The robust grasshopper

Brachaspis robustus

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Conservation translocation

> " The intentional movement and release of a living organism where the primary objective is a conservation benefit "
>
> *– IUCN 2013*

Achieving a conservation benefit

- Optimise founder populations
- Remove driver of population decline

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Optimise founder populations

- Reproductively viable individuals
- Minimal loss of reproductive individuals
- Populations which can maintain genetic diversity over time

Reproduction and development

- Polygamous mating system

Males and females mate with multiple individuals of the opposite sex

- Females lay 1 – 2 egg batches in a season (probably more)
- Egg batches contain between 17 and 35 eggs

Proposed life cycle




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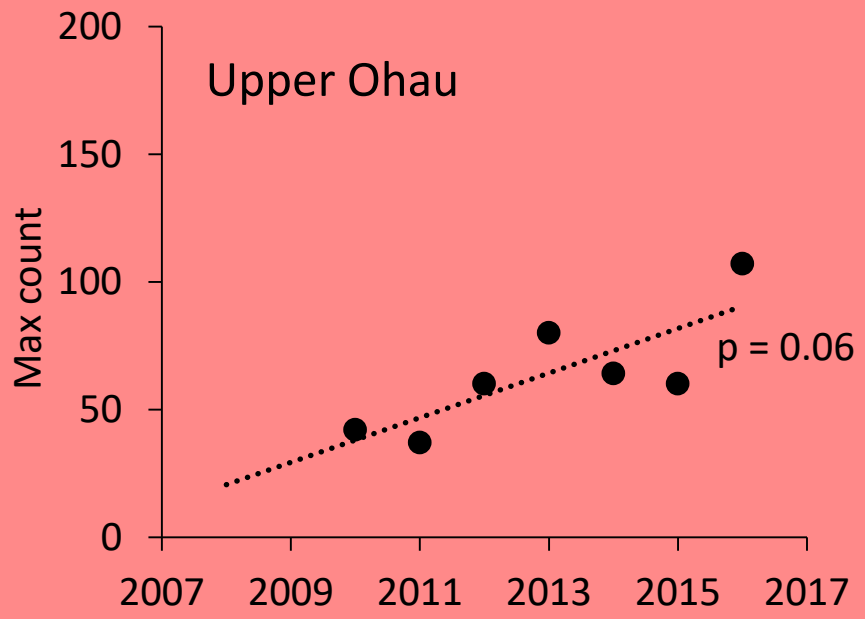
Could it be predatory mammals?

Nocturnal behaviour

Nocturnal behaviour of adult females is highly vulnerable
to predation by nocturnal mammals

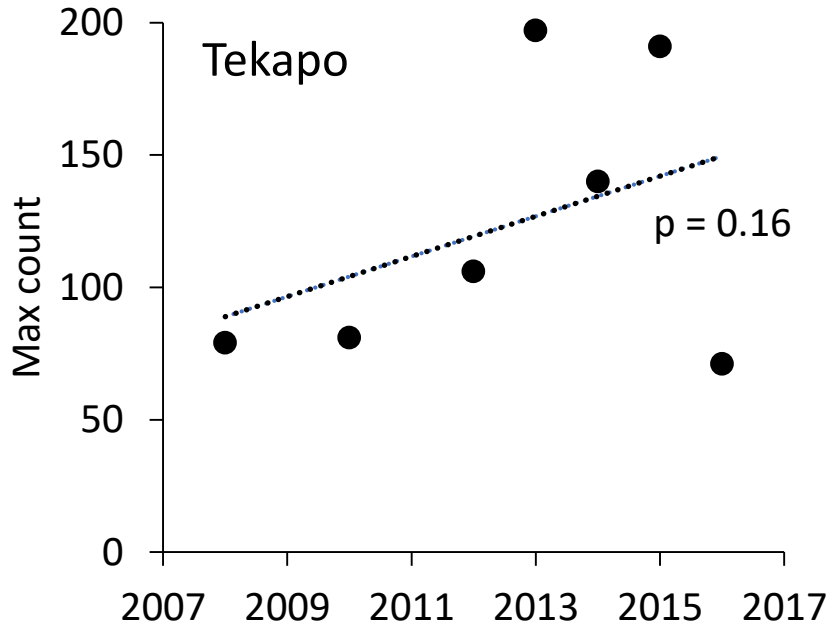
Evidence from other Mackenzie grasshoppers?

