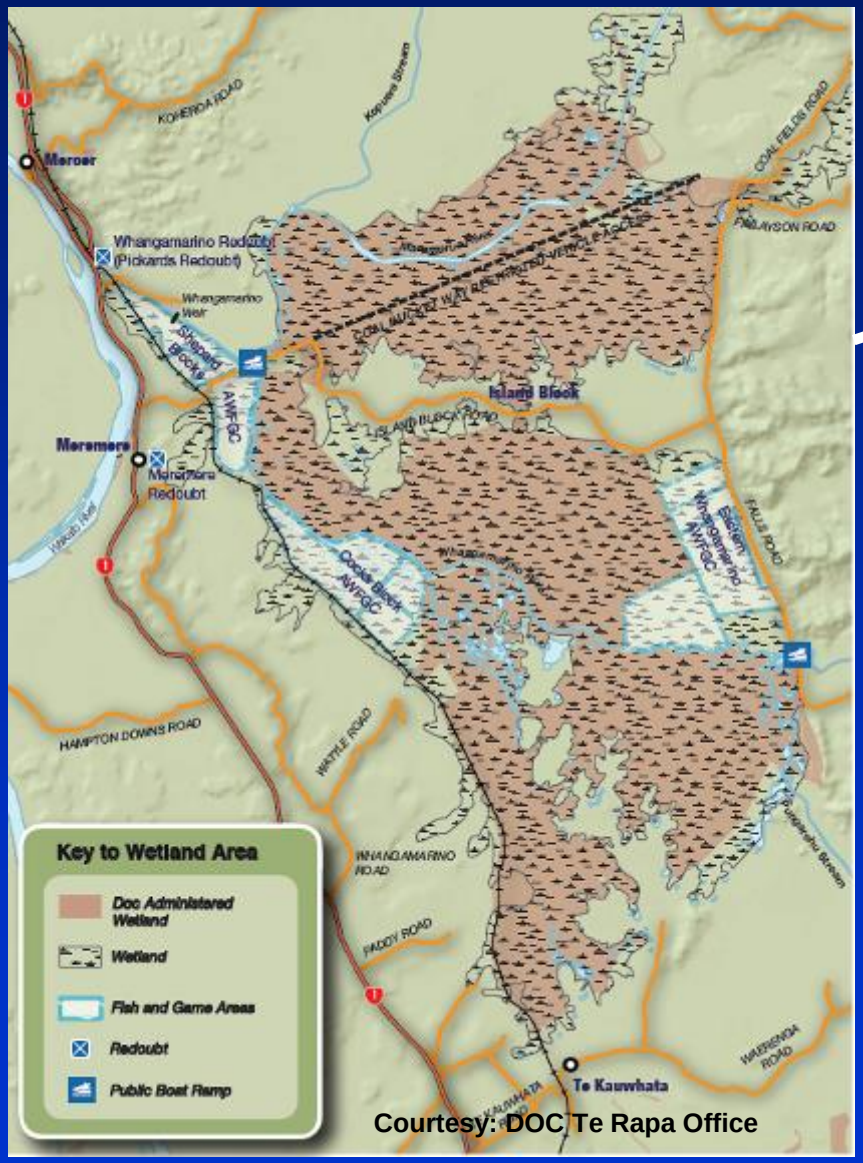
Whangamarino wetland



Courtesy: DOC Te Rapa Office

Photo: K. Duggan

Introduced mammalian Predators in wetlands

- Little known about the ecology of mammalian predators in wetlands
- Concern that existing management & monitoring techniques may not work in wetlands

Aims

1. Describe the mammalian predator guild
2. To test, develop & validate small mammal monitoring techniques
3. To identify the types of wetland habitats these predators are using
4. Investigate how these predators respond to periodic inundations

Methods

- Live trapping - Jan-10 – Mar-14
  - 1 pilot session
  - 4 x 4 seasonal sessions
  - estimates of abundance
- Cage traps & Edgar traps
  - feral cats & mustelids
  - 10 nights
- Rat cages & Longworths
  - rats & mice
  - 5 nights

Methods cont…

- Trail Cameras
  - ScoutGuard SG550 & SG560
  - 4 nights
  - fresh rabbit meat lure
- Peanut scented WaxTags®
  - 3 and 7 nights
  - NPCA possum protocol

Live trap records
(17 survey sessions Jan-10 to Mar-14)

