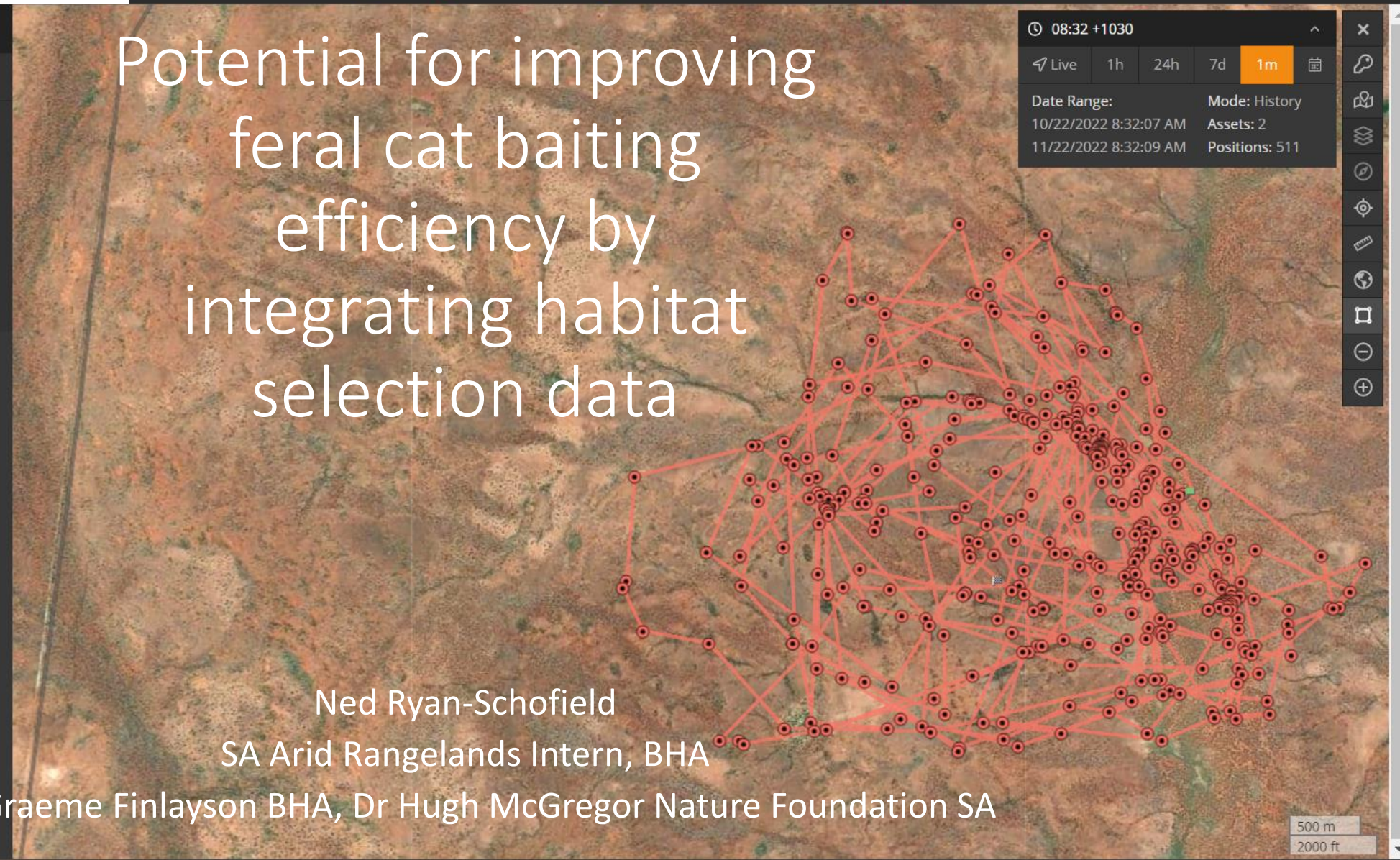




# Potential for improving feral cat baiting efficiency by integrating habitat selection data

Ned Ryan-Schofield  
SA Arid Rangelands Intern, BHA

Dr Graeme Finlayson BHA, Dr Hugh McGregor Nature Foundation SA



# Bon Bon Station



# Bon Bon Station



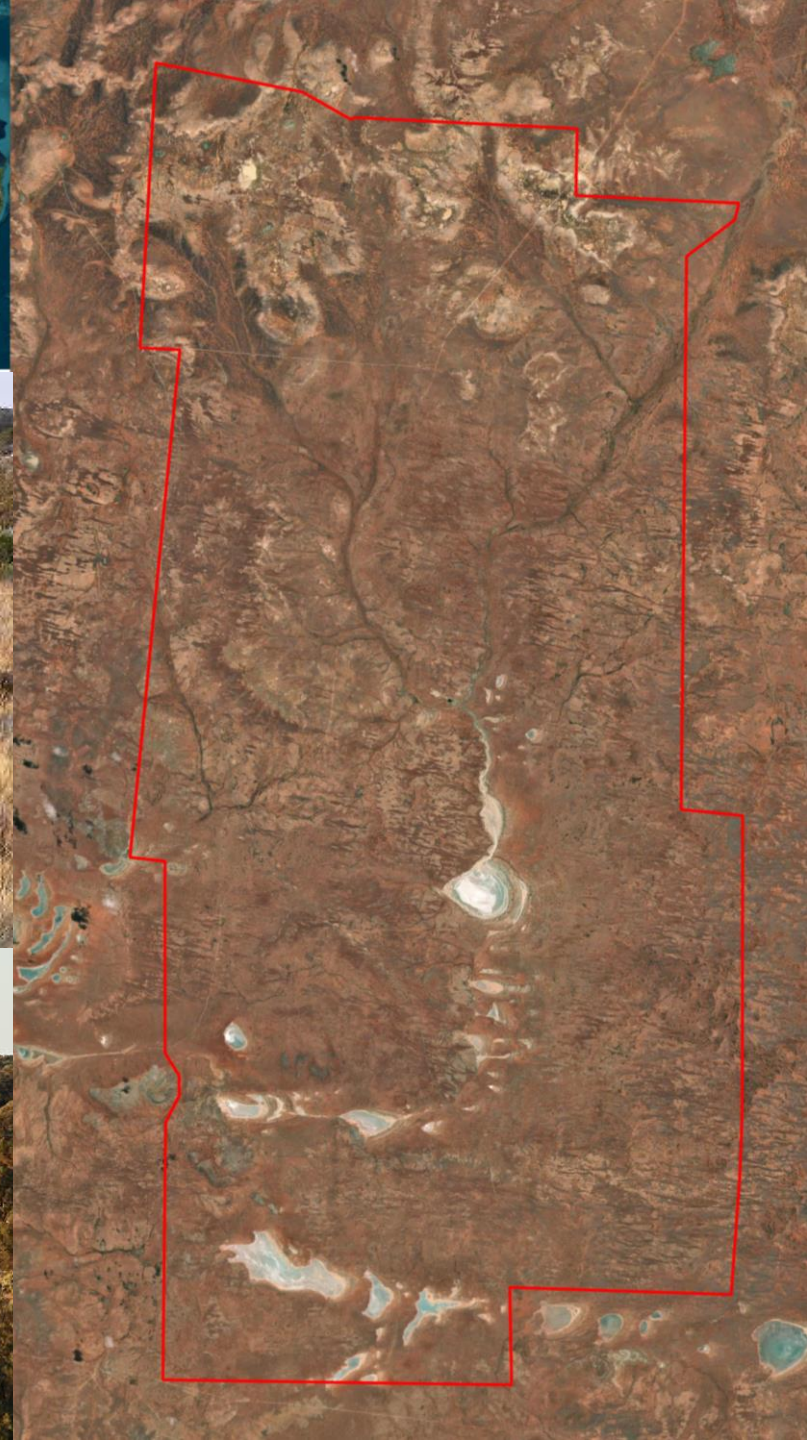
