



Manaaki Whenua
Landcare Research

Movements of feral cats in the eastern beech forests of the South Island

Ivor Yockney, Laura Young and Cecilia Latham

Introduction

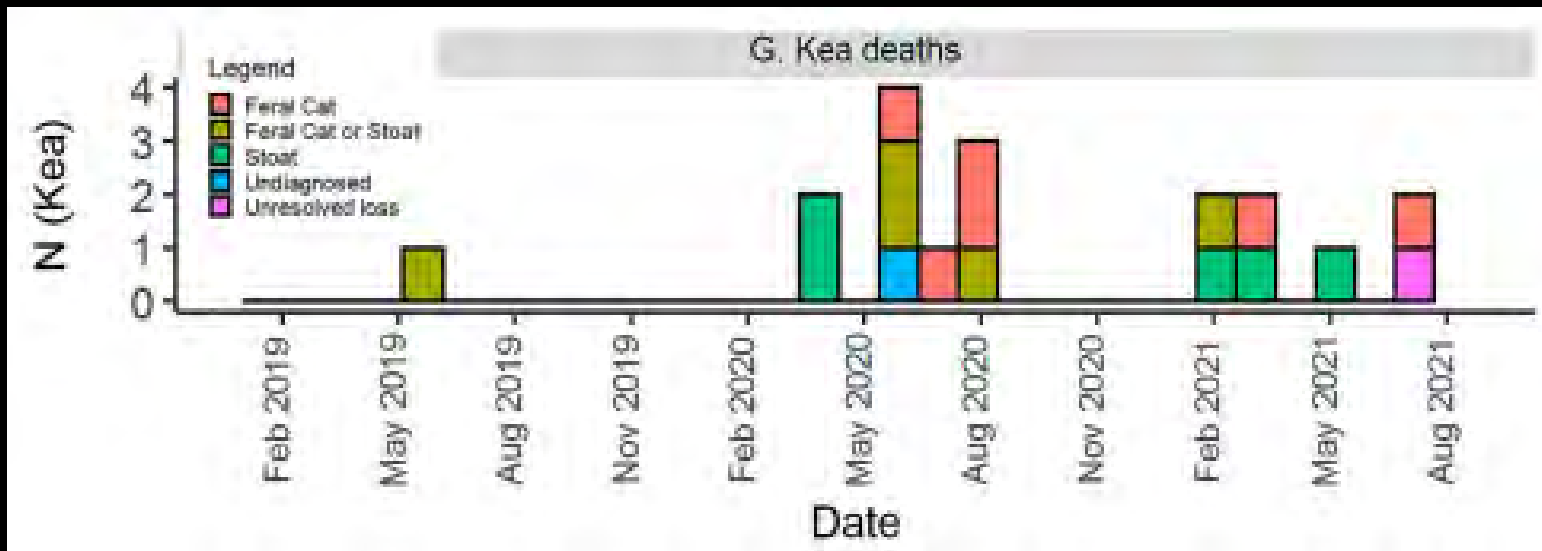
- Kea survivorship monitoring 2019-21 following beech mast adult kea survivorship <60%
- Irrefutable evidence of feral cats killing adult kea off nest (forest and alpine)
- West to east gradient of predation risk



Irruptive dynamics of invasive carnivores and prey populations, and predator control, affect kea survivorship across the Southern Alps

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“When rodents crash and burn, then it’s kea’s turn”

(Josh Kemp 2022)





Little known of feral cat movements, distribution, density and spatial risk in this environment

Short term pain
for long term gain



Study Sites



- Two sites strategically chosen, coincided with kea telemetry study
- Upper Hope Valley (Lewis Pass)
- Trapping March-September 2021



Hawdon Valley (Arthur's Pass NP)