Species	Individuals Marked	1st time captures (in a session)	Recaptures (within a session)
Feral cats (140 TN/session)	47	58	0
Ferrets (380 TN/session)	115	218	739
Weasels (380 TN/session)	21	26	21
Stoats (380 TN/session)	2	2	0
Ship rats (200 TN/session)	77	106	15
Norway rats (200 TN/session)	56	59	9
Mice (200 TN/session)	515	604	370
Hedgehogs	36	40	22


ScoutGuard
03.16.2013 12:08:20


ScoutGuard
12.14.2012 18:56:17


HCO ScoutGuard
3.16.2012 22:06:05


ScoutGuard
12.14.2012 18:21:07


ScoutGuard
12.15.2012 12:29:03


ScoutGuard
03.17.2012 11:59:43


ScoutGuard
09.16.2013 23:11:01


HCO ScoutGuard
6.14.2013 20:01:22


ScoutGuard
06.15.2013 06:08:17


ScoutGuard
12.17.2011 11:48:22


HCO ScoutGuard
12.13.2013 11:27:18


ScoutGuard
09.15.2012 17:25:06


ScoutGuard
03.16.2014 11:21:16


HCO ScoutGuard
9.15.2011 16:56:39


ScoutGuard
03.17.2012 20:27:51


ScoutGuard
03.18.2012 00:59:19


ScoutGuard
06.14.2013 22:48:53

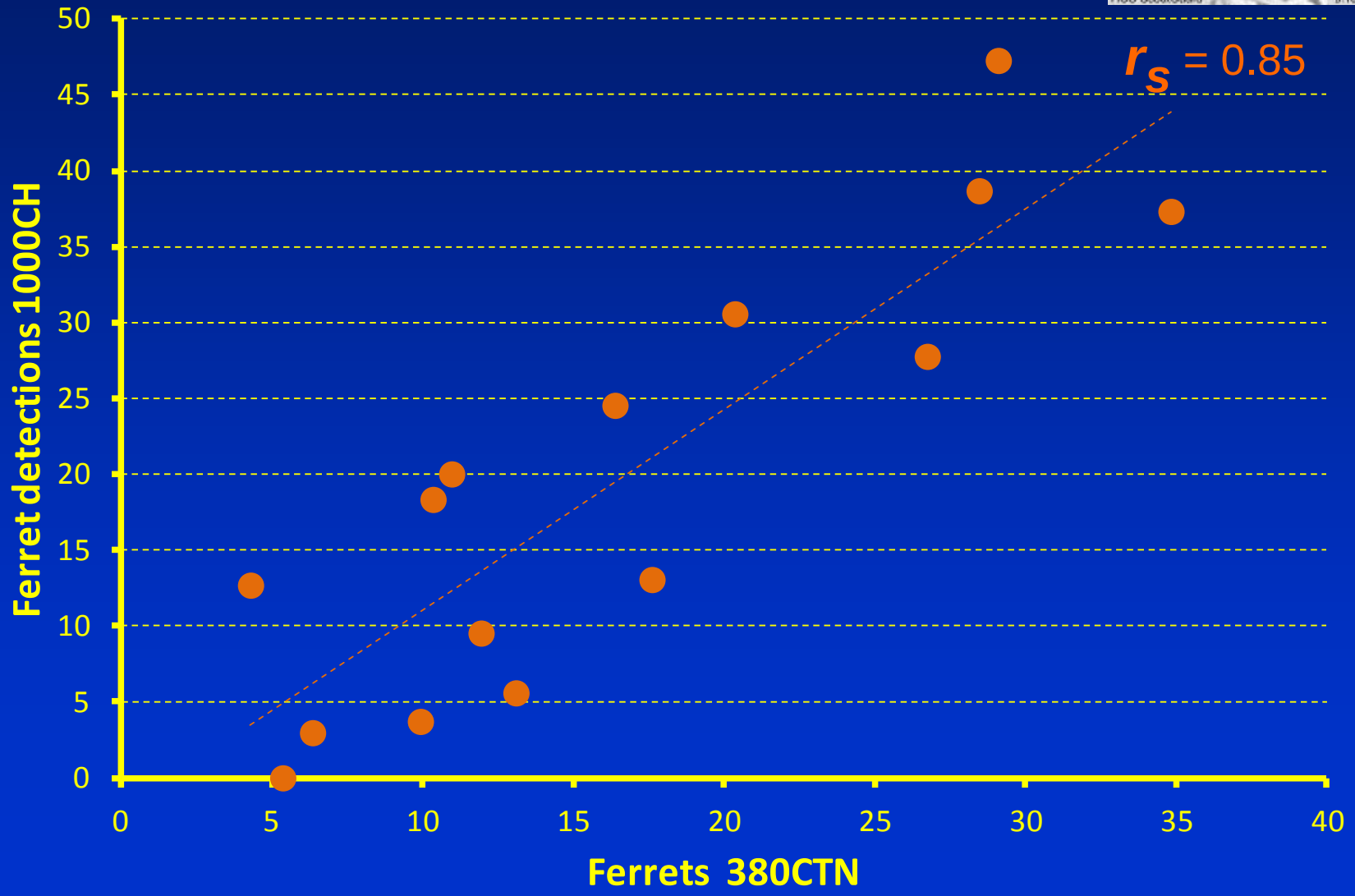

HCO ScoutGuard
03.17.2014 07:41:34


ScoutGuard
12.14.2012 13:21:01

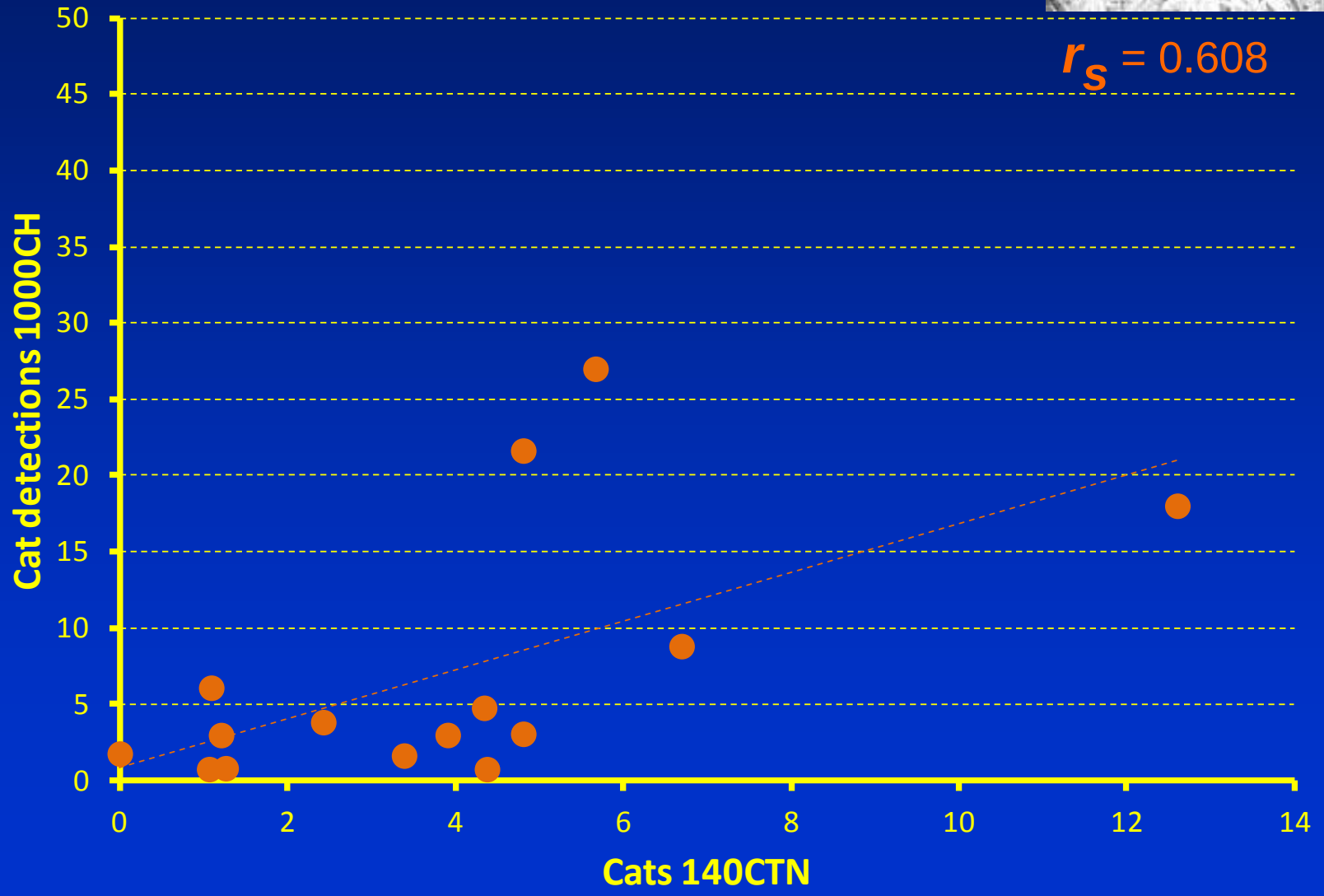

HCO ScoutGuard
12.14.2013 10:08:28


ScoutGuard
09.16.2013 10:22:59

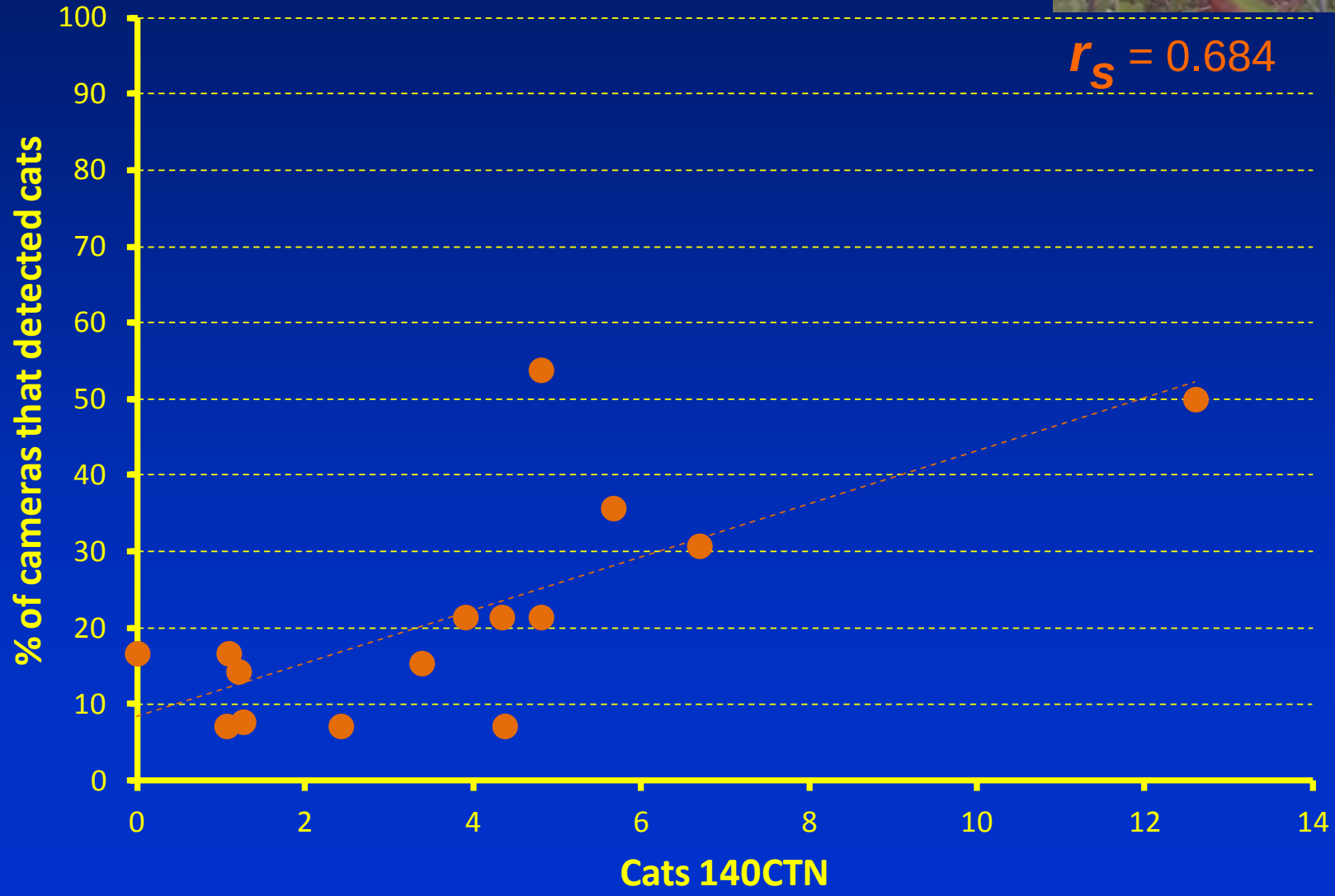
Ferrets caught in live traps cf. detections in trail cameras