# Bon Bon Station



# Bon Bon Station

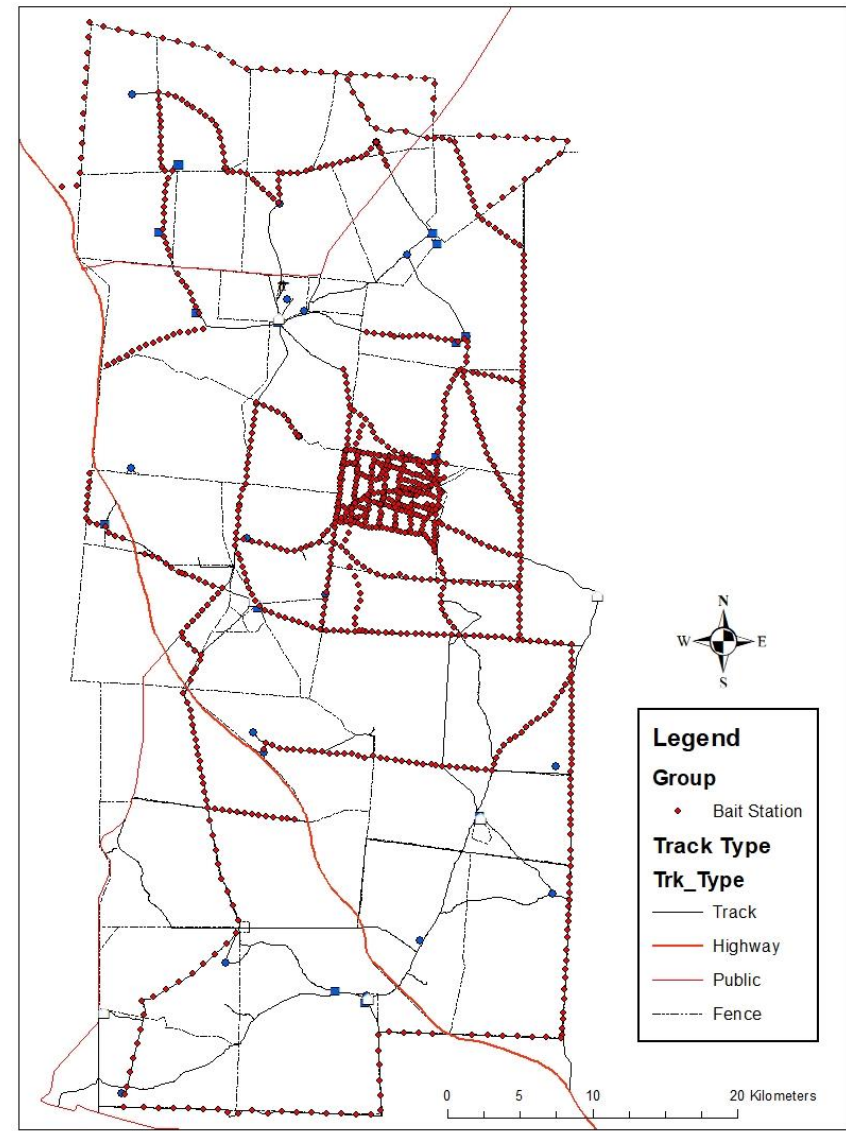


# Bon Bon Station

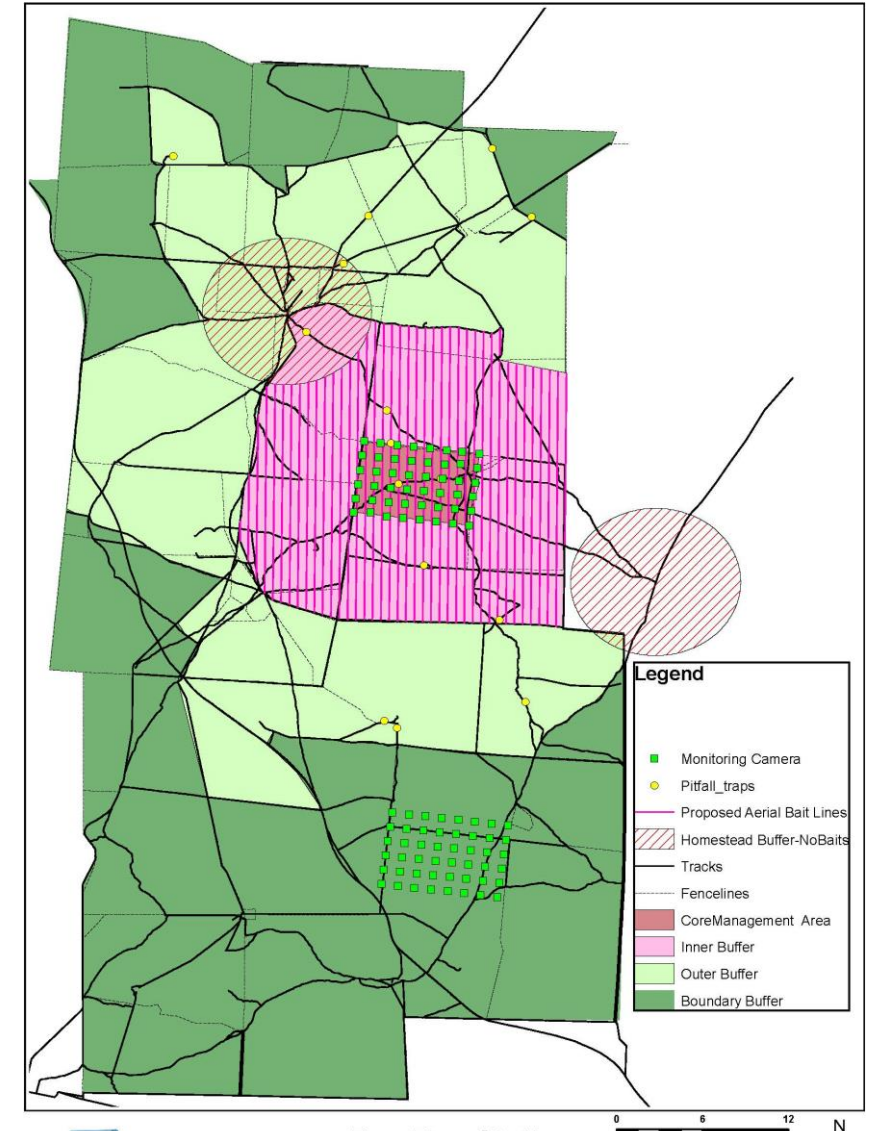


# Feral predator management

- Tracks fox baited quarterly in core management area (40km<sup>2</sup>)
- Density ~ 4/km<sup>2</sup>
- Camera grids to compare core and control



