



Using choppers to find hoppers: surveys for the Northern Hopping Mouse on Groote Eylandt



Burrowing behaviour



- Covers burrow entrance, creating a 'spoil heap'
- Uses 'pop' holes to get in and out – vertical shafts from main tunnel



Northern Hopping Mouse *Notomys aquilo*



- Last confirmed mainland record 1970s
- May now only occur on Groote Eylandt
- Listed as Vulnerable (EPBC & TPW Acts)
- No. 2 on list of 20 mammals most at risk of extinction in next 20yrs (NESP Threatened Species Recovery Hub)





Previous recent surveys



- Anecdotally described as once being common on Groote Eylandt, but few confirmed records from recent surveys, eg:
 - Cumberland Ecology 2018
 - Barden, 2010-18
 - Gillespie & Heiniger 2016
 - Diете 2012-13 (PhD research)
 - Rankmore 2011
 - EWL Sciences 2008 & 2009





Our surveys

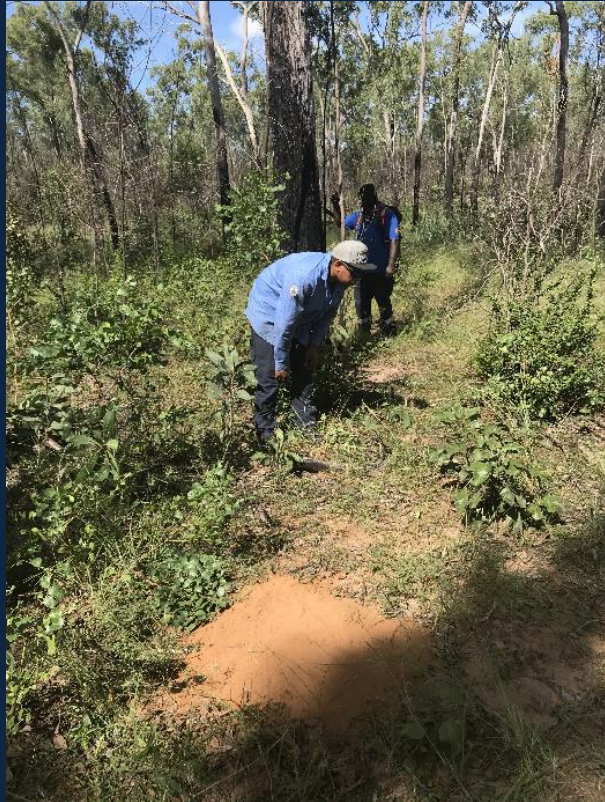


- Commenced July 2018
 - Survey method:
 - walked transects
 - searched for spoils with pop holes
 - set camera traps on a selection
 - took spoil & pop hole measurements
 - initial focus: vicinity of recent confirmed records





Our surveys



Provided a good training opportunity for the rangers



Our surveys



Good results:

- located over 200 spoils with pop holes as well as burrows under construction
- confirmed NHM presence at 24 locations





Our surveys



- All records in open woodland on sandy soil near the base of rocky sandstone outcrops
- Decided to undertake targeted surveys over wider area in this habitat, to improve understanding of NHM occurrence
- Same methods as initial surveys, but transects much longer



Aerial surveys & groundtruthing



- Additional funding from DoEE through Territory NRM, Dec 2018
- Enabled use of a helicopter for:
 - aerial surveys to detect potential spoils over wider area
 - access to remote areas to groundtruth potential spoils
- Also enabled veg surveys





Aerial surveys



- Novel survey method for this species
- Trialled over woodland area with known spoils – good results
- Targeted woodland near base of sandstone on Bundah land system, plus some coastal areas





Aerial surveys

- Covered total of 1,490km in Dec 2018 & Feb 2019
- Over 600 potential spoils recorded





