Supplementary Material

Do high recapture rates indicate representative sampling? The relationship between recapture probability, risk-taking, and personality

Kyla Chloe Johnstone[A,], Clare McArthur[A], and Peter Bruce Banks[A]*

[A]School of Life and Environmental Sciences, The University of Sydney, Sydney, NSW 2006, Australia.

[*]Correspondence to: Kyla Chloe Johnstone School of Life and Environmental Sciences, The University of Sydney, Sydney, NSW 2006, Australia Email: johnstonek@landcareresearch.co.nz
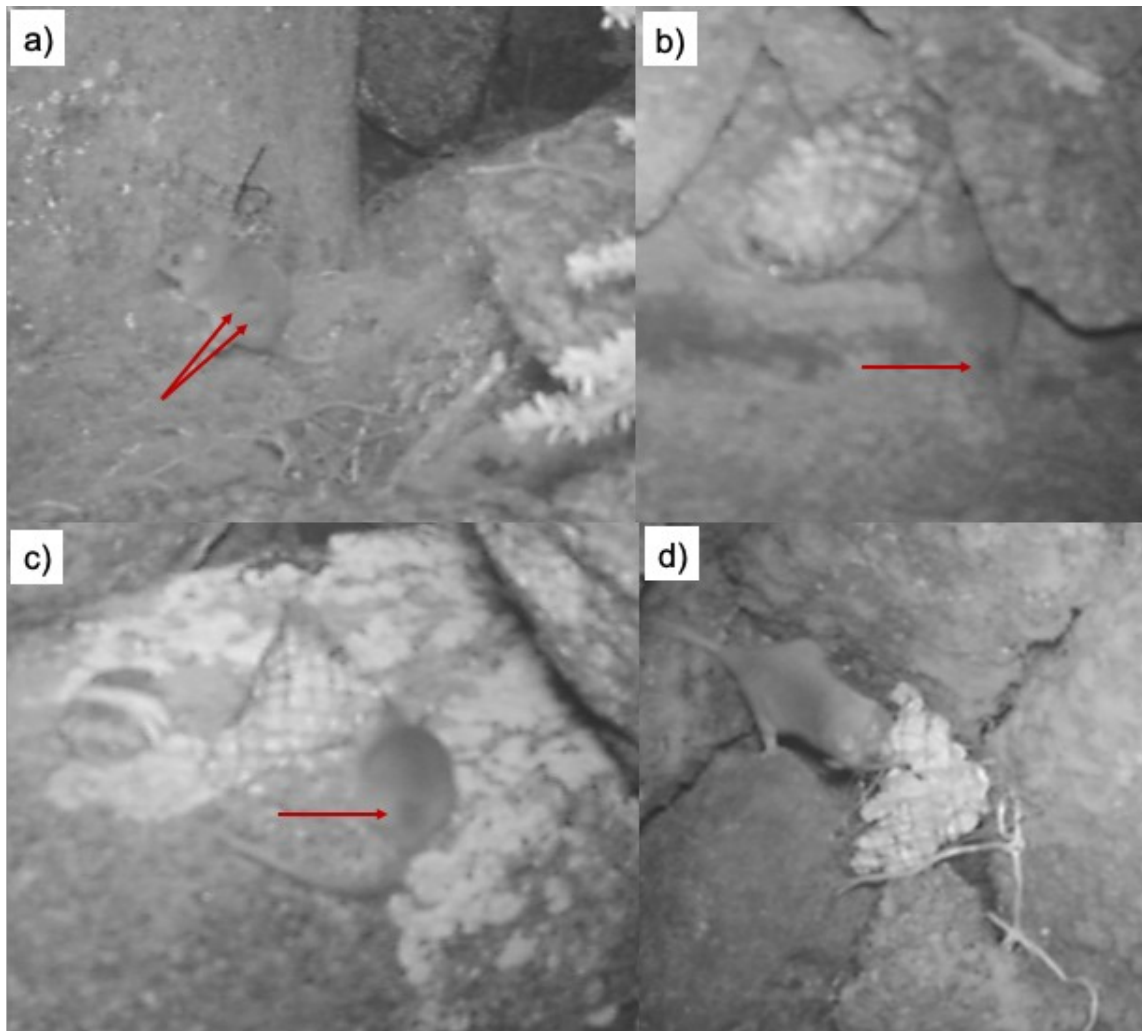
Supplementary material