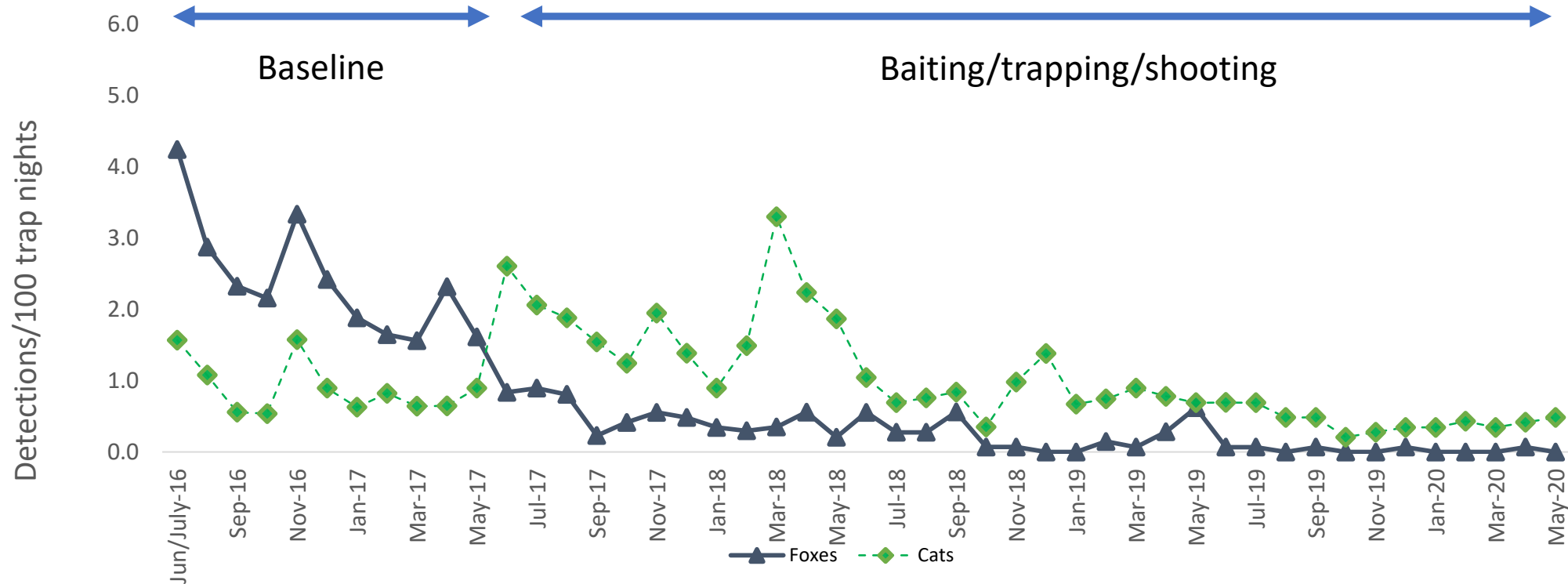
BUSH HERITAGE AUSTRALIA *Our heart & soul* **Bon Bon Predator Management**



BUSH HERITAGE AUSTRALIA *Our heart & soul* **Bon Bon Station**  
Created by Paul Young  
 Date: 20/05/2016  
 Path: C:\Users\dirt.taylor\OneDrive - Bush Heritage Australia\ - Bon Bon\Spatial Data\Admin\Map Templates\A4 Portrait 1:Scale 1:279.827 @ A4  
 Coordinate System: GCS\_GDA\_1994  
 Scale: 1:279.827 @ A4

# Feral predator management

- Knocked down foxes successfully
- Need to manage cats
- Eradicator trialled on tracks – low uptake, suspected cats weren't using some habitats
- Aerial baiting proposed but not implemented due to cost





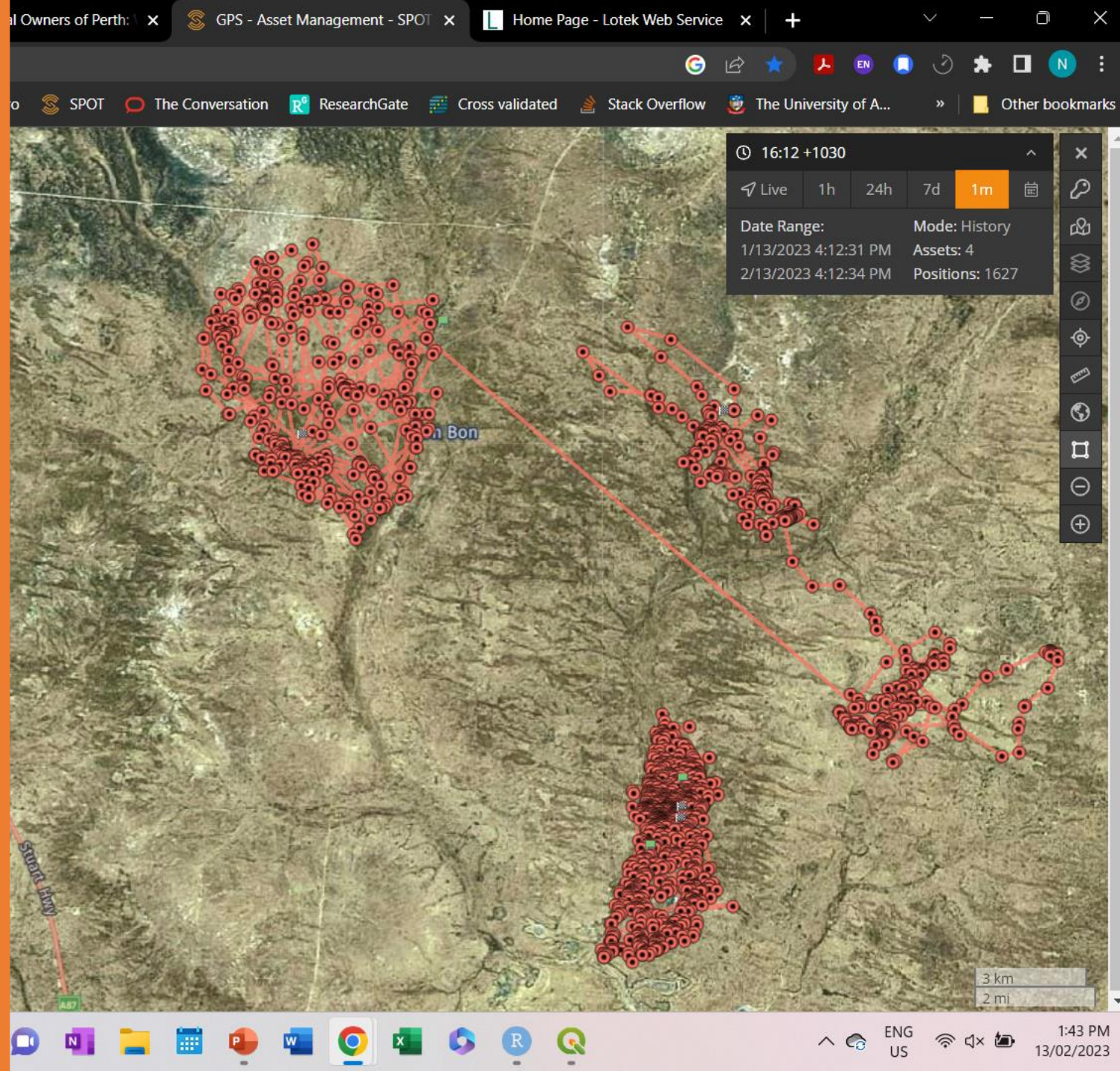
# Knowledge gap: habitat selection by feral cats at Bon Bon

- So we put some collars on
- Used SPOT trace commercial asset trackers
- One-way satellite transmission through the GlobalStar LEO satellite constellation
- Units weigh 90g, take 4 lithium aaa batteries