Groundtruthing

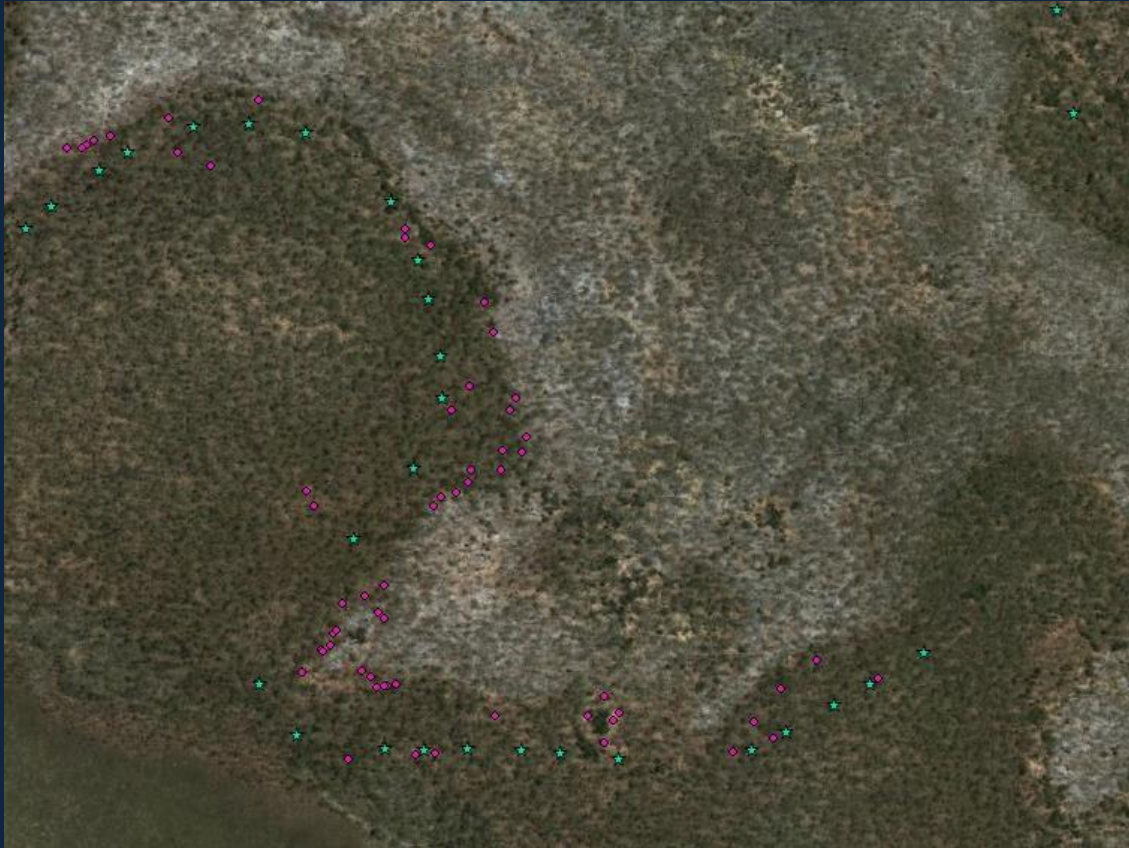


- Groundtruthing of potential spoils Jan-June 2019
- Helicopter access to remote areas, Feb 2019
 - Walked long transects, searched vicinity of potential spoils, set camera traps, took measurements





Groundtruthing



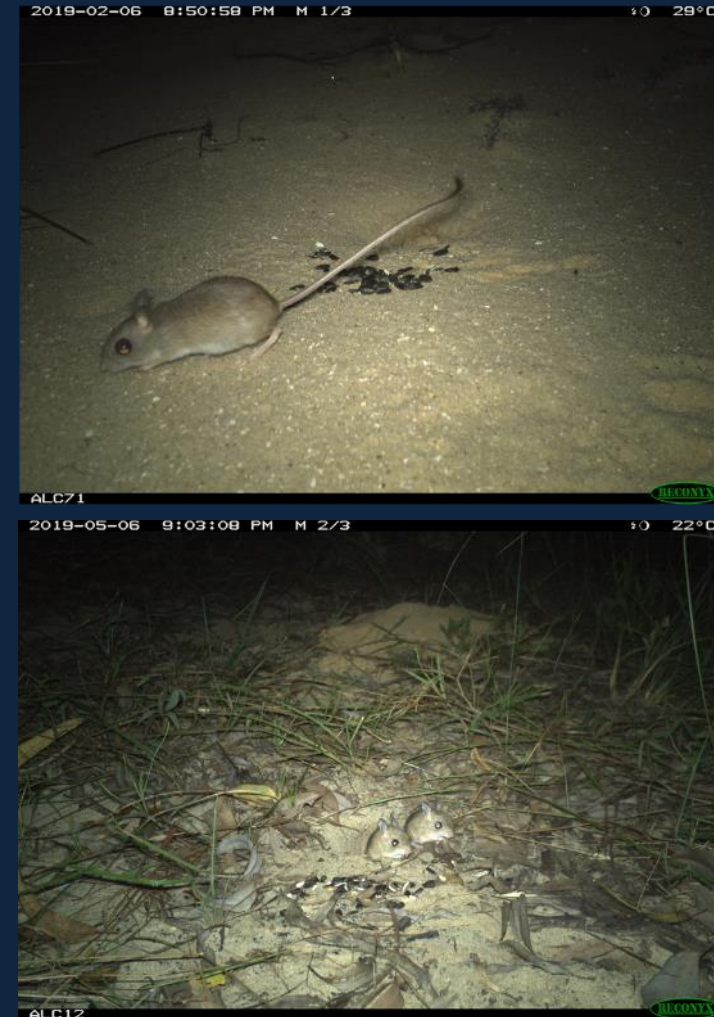
- Location of potential spoils matched up well with actual spoils
- Correctly identified spoils from the air in both woodland and coastal habitats
- Potential confusion with:
 - delicate mouse spoils
 - goanna & bandicoot diggings
 - small termite mounds



Combined survey results



- Since July 2018:
 - 656 spoils recorded
 - NHM recorded at 87 camera trap locations (out of 116 cameras)
- Most records from woodland on Bundah land system
- Records from 6 coastal locations on different land systems
- Burrowing recorded all months of the year





Confirmed records



Other surveys, last 10 yrs



Our surveys (2018-19)



Vegetation surveys

- Undertaken Apr-May 2019
- 17 sites at which NHM confirmed





Vegetation survey results

- Data used by NT Herbarium
 - map of veg communities combined with land systems on which NHM had been confirmed
- Useful in identifying target areas for future surveys
 - More detailed habitat modelling planned





Conclusion



- Survey methods effective
- Results will be basis for further surveys, research & monitoring
- Results also demonstrate value of indigenous ranger groups in addressing threatened species knowledge gaps



Acknowledgements

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