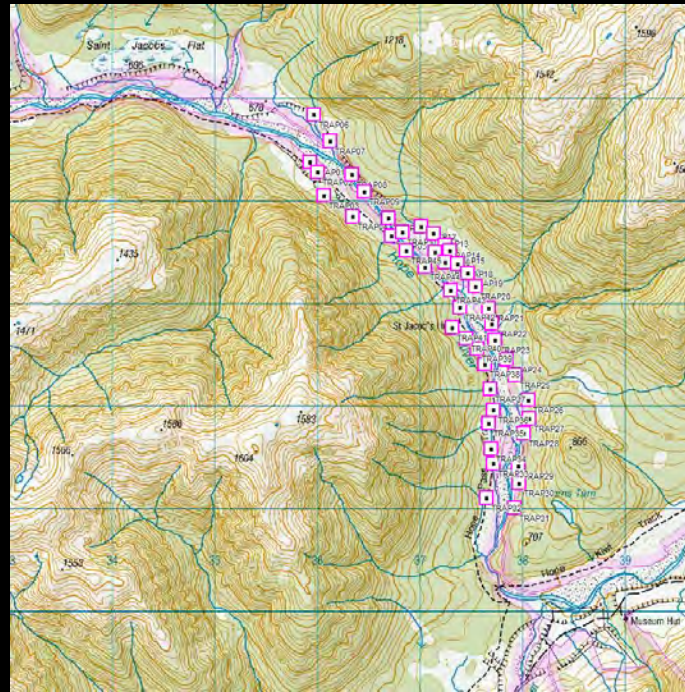
Trapping July-October 2021





Trapping

- Live capture cage traps, set approx. 200m apart
- Baited with fresh rabbit and salmon feed pellets
- Average weights 2.7kg (females) 4.3kg (males)
- Predominantly tabby
- Multiple (n=17) recaptures with one AM cat caught 5 times!



- Ear tagged, weighed, scat samples collected
- GPS/VHF collar fitted
- Left safely to recover





GPS/VHF collar technology

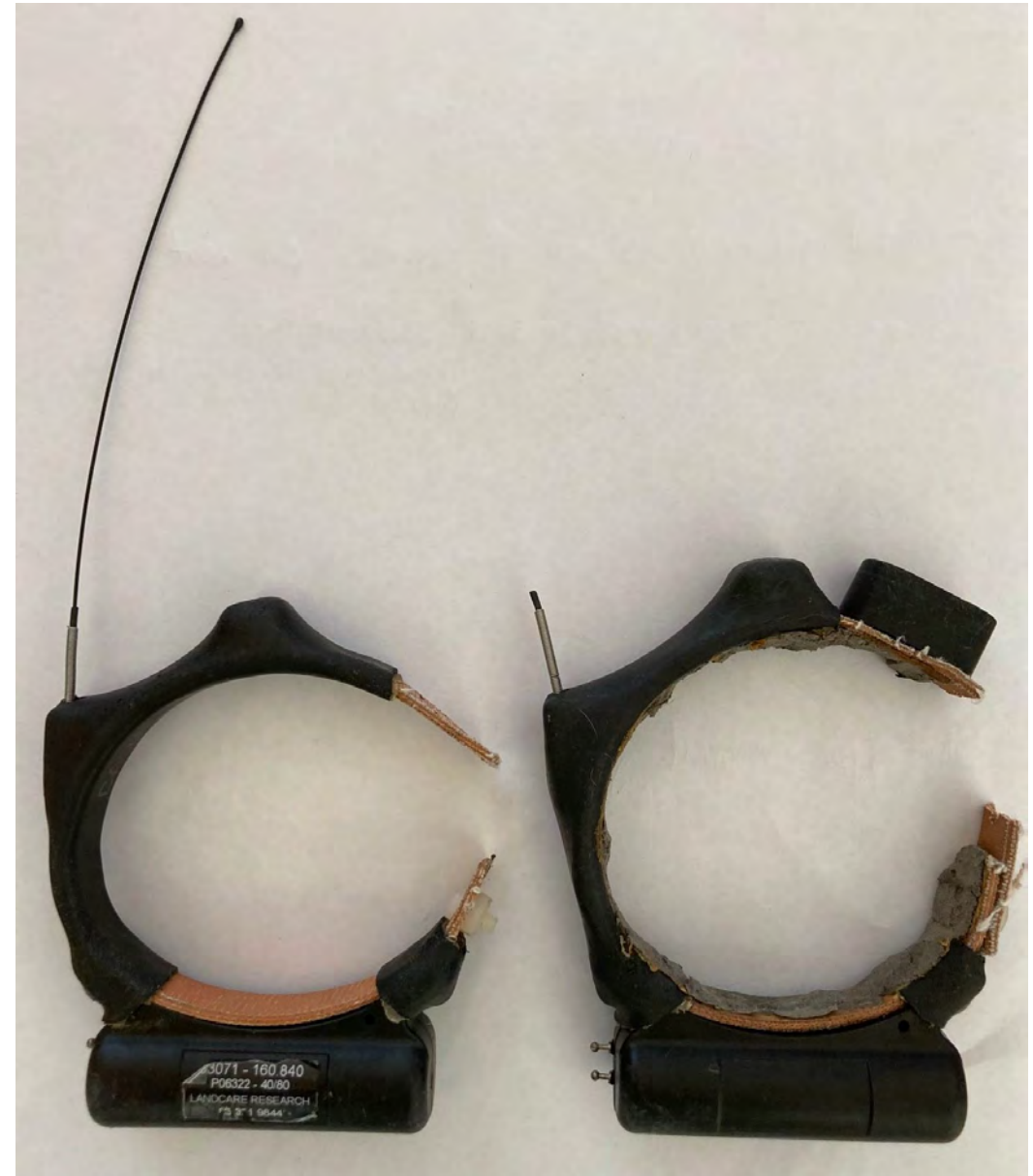
Lotek LiteTrack 140 (120g) 1 fix every hour