Fig. S1. Identifying individual mountain pygmy-possums at feeders. Most individuals (n = 40) were identifiable via unique fur marks (a). Some individuals (n = 13) were given a common mark (b-c) to identify them as 'trapped'. Untrapped animals were clearly identifiable via the absence of a fur mark (d).
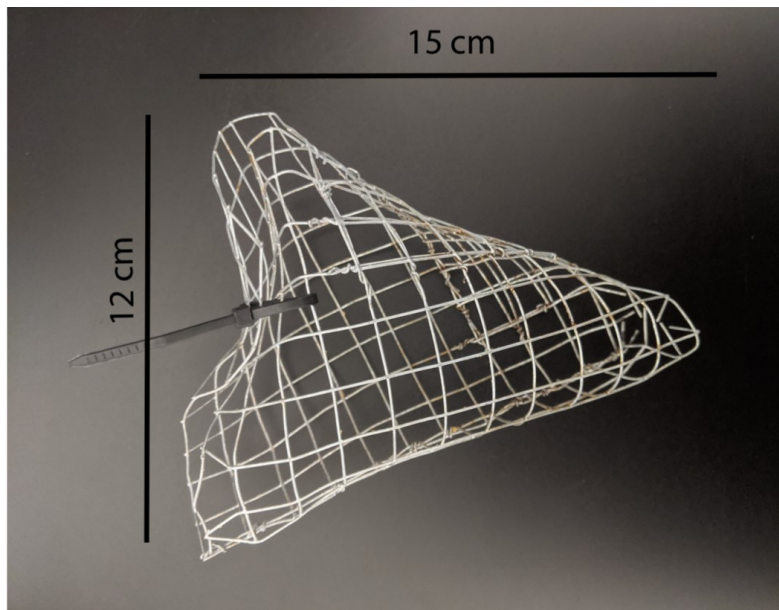
Fig. S2. The mesh feeder used to test risk-taking during foraging. The feeder design allows animals to forage but prevents the rapid removal of food.

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Camera set up

Cameras and feeders were checked daily. Cameras were set to the highest resolution (1280 x 720 pixels) with a normal PIR trigger, and from 6 pm - 6.30 am, filmed 60 s videos with no interval, if an animal was present. Cameras were mounted horizontally above Sheltered feeders and on vertical stakes facing Exposed feeders (Figure 1) – a set up that was unavoidable in the rocky and unstable terrain. Optimal camera orientation (horizontal vs. vertical) can vary depending on the target species (Nichols *et al.* 2017; Smith and Coulson 2012). But we cannot comment on orientation efficacy in our study, as orientation related to the risk manipulations and we expected visit frequency to vary. Of the total videos, the percentage of false triggers from vertical (11.1%) and horizontal (13.8%) cameras were similar, suggesting detection reliability was comparable - although using false triggers may not be the most reliable method to determine optimal orientation (Nichols *et al.* 2017).

Table S1. The ethogram used to score mutually exclusive behaviours of mountain pygmy-possum at feeders using the software Jwatcher.

Key code	Behavioural variable	Definition
A	Approach	Animal is in motion and either approaches the device directly or head is angled towards the device
F	Foraging	Animal is consuming food or attempting to remove food from the device
E	Eating at device	Animal is within the screen view and consuming food removed from the device
G	Groom	Grooming or scratching
I	Investigate	Animal is within one body length of the device and is focused on the device (e.g. sniffing). Not in motion or vigilant
L	Locomotion	Animal is in motion, but not focused on the device
N	Not moving	Animal not moving and not vigilant
V	Vigilance	Animal not moving, but is at attention, indicated by a stiff posture and ears or nose twitching
O	Out of sight	Out of sight, off camera or behind an object and not clearly visible

Quantifying behaviours at feeders

Videos were scored by multiple observers blinded to site and individual identity, therefore we checked within- and between-observer reliability before observers began scoring, and several days later, to ensure consistency. We tested reliability using three videos selected for their scoring difficulty, used the Jwatcher Reliability algorithm to scrutinise scoring and examined the "confusion" matrix and line-by-line comparison (Blumstein and Daniel 2007). Scoring was consistent within and between observers. We excluded videos from analysis if (i) multiple animals were present (Exposed feeders n = 19, Sheltered feeders n = 104), (ii) a pygmy-possum was in view for <10 seconds (Exposed feeders n = 196, Sheltered feeders n = 351) or (iii) video length was <30 seconds (Exposed feeders n = 5, Sheltered feeders n = 5).

Table S2. Descriptive statistics for the mountain pygmy-possum trapping session and experimental trial

Population cohort	Charlotte Pass	Lower Blue Cow	Males	Females	Recaptured	Common mark	Identifiable mark	Visited 1+ feeders	Visited Exposed & Sheltered feeders
Known	18	3	7	14	20	6	15	12	6
New	20	12	17	15	23	7	27	20	7
Total	38	15	24	29	43	13	40	32	13

References

Blumstein DT and Daniel JC (2007) 'Quantifying behavior the jwatcher way.' (Sinauer Associates Incorporated, Sunderland, MA)

Nichols M, Glen AS, Garvey P, and Ross J (2017) A comparison of horizontal versus vertical camera placement to detect feral cats and mustelids. *New Zealand Journal of Ecology* **41**, 145-150.

Smith JK and Coulson G (2012) A comparison of vertical and horizontal camera trap orientations for detection of potoroos and bandicoots. *Australian Mammalogy* **34**, 196-201.