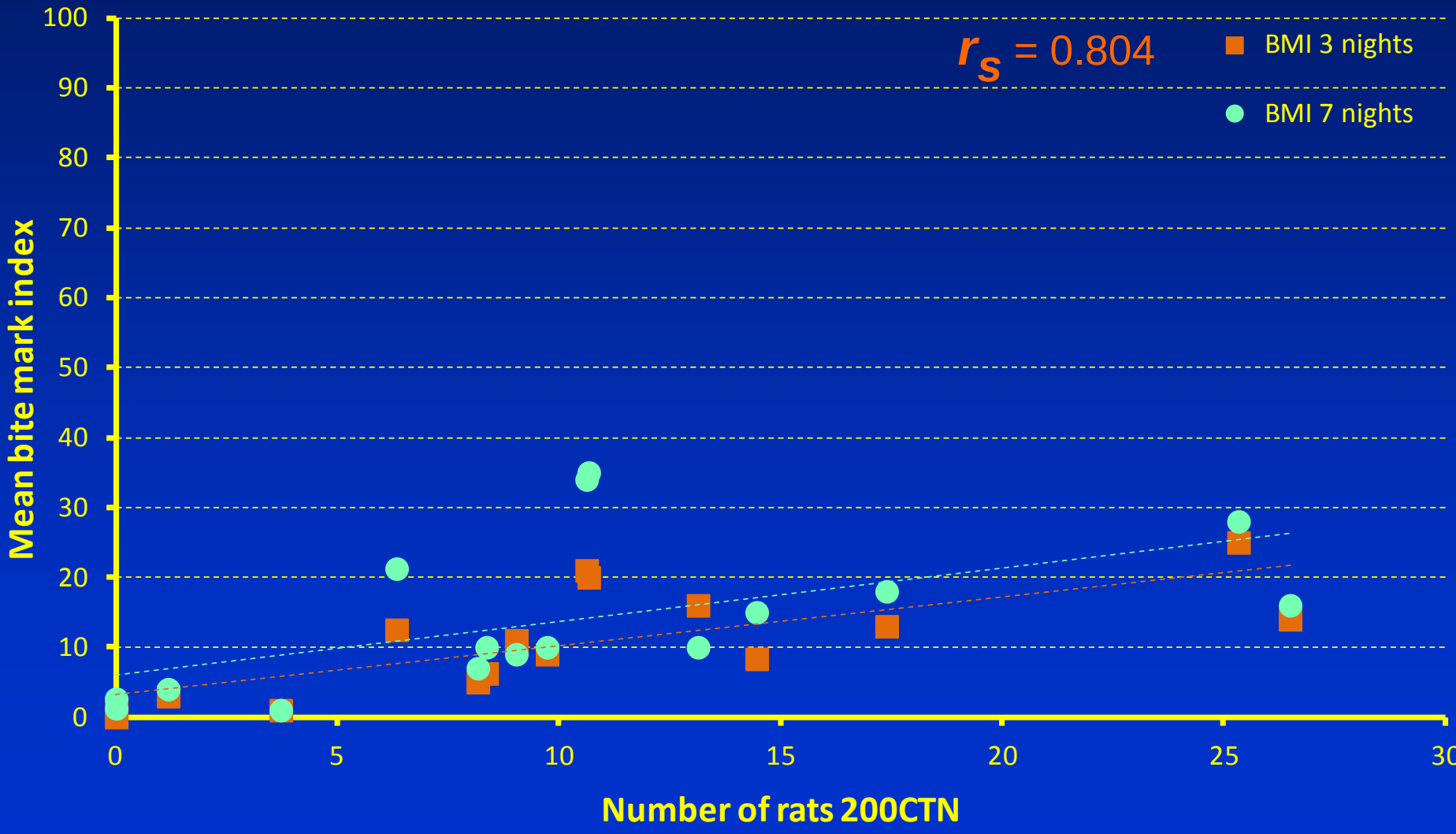
Cats caught in live traps cf. detections in trail cameras