Lotek LiteTrack 60 (63g) 1 fix every 4 hours

Swift GPS fixes (post processed)

Remote download via foot, fixed wing or helicopter

Time Release Dropoff (TRD)
on some



Downloading data



- Data downloaded via VHF and commander unit
- Initially excellent via fixed-wing
- Broken aerials..... reduced range (<20m)
- Lightweight helicopter (Cabri G2) / foot



Data Collection



- Early stages of analysis but huge amount of data
- We have acquired 4359 days of movement data and half the collars are still collecting data
- Cecilia Latham (GIS and spatial ecology) to carry out analysis

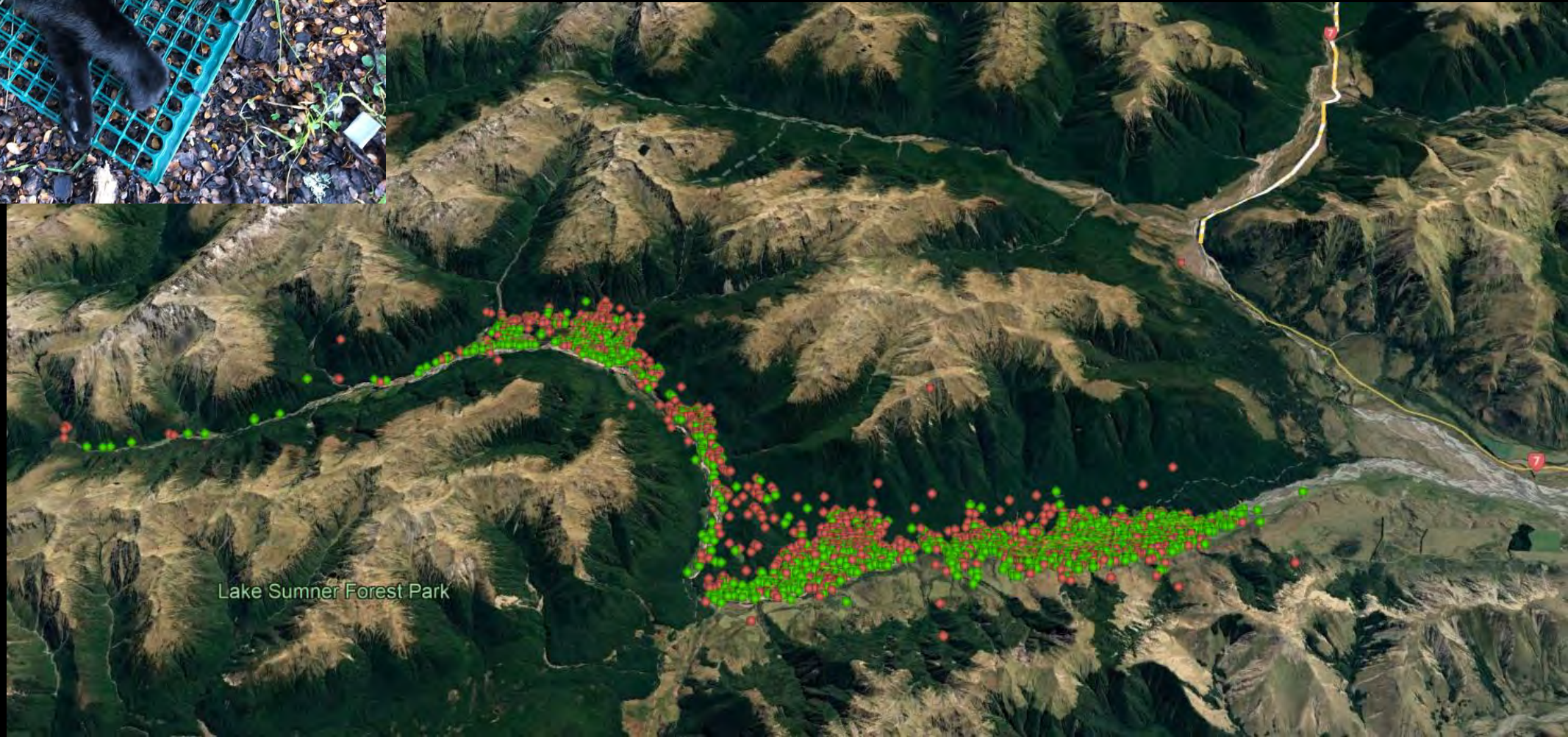




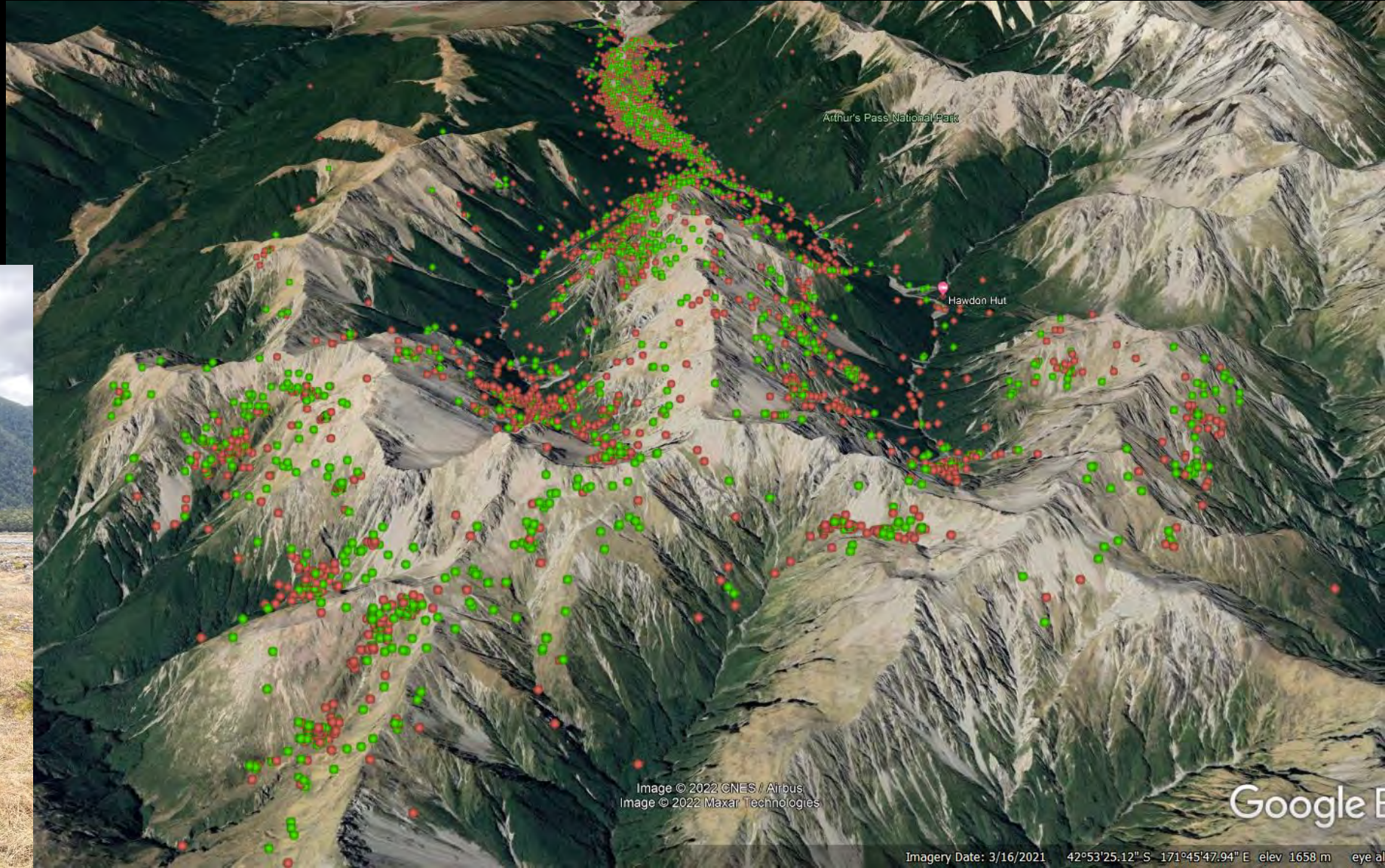
Initial Data



The "Black Panther" (336 days of data)