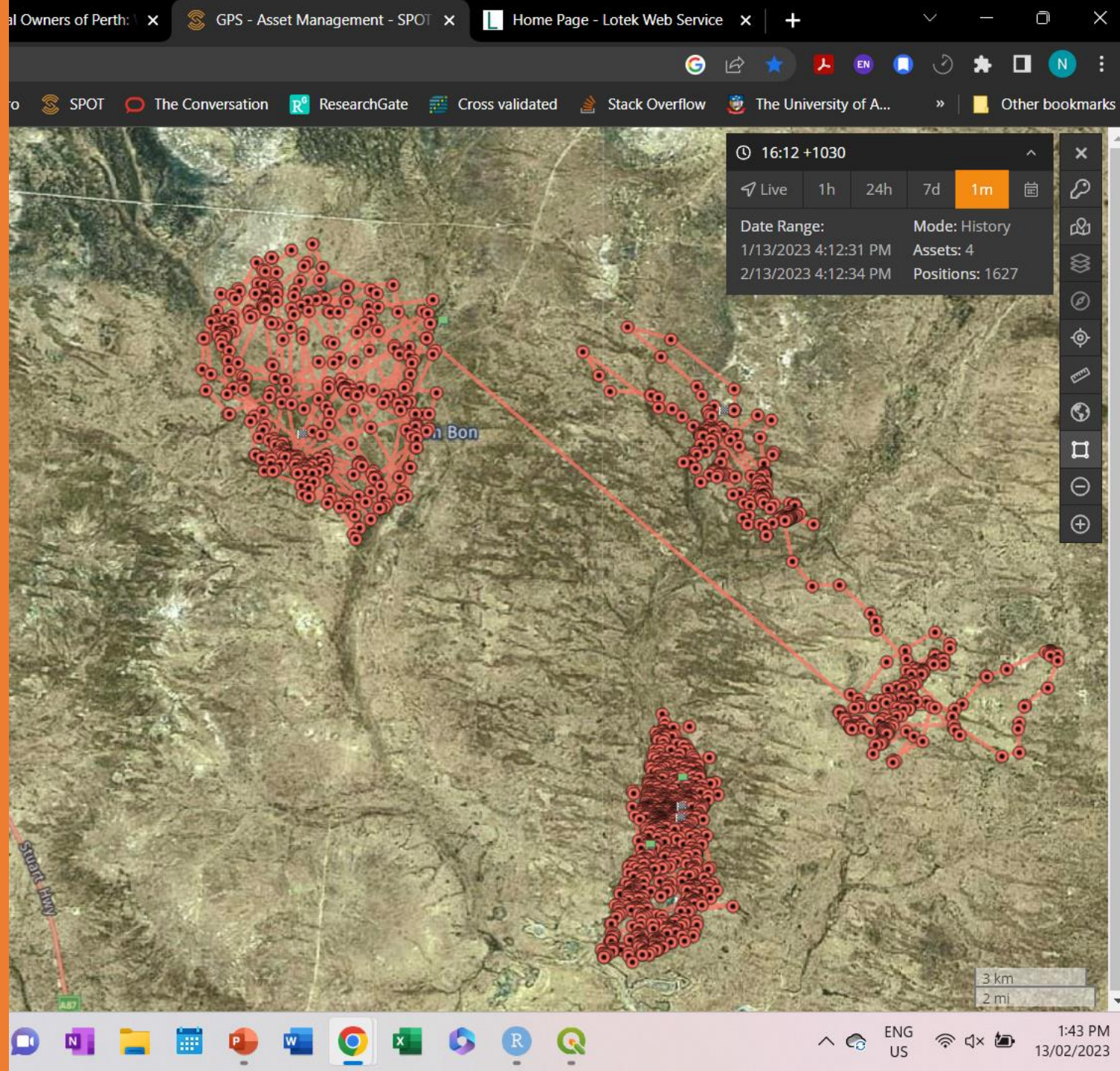
# Pros

- Data return via satellite
- Cheap. ~\$250 - ~\$450 (with VHF), vs > \$2500 for commercial wildlife option
- Low subscription charges, ~\$25/month/device
- Real-time tracking
- Can be reused easily
- Easy to program

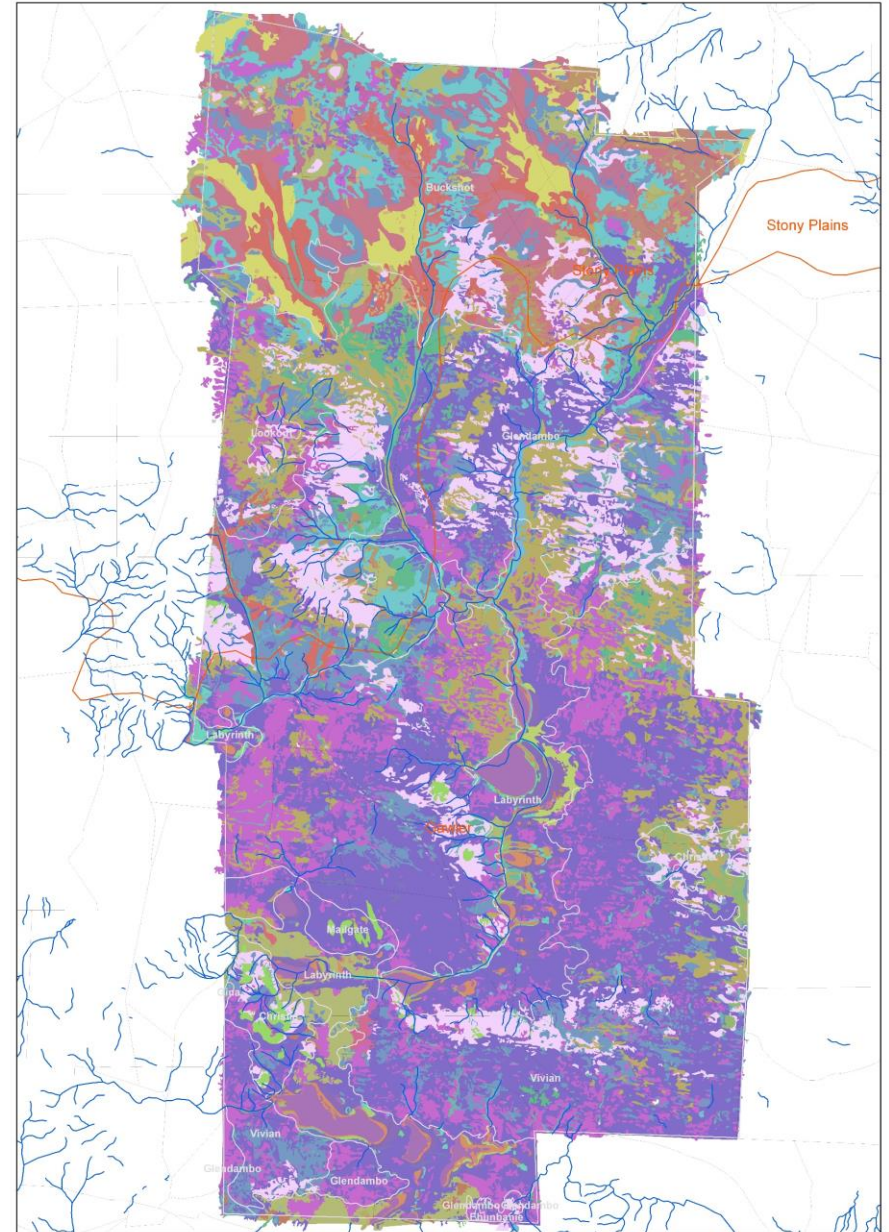
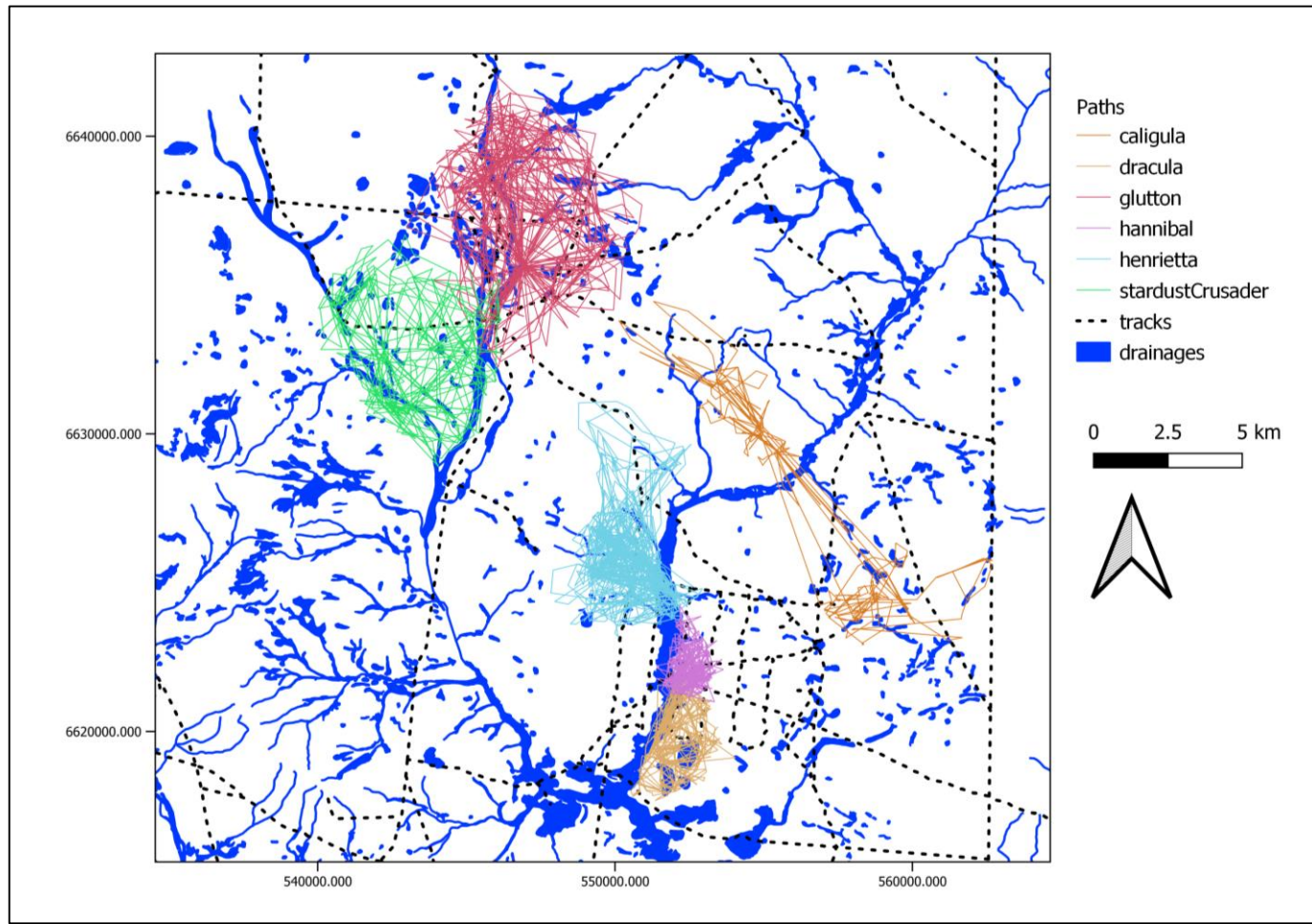