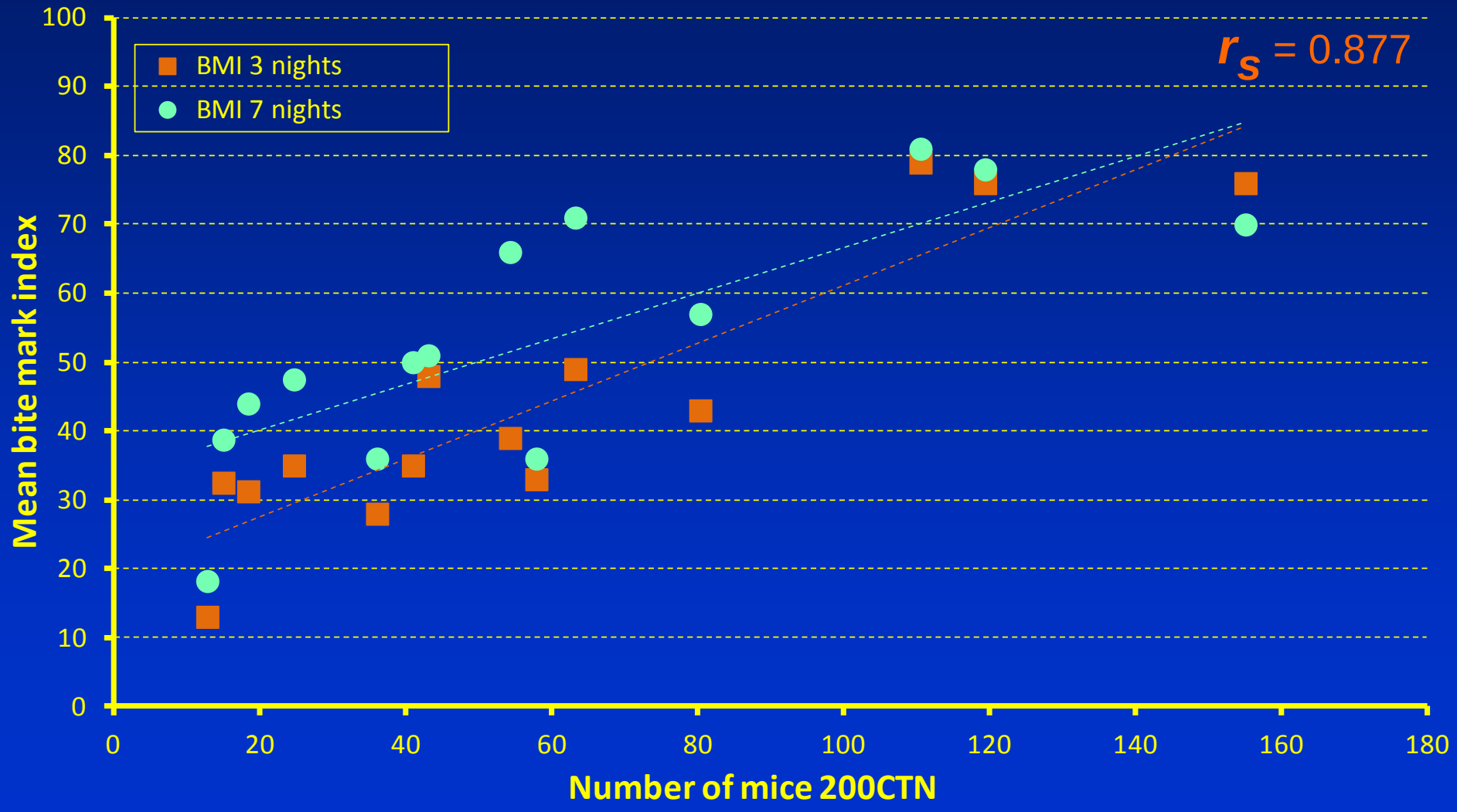
Cats caught in live traps cf. % of trail cameras that detected cats