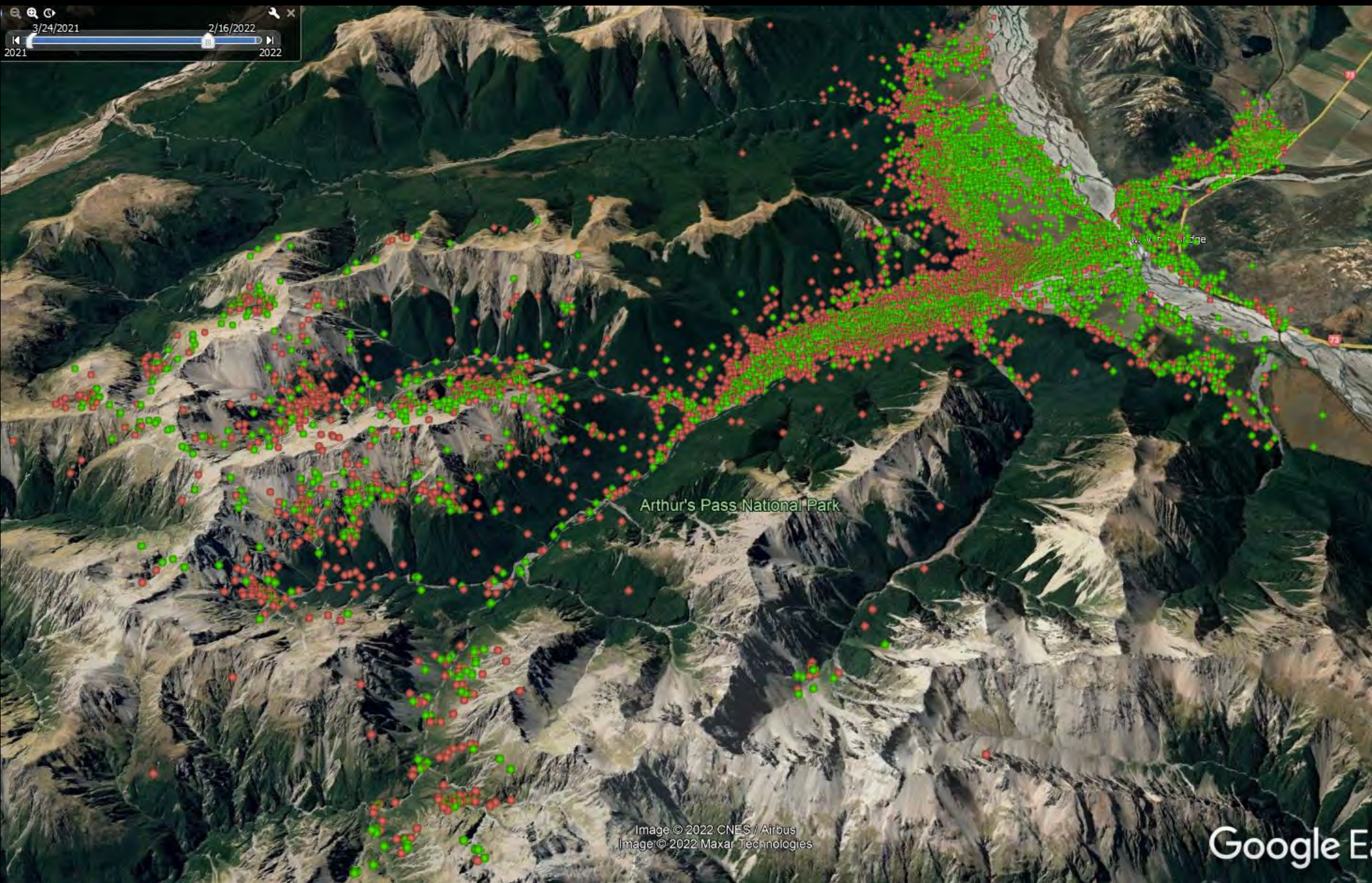
The 'Alpine Specialist' (245 days of data)