# Cons

- Bulky
- Limited scheduling options
- Fix success in dense veg unknown
- Not global coverage

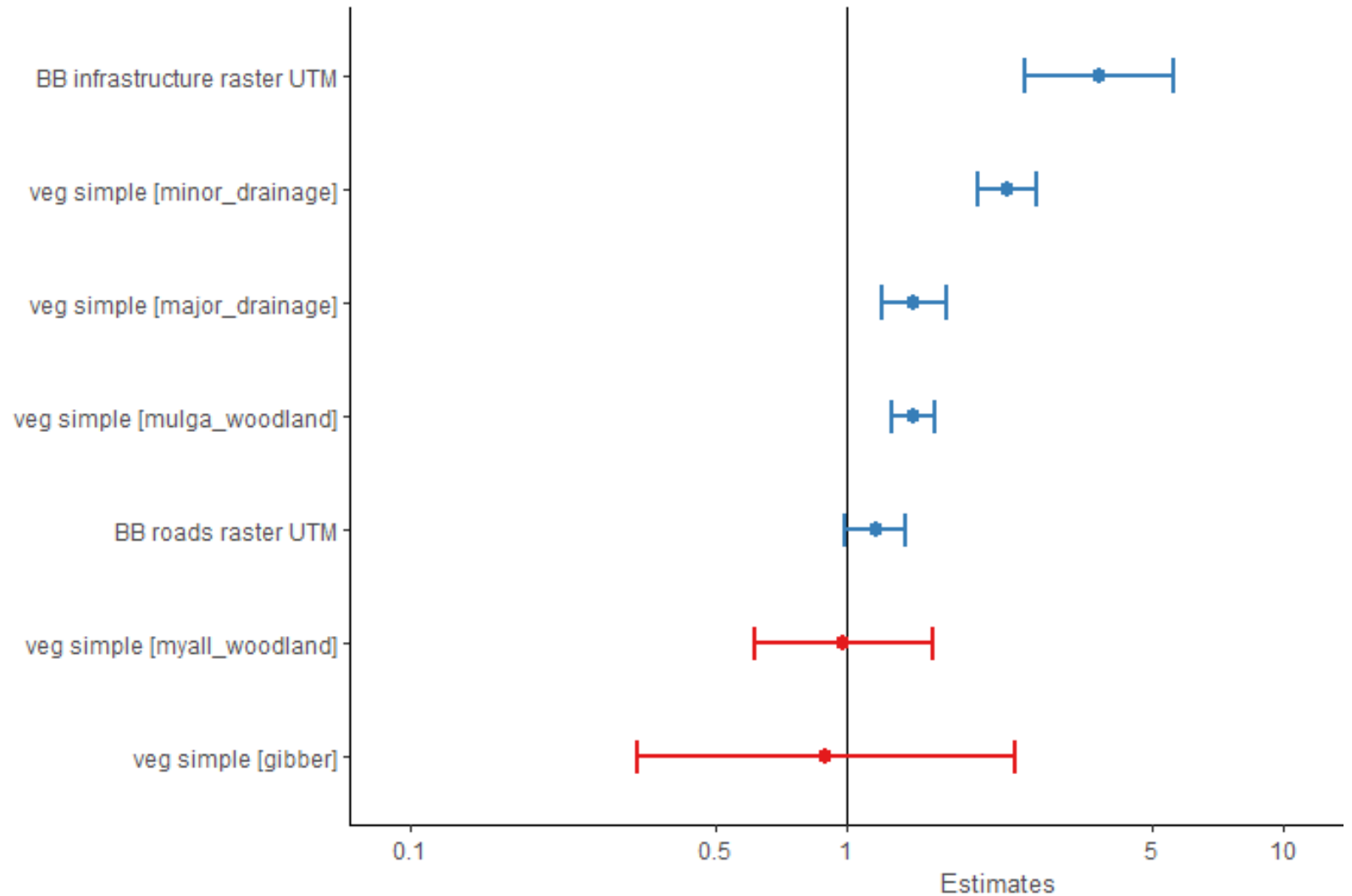


# Collect habitat variables

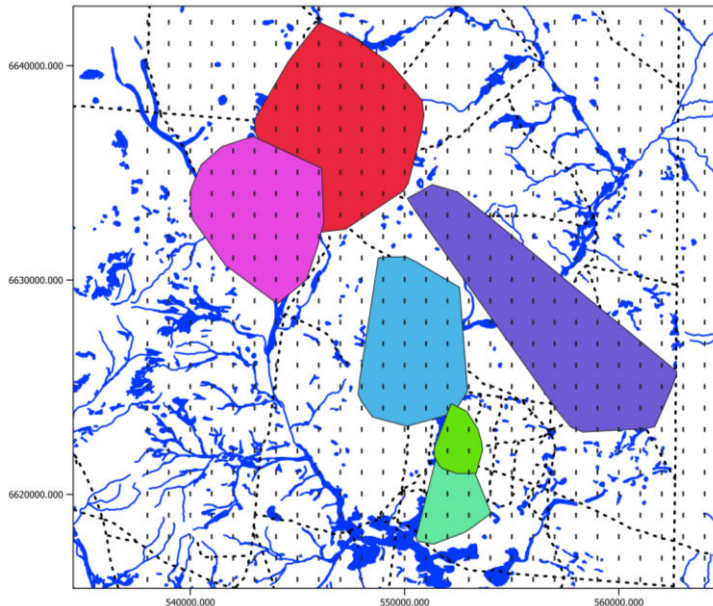
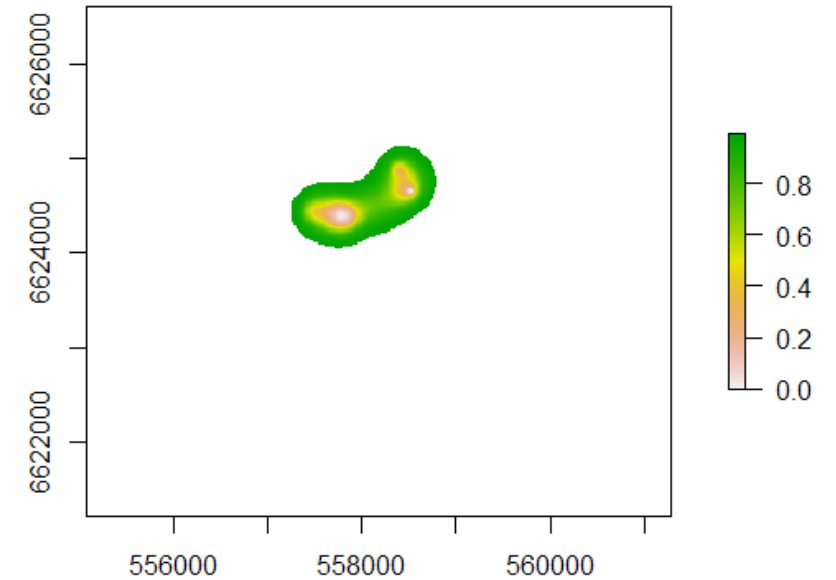
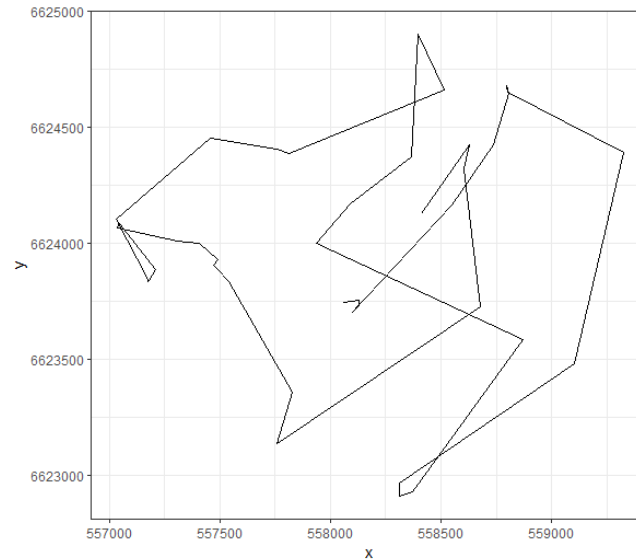
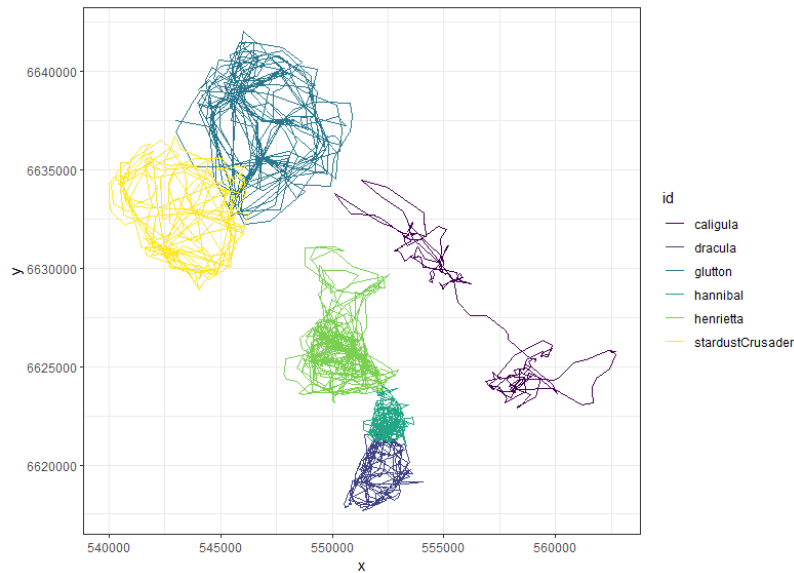