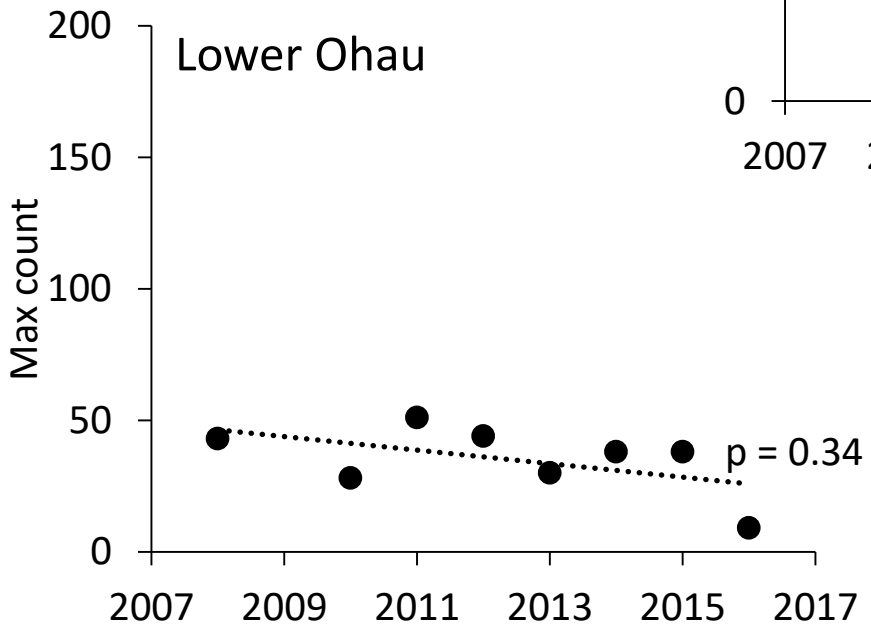
Predator control



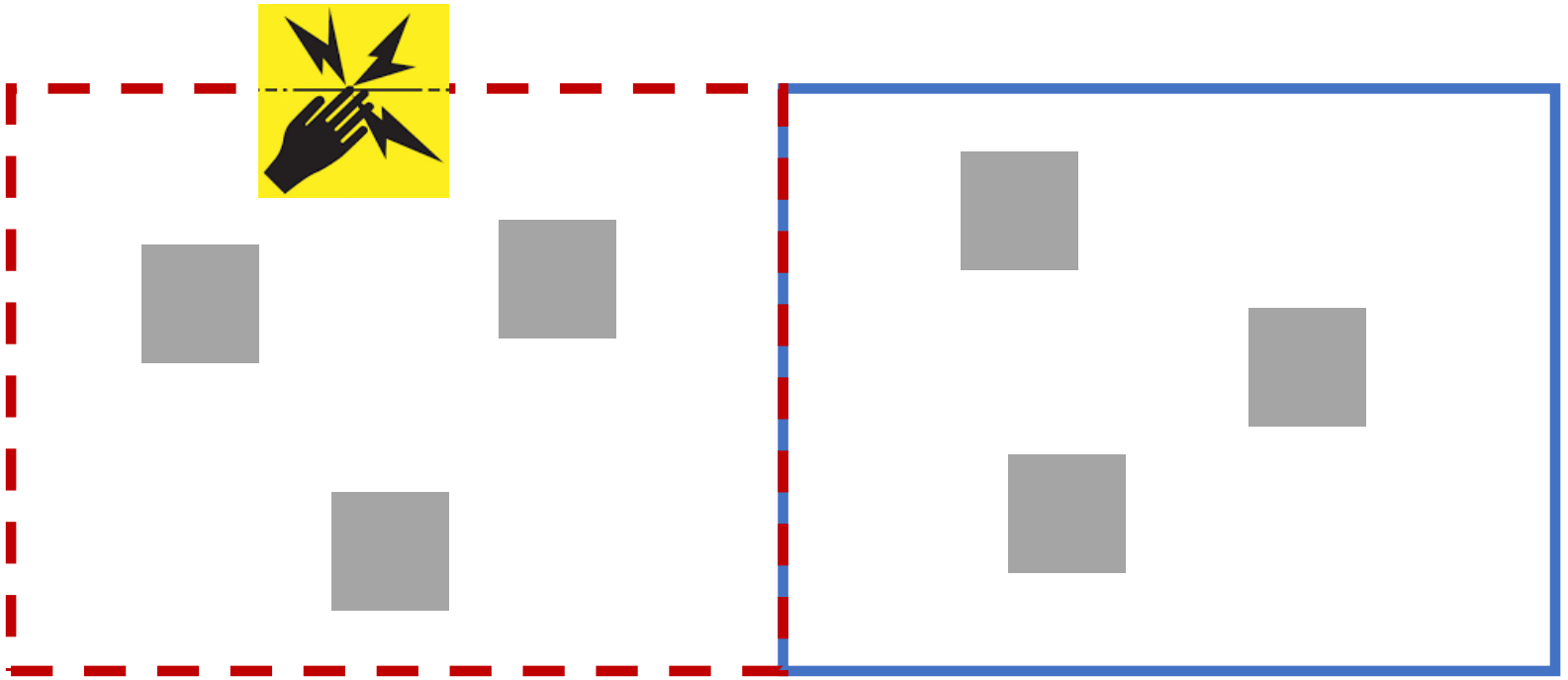
Counted 14 more individuals on average each year