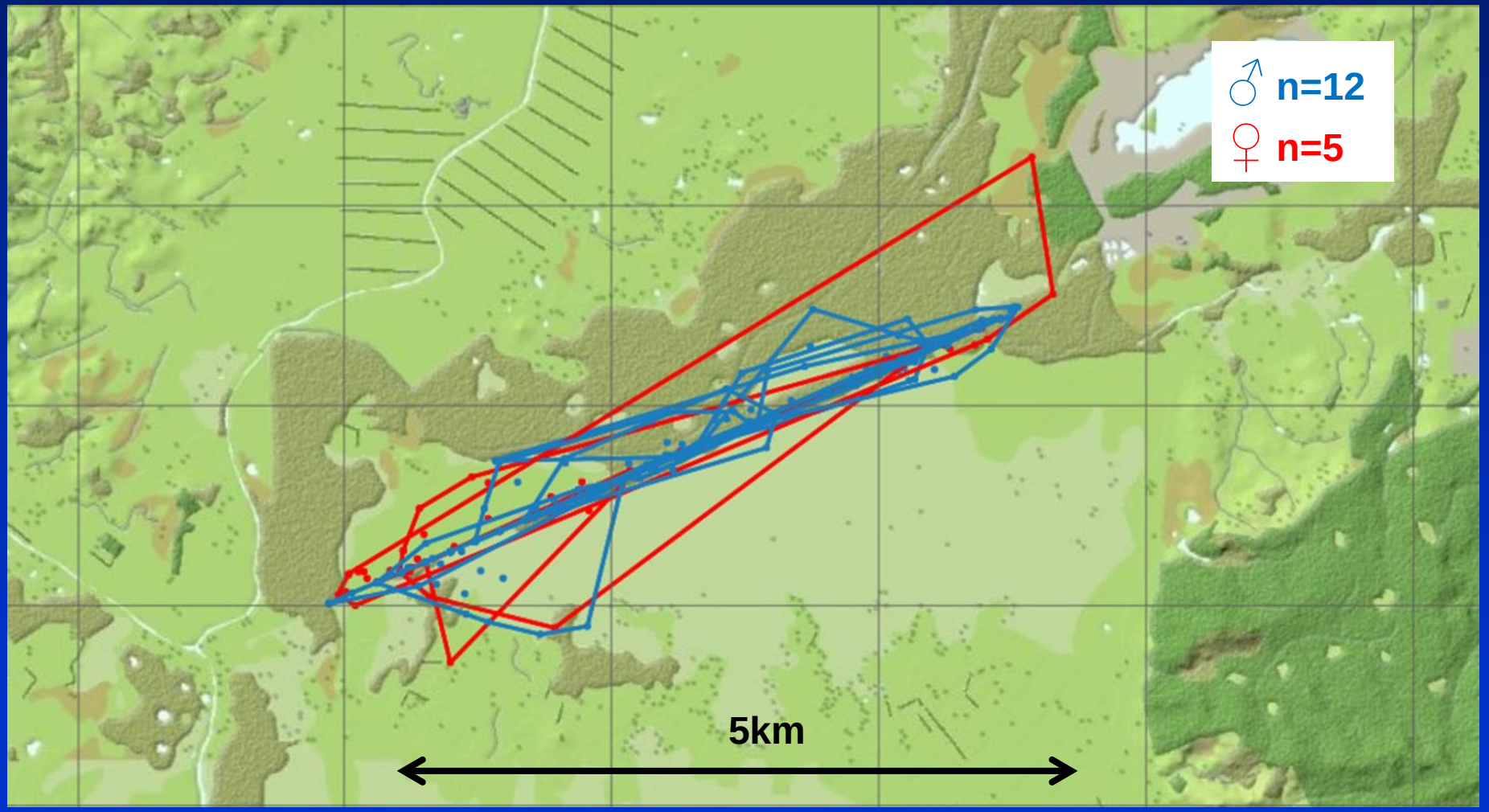
Rats caught in cage traps cf. WaxTag® indices