# Step selection results

- Strong selection for infrastructure (dumps, old wells), and drainage lines.
- How can this information inform management?

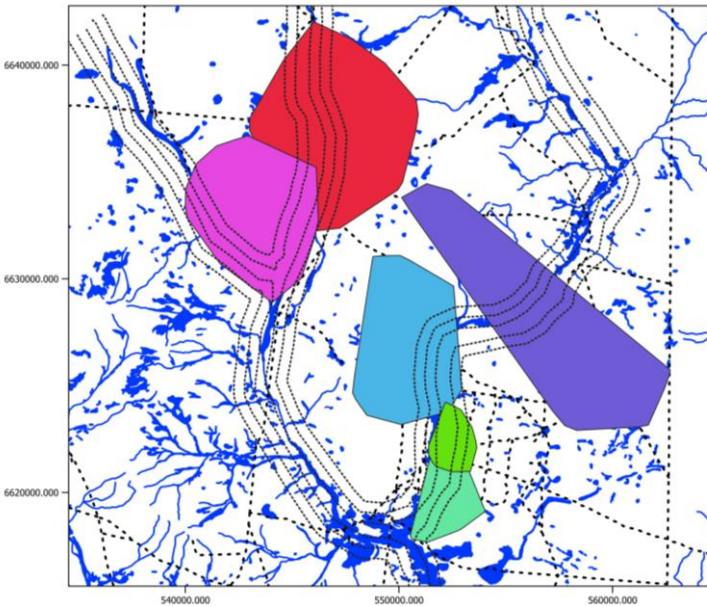
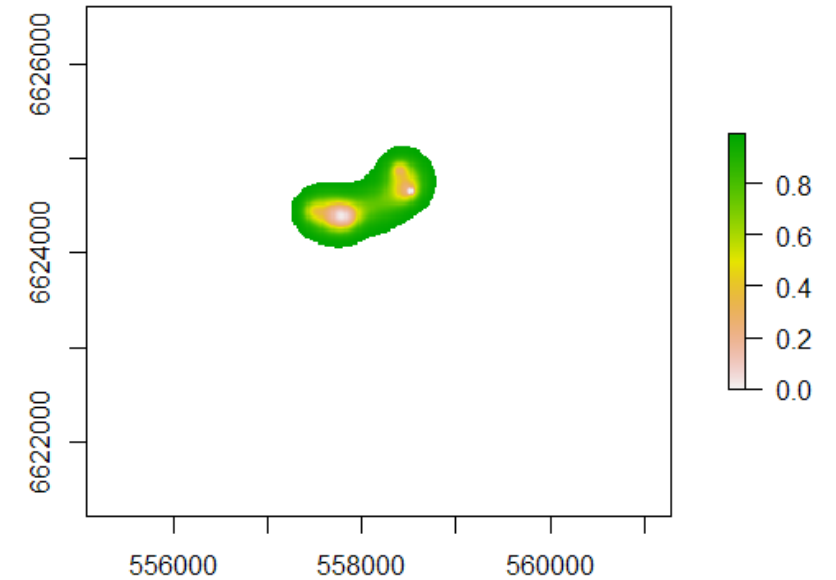
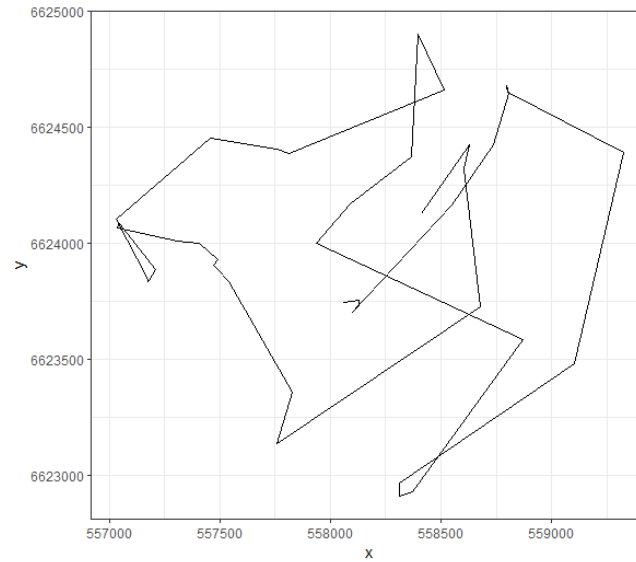
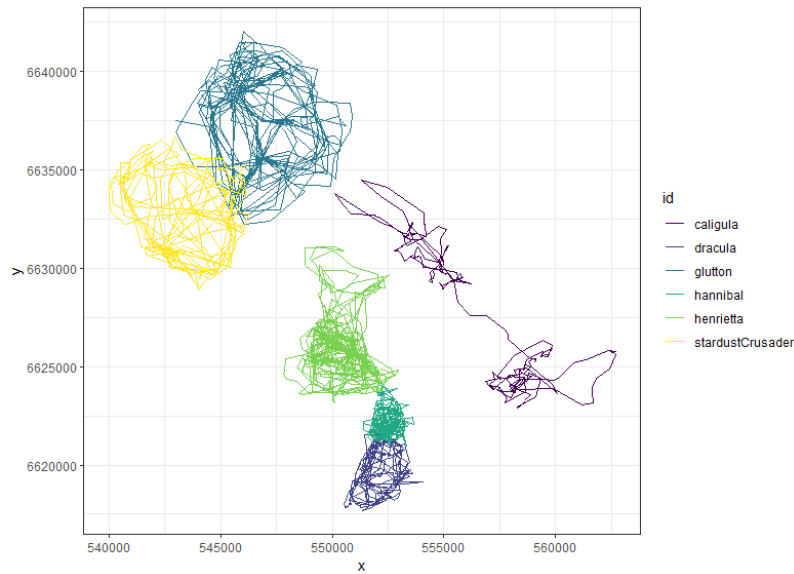