No predator control

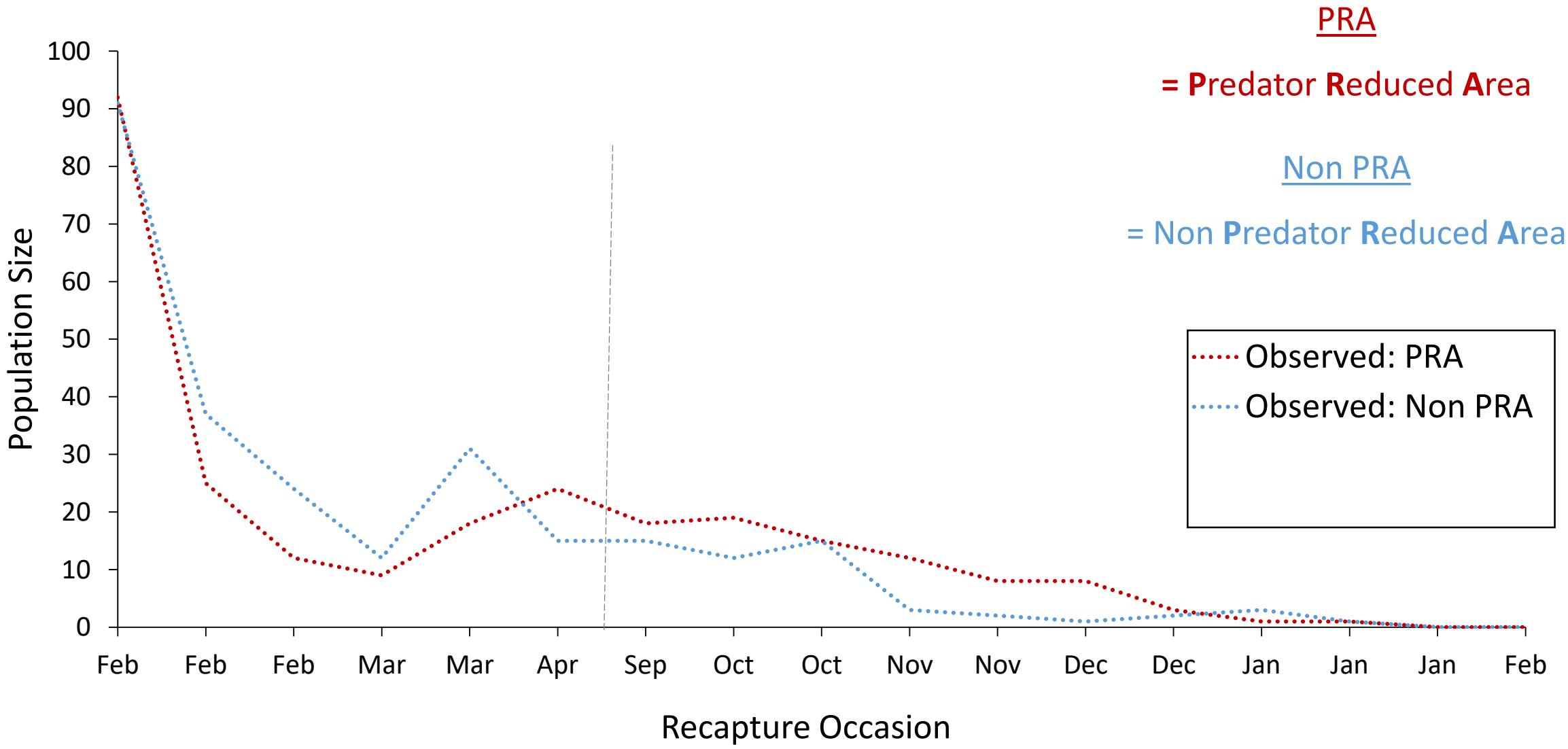




Experimental translocation



Translocated robust