

2 ha Track Plot and Rangeland Assessment Method Surveys within the Coongie Ramsar Site, South Australia



**Report to SA Arid Lands Landscape Board
Written by Cat Lynch (Arid Ecological Services)
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Limitations Statement

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Cover image: Site photo taken at TPCH24 on Clifton Hills station.

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Introduction

The Coongie Ramsar Wetlands site is situated in the north-east of South Australia, and is listed as a 'wetland of international importance' through an international agreement. This agreement protects the wetlands and associated natural values of an area that encompasses most of the wetlands associated with the Cooper Creek. The area is listed for its outstanding ecological processes, status as an unregulated natural water system, and its migratory birds, waterfowl and fish diversity. The area supports dryland dunefield and gibber plain habitats and is also known to support threatened species listed under federal and state environmental legislation.

Two threatened species that exist within the Coongie Ramsar site are the Dusky Hopping-mouse (*Notomys fuscus*) and Crest-tailed Mulgara (Ampurta) (*Dasycercus cristicauda*). Dusky hopping-mice are listed as Vulnerable at both national (EPBC Act) and state (NPW Act) levels. Ampurta were listed as threatened under the EPBC and NPW Acts until February 2019 when they were removed from the list of threatened species given recent range expansion across parts of its historic range.

The primary survey technique for determining the presence or absence of Dusky Hopping-mouse and Ampurta across the Coongie Ramsar site has been the 2 ha track plot method, as described in Moseby *et al.* (2012). The SA Arid Lands Landscape Board (SAAL) has surveyed several track plot sites across the site between 2018 and 2021. The relative impacts of native and introduced herbivores at each site was also measured using the Rangelands Assessment Method (RAM) (Native Vegetation Council 2020). Arid Ecological Services was contracted by SAAL to re-survey a subset of these sites in 2022.

Methods

A total of 69 sites were surveyed on Clifton Hills, Gidgealpa, Mungerania and Mulka stations and Innamincka Regional Reserve between 20-26 September 2022 using the 2 ha track plot and RAM survey techniques at each site. A map of the sites surveyed is provided in Figure 1. A further five sites were not able to be accessed due to flooding. Sites were surveyed by Cat Lynch (Arid Ecological Services), John Read and Katherine Moseby (Ecological Horizons Pty Ltd). Data was collected using Fulcrum, using the 'TrackPlot' and 'RAM' app templates supplied by SAAL.