# Simulate efficacy of baiting scenarios



- Split data into 3-day tracks -> create utilisation distribution using dBBMM's -> seed baits over each raster
- Extract values for each raster from utilisation distribution
- $0.01 > UD$  value = 'bait encounter'
- Get values within max convex hull of cats
- Binomial glm to test effectiveness of different strategies at different bait densities

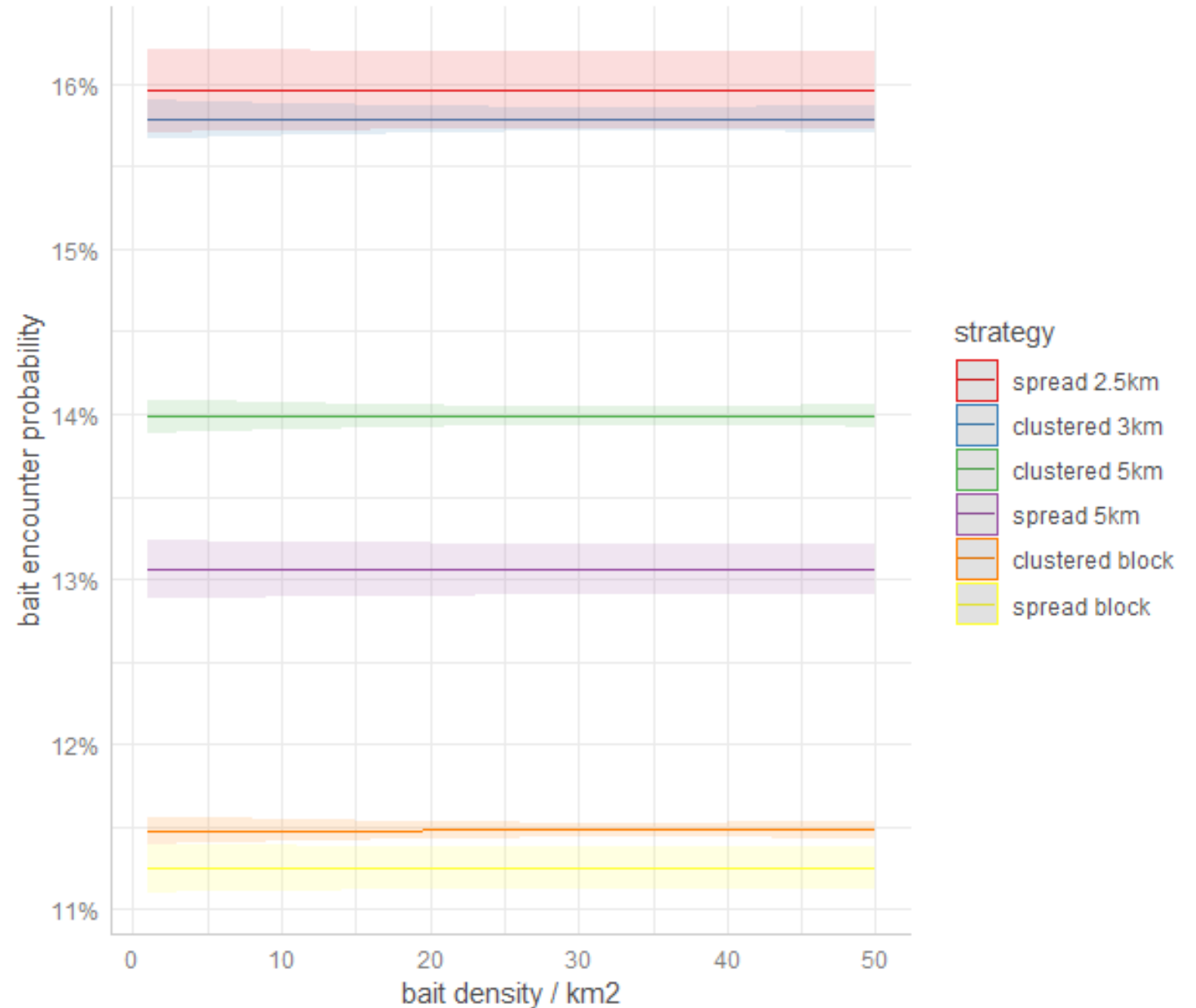
# Simulate efficacy of baiting scenarios