grasshoppers



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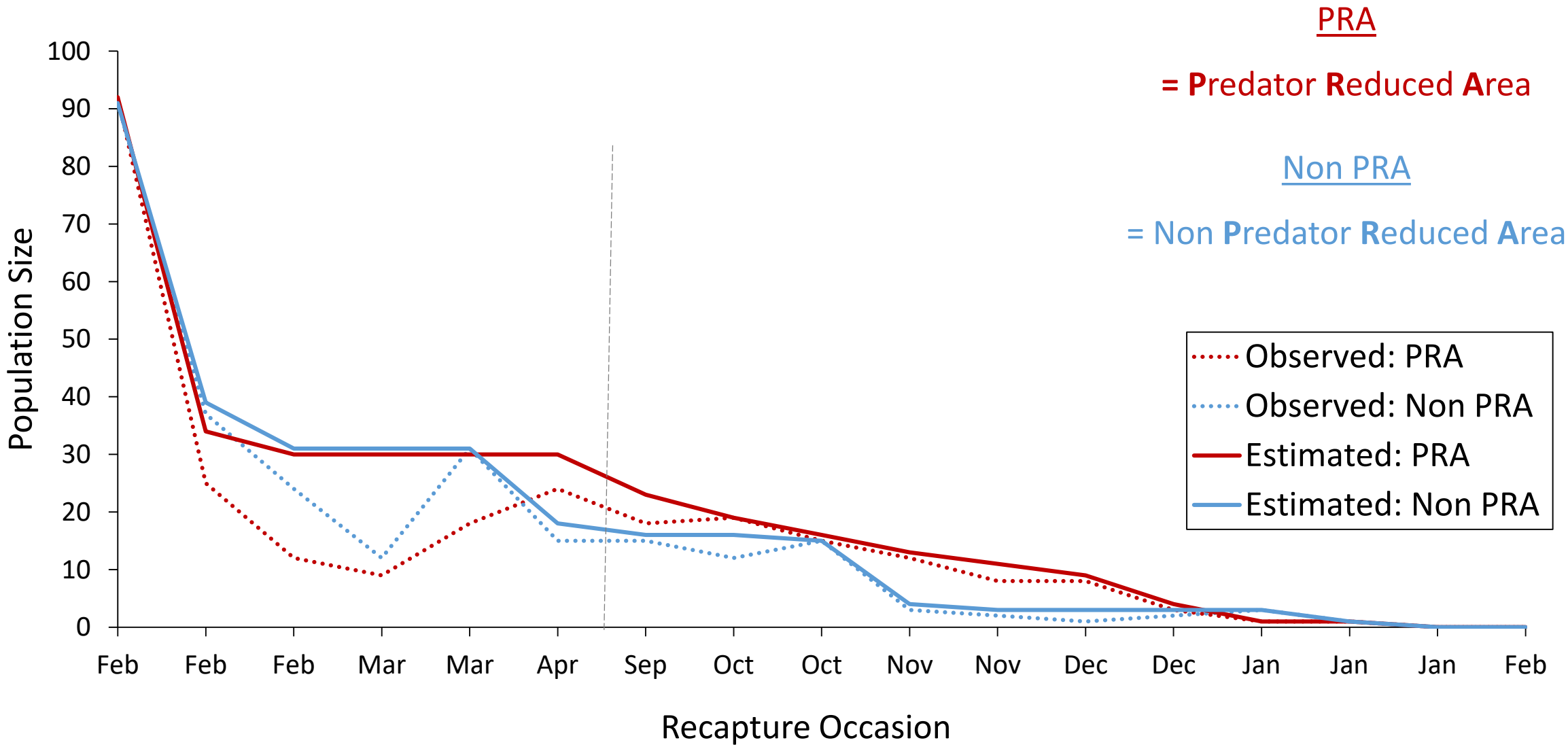

