

Supplementary material

Table S1. How, when and where priority research questions were addressed to assess the feasibility of eradicating invasive pigs (*Sus scrofa*), mice (*Mus musculus*) and cats (*Felis catus*) from subantarctic Auckland Island.

Target	Priority research questions	Action	Timing	Site*	Reference
Mice	Can mice be eradicated using a baiting prescription of 2 x 4 kg ha ⁻¹ in the summer season and with cats present?	Mouse non-toxic biomarker bait uptake trial with cats present.	Summer February 2019	Falla Peninsula	Russell et al. (2019)
		Mouse eradication test using single application of 3 kg ha ⁻¹ of bait.	Winter July 2017	Adele Island (87 ha), New Zealand	Livingstone et al. (2022)
		Mouse eradication test using two applications of 4 kg ha ⁻¹ of bait.	Winter July 2019	Maud Island (318 ha), New Zealand	Oyston et al. (2022)
Mice	What is the population density and smallest home range of mice and when are they breeding? And how would periodic tussock seeding events (masting) affect mouse abundance and the likelihood of eradication success with the proposed baiting prescription?	Live mark and recapture trial; and kill-trap transects in three habitat types (rātā, scrub, tussock).	Summer February 2019	Falla Peninsula	Russell et al. (2019); Sagar et al. (2022)
		Kill trap transects in three habitat types to reference population.	Summer February–March 2019	Deas Head	
		Repeat of live mark and recapture trial to compare winter to summer following large tussock mast event in March 2019.	Winter August 2019	Falla Peninsula	Sagar et al. (2022)
		Repeat of kill trap transects in three habitat types to reference population.	Winter August 2019	Deas Head	
		Repeat of kill trap transects in three habitat types to reference population.	Summer November 2019	Deas Head	
		Repeat of live mark and recapture trial.	Summer January 2020	Falla Peninsula	
		Repeat of kill trap transects in three habitat types to reference population.	Autumn March 2020	Deas Head	
Repeat of live mark and recapture trial in second winter following tussock mast event.	Winter August 2020	Falla Peninsula			
Cats	What is the most appropriate bait matrix for a vertebrate toxic agent for cats?	Bait palatability trial comparing three bait matrices for development of toxic bait for cats.	Winter August 2019	Deas Head	Cox et al. (2022b)

Table S1. Continued.

Target	Priority research questions	Action	Timing	Site*	Reference
Cats	What are the population density, habitat usage, activity periods and range of home range sizes for male and female cats across the seasons on Auckland Island?	A sample of 18 cats were caught and collared with GPS tracking units on Auckland Island.	Summer/Autumn November 2018–March 2019	Deas Head and Sealers Creek in Port Ross; Falla Peninsula; Carnley Harbour	Rodríguez-Recio et al. (2022)
		Additional sample of 19 cats were caught and 11 were collared with GPS tracking units on Auckland Island.	Winter/Spring August–September 2019	Camp Cove, Carnley Harbour; Deas Head	
		Additional sample of 3 cats were caught and 1 was collared with a GPS tracking unit on Auckland Island.	Summer January 2020	Falla Peninsula	
Cats	What is the detectability of cats using a 500 m x 500 m grid of trail cameras and what does it take to manage data from an extensive network of cameras?	Detection trial across a baited grid of cameras (Deas Head); four cats were collared within the trial site in November 2018 and eight cats individually marked with hair bleach to aid detection for this trial.	Summer February 2019	Deas Head	Glen et al. (2022)
		The bait palatability trial provided a repeat sample for the detection of cats within the camera network.	Winter August 2019	Deas Head	
Pigs	What is the detectability and efficacy of dispatching pigs using aerial hunting aided by a high-resolution thermal camera?	Trial temporary eradication from fenced peninsula site.	Summer January 2019	Falla Peninsula	Cox et al. (2022a)
Pigs	Is it feasible to use a team of ground hunters working together to detect and dispatch remaining pigs on Auckland Island following aerial hunting?	Trial temporary eradication from fenced peninsula site.	Summer January 2019	Falla Peninsula	Cox et al. (2022a)
Pigs	How effective are automated pig feeders and pig traps on Auckland Island and how should they be used?	Automated feeders baited with kibbled corn tested at ten sites and monitored with trail cameras.	Summer January 2019	Area west of Smith Harbour	Cox & Macdonald (2022)
Infrastructure	How much effort does it take to cut tracks in different vegetation zones? Where are the best locations for base facilities? Are fences feasible to install for pig management?	Test cutting access tracks for study sites; site assessments.	Summer November–December 2018	Deas Head, Carnley Harbour, Falla Peninsula/Smith Harbour	Cox et al. (2019)

Table S1. Continued.

Target	Priority research questions	Action	Timing	Site*	Reference
Logistics	What is the frequency of suitable weather windows for helicopter operations?	A helicopter (AS350 B2) was present on Auckland Island to deliver aerial hunting for the pig eradication trial. Another helicopter (AS 350 B2) supported ground hunting for the pig eradication trial and deliver the mouse bait uptake trial. Conditions and duration when weather suited helicopter activities were recorded.	Summer January–February 2019	Falla Peninsula	Cox et al. (2019)

*All sites are on Auckland Island unless otherwise indicated.

References

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