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## Results - efficacy

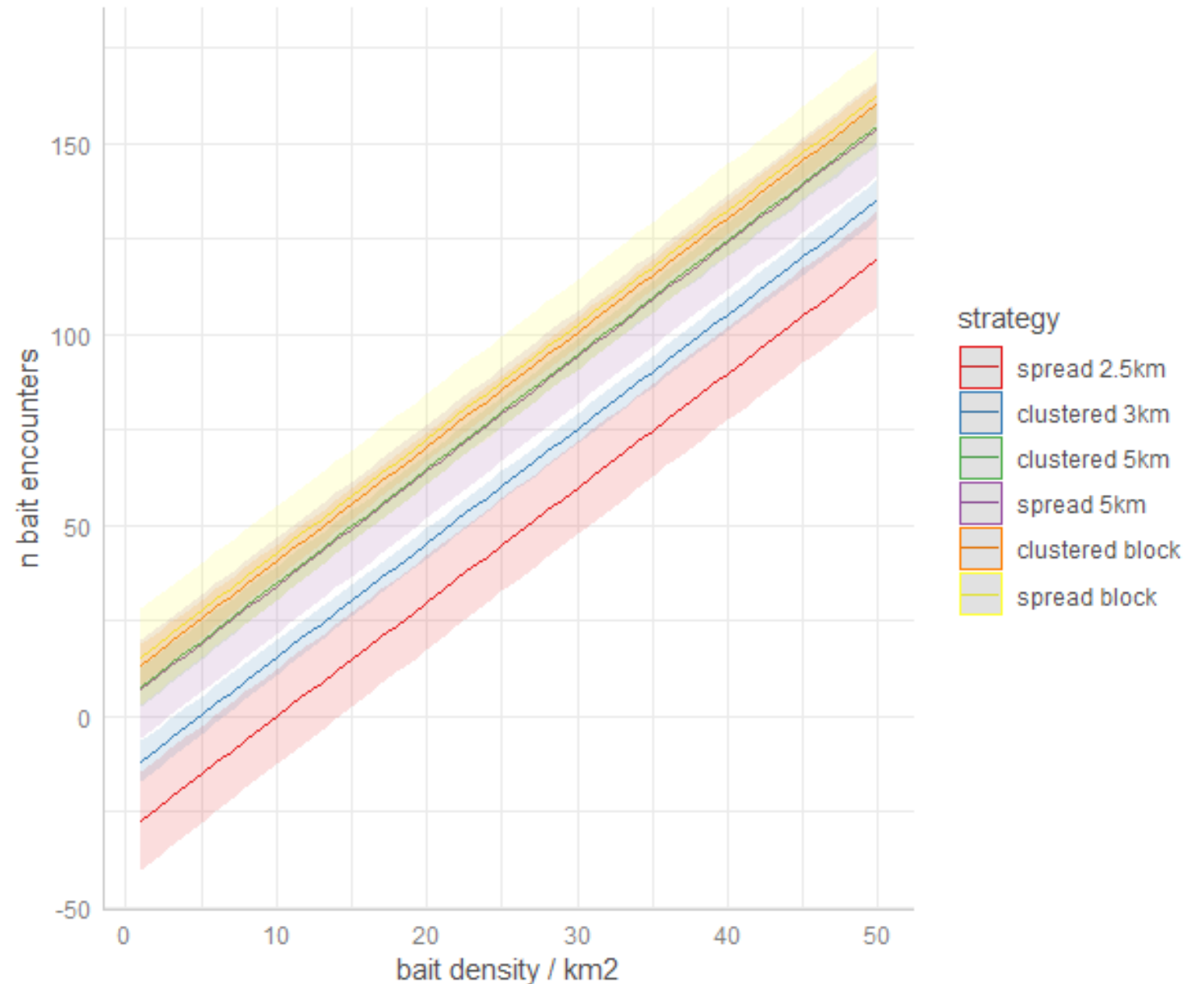
- Block baiting performed worse for encounter probability per bait
- Small buffers around creeklines best
- Clustered baiting favoured slightly over spread
- No change with increased bait density





## Results - effectiveness

- Small buffers resulted in less total encounters relative to other strategies
- Large buffers not different for total encounters from block baiting
- No advantage to clustered or spread



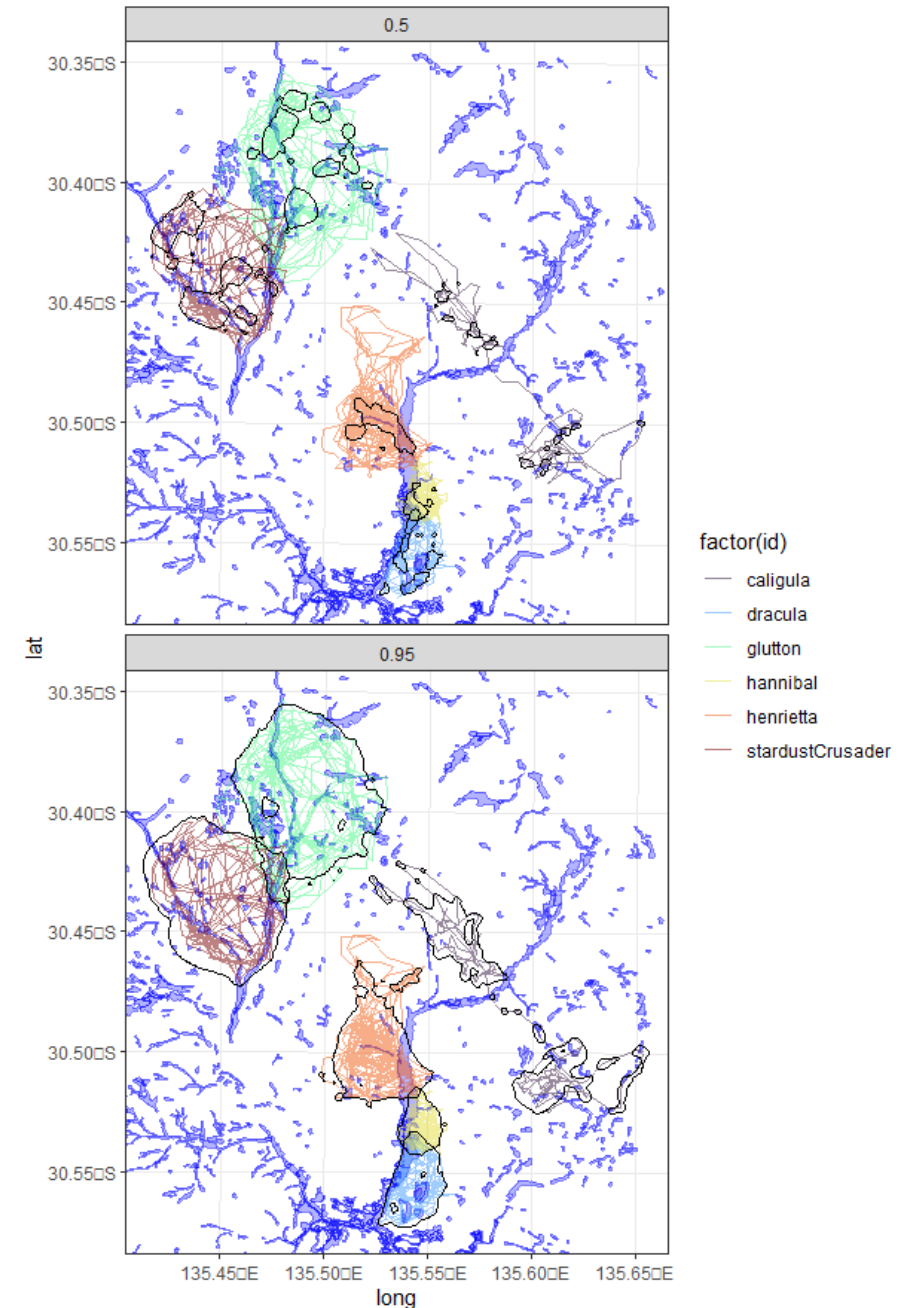
## Take-aways

- Cats utilise drainages more at Bon Bon
- Targeted baiting strategies more efficient with limited loss of encounters
- Greater baited area extent possible for same price

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## Caveats

- Only a few cats, limited trapping effort in chenopod shrublands and buckshot plains
- Have only collected data from this summer
- Habitat proxy for prey – successful control of rabbits on buckshot plains



# Acknowledgements

- This work was conducted on the lands of the Antakirinja Matu-Yunkunytjatjara people. We recognise and respect the enduring relationship they have with their lands and waters, and we pay our respects to Elders past, present, and emerging.
- Thanks to Graeme Finlayson, Hugh McGregor, Wayne & Karen Lawrence, Janet Walton, Tony Cathart, Tessa Manning, Darcy Whittaker, Jack Bilby, Emma Pollard and Courtney Adams for field and logistical assistance.





Thanks for listening!