https://www.jonesfish.com/

Minnow trapping:

Only caught 2 lizards!

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Visual searches:

6 vs. 18

In PRA In Non PRA

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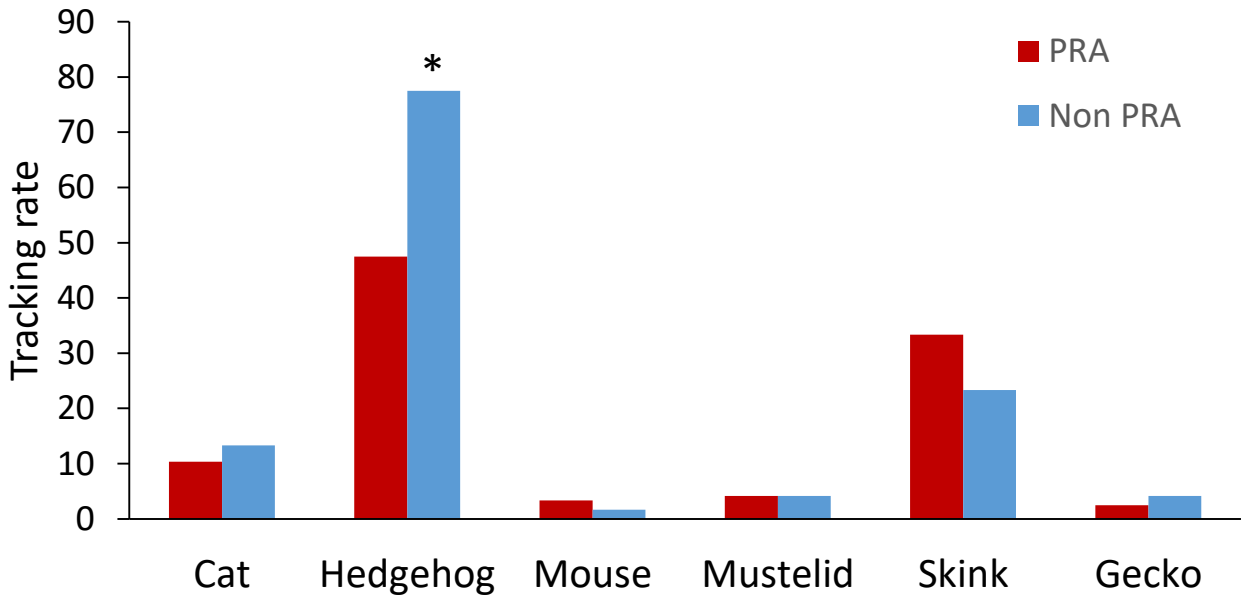
http://sciencelearn.org.nz/

Tracking tunnels:

Fewer hedgehogs in PRA

(p=<0.001, df=)



Linking decline to mammalian predation

- Mammalian predators in both areas
  Only hedgehogs present in significantly lower abundance
- More predators than just mammals
  Birds, skinks, predatory invertebrates
- Multiple pressures during translocation
  Stress, dispersal, starvation
- Very difficult to determine cause of death
  Continuous moulting, highly cryptic

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Conclusion: Moderate predator control not sufficient

Acknowledgements

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Forest & Bird TE REO O TE TAIAO | *Giving Nature a Voice*

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