Mice caught in Longworth traps cf. WaxTag® indices

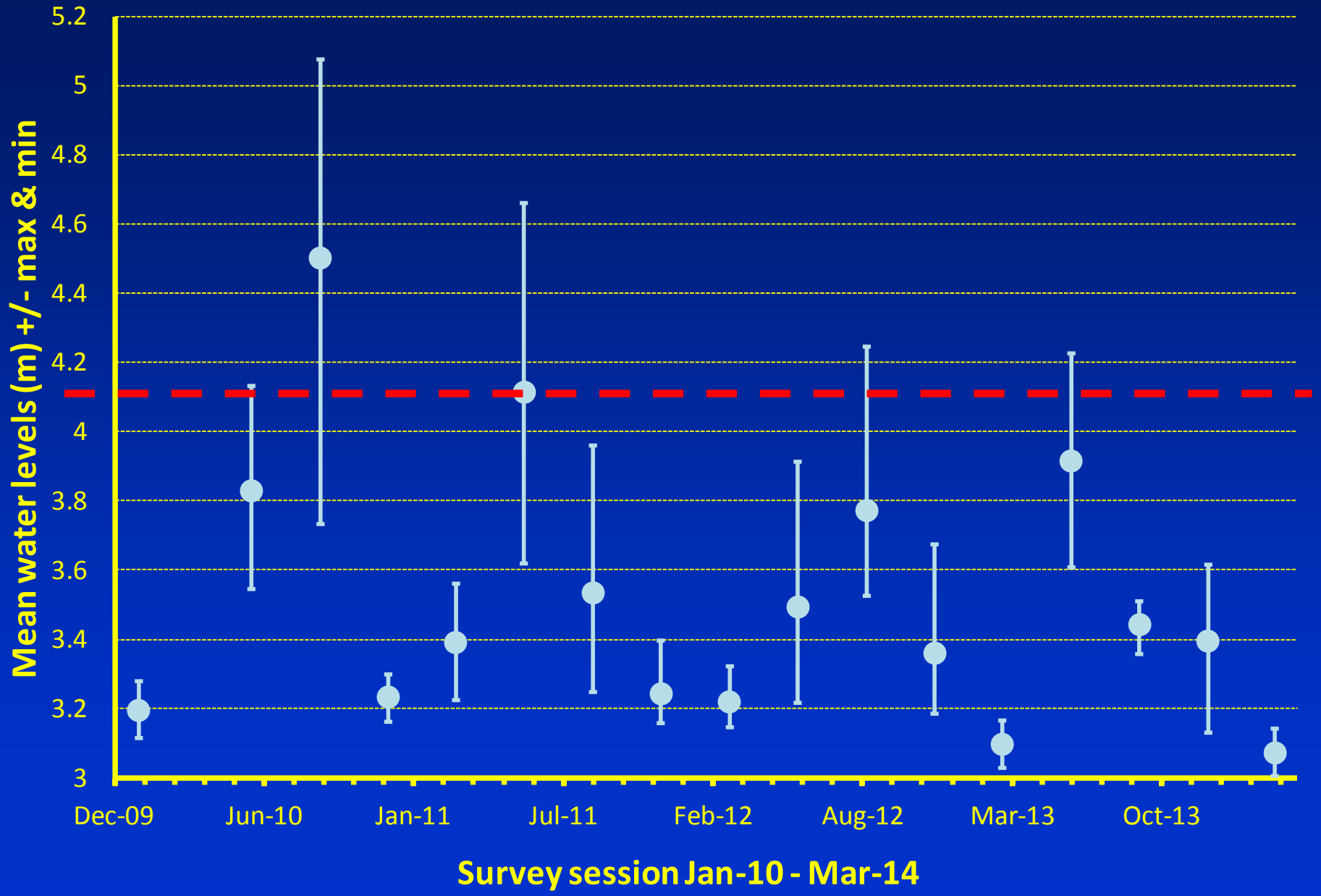


Ferret MCP Home Ranges Northern Whangamarino



Inundations and effects on predators?

Water levels during our survey sessions



~9.8km

~8.5km

Challenges

- Rapid changes in water levels
  - restricted where we could set traps, may have introduced some bias especially for mice
- Possum interference with rat cages
  - rat indices biased
- Vandalism & theft of kit
- TB Free trapping operations

Summary

- Ferrets most numerous of mammalian carnivores present in Whangamarino
  - followed by feral cats & weasels
  - stoats present but least abundant of the mustelids
- Norway and ship rats present
  - Mice abundant in places

Summary cont...

- Trail cameras are a potential monitoring technique for small mammal predators
  - especially for ferrets
- WaxTags® are a potential monitoring technique for rodents
  - especially mice

Summary cont...

- Predator habitat use in the wetland?
  - cannot tell from our data
  - but were able to describe home ranges for ferrets
- Predator responses to periodic inundations?
  - hard to measure, but heavy flooding events probably have some effect on individuals

Acknowledgements

- Chris Annandale, Kevin Hutchinson, Lucy Roberts, Shay Dean and all the other staff from the Te Rapa Office who provided advice & support over the four years of the project
- Hugh Robertson, Kate McInnes and Nic Gorman S&P Group
- Hannah Divehall, Carisse Enderwick, Lucy Fitzgerald, Natasha Grainger, Mike Paviour & Eric Pene for giving us a hand