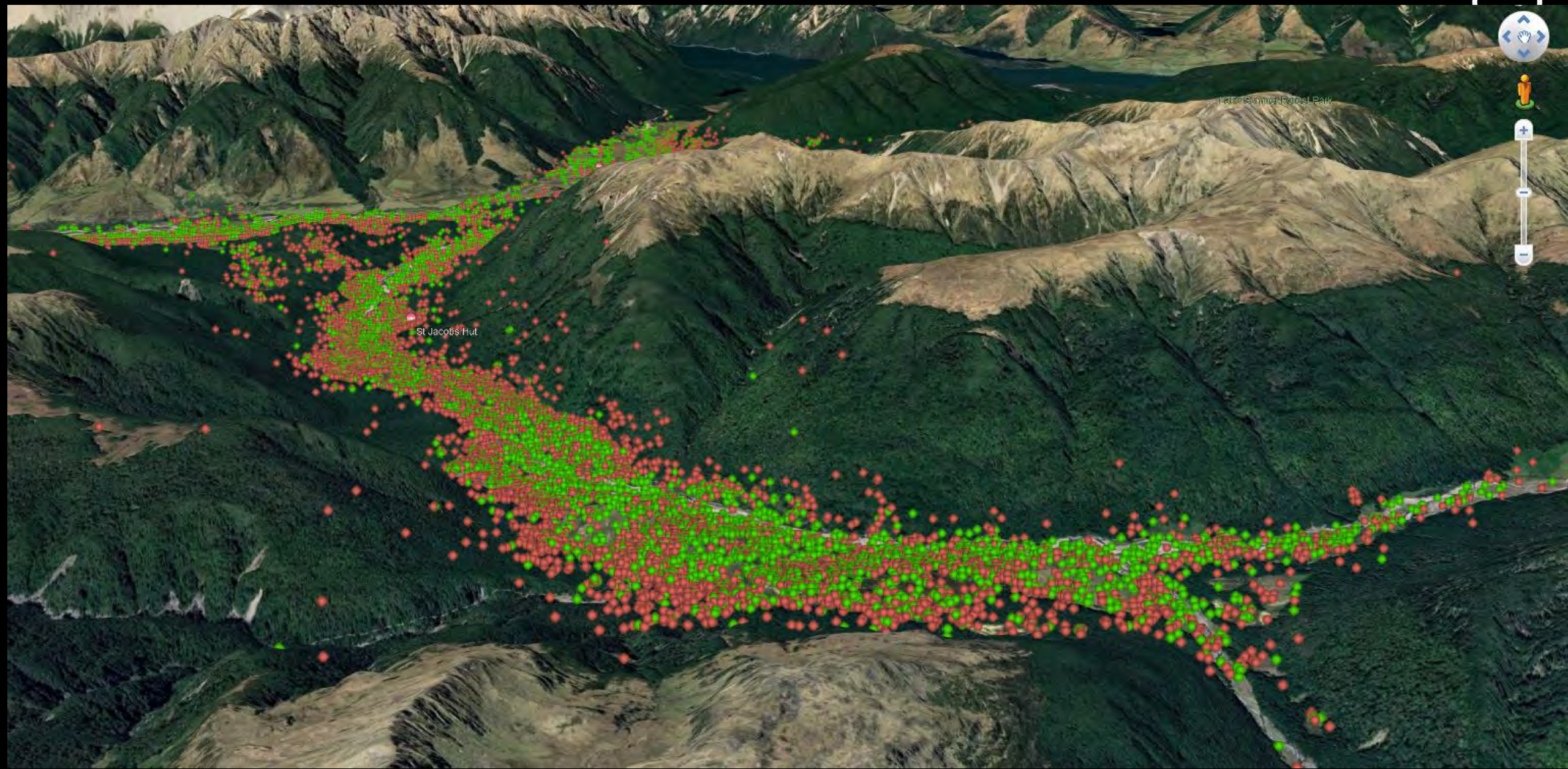




2 km







St Jacobs Hut

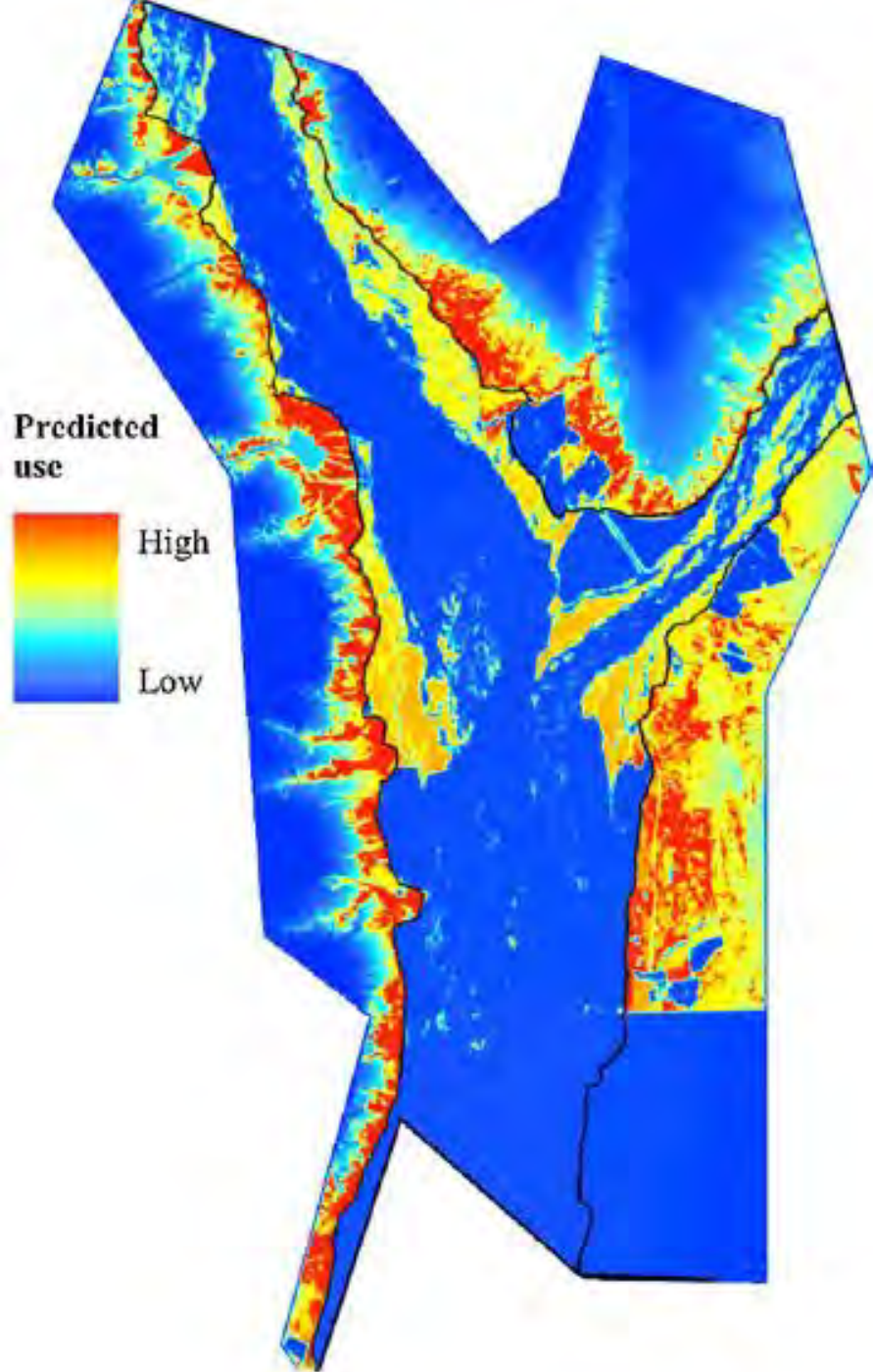
Latze Summer Forest Park





Data Analysis

- Basic ecological descriptions, movements by sex and age
- Habitat use, distance from edge, preferred habitat
- Home range size
- Summarise basic movement patterns (altitude/seasonal)
- Individuals different from the mean? (specialists)
- Trap placement, spacing and timing, how many nights? (quantify probability of discovery of trap/device over time)
- Are alpine cats going to interact with valley floor traps?
- Hunting behaviour, spatial risk of predation



Example of population level
resource selection map
(Recio et al 2014)

Acknowledgements

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- Hawdon Valley traps and layout supported by Department of Conservation
- Canterbury Aviation carried out the fixed-wing aerial radio tracking