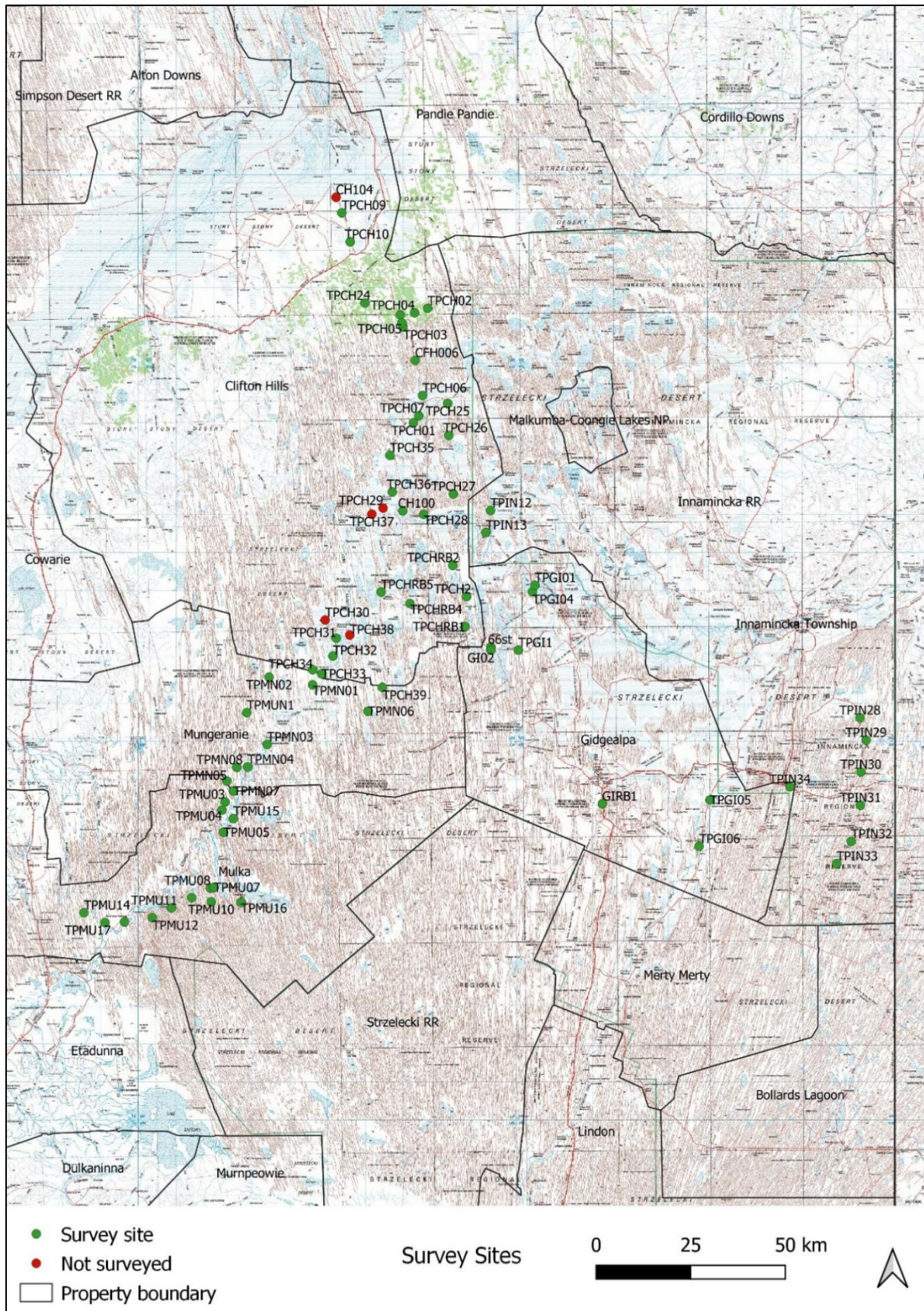


Figure 1. Locations of sites surveyed during the September 2022 survey.

Results

Survey conditions

The moon was waning to new during the survey period. Temperatures ranged from maximums of 25-32°C and minimums of 11-19°C (Moomba Airport weather station 017123) (Bureau of Meteorology 2022). Conditions were generally dry during the survey, aside from scattered thunderstorms in the north part of Clifton Hills on 21 September 2022. Very windy conditions were experienced on 21 September 2022, particularly from late morning. There was only a light breeze experienced on all other days.

There was a high amount of ephemeral vegetation cover present during the survey, albeit drying off. Heavy trampling by cattle at several sites, as well as this relatively high ephemeral vegetation cover, made it difficult to detect tracks and other signs of small mammals. Several flocks of budgerigars (*Melopsittacus undulatus*), cockatiels (*Nymphicus hollandicus*) and Bluebonnets (*Northiella haematogaster*) were observed throughout the survey area, suggesting good seasonal conditions prior to the survey.

The Cooper Creek was flowing, with water reaching as far as south of Narrawalpina WH, near the Clifton Hills/Mungeranie boundary. Waukatanna WH on Mungeranie station also contained some water at the time of the survey.

2 ha Track Plots

Fresh (<1 week old) Hopping-mouse sign (tracks, burrows and/or popholes) (Figure 3) was detected at 16 of the 69 survey sites; i.e. 23.2 % of all plots surveyed (Figure 2). Hopping-mouse sign was abundant (sign recorded in more than half of the plot) at 44 % of sites surveyed, and less abundant at the remaining sites. Hopping-mice appeared to be present in high densities at site GI02, with several runways present.

Fresh Ampurta sign (tracks and/or burrows) (Figure 3) was detected at 6 of the 69 survey sites, i.e. 8.7 % of all plots surveyed (Figure 6). Older sign (i.e. burrows that were not recently used) was observed at two other sites. Ampurta sign was not abundant, with sign recorded in only one or two quarters of those plots at which sign was detected. However, windy conditions on 20 September 2022, when sites on Mulka station were surveyed, would likely have reduced the ability to detect ampurta tracks, if present.

The majority of Ampurta sign was detected in the south-west part of the survey area on Mulka station, with tracks also detected at one site on Gidgealpa. Hopping-mouse sign was more widely distributed across the survey area.

Fresh sign of cats was recorded at 23.2 % of sites surveyed. Of the 16 sites where cats were detected, sign of hopping-mice were only recorded at three of those. Ampurta were not detected at any sites at which fresh cat sign was recorded. Fresh sign of foxes was recorded at 18.9 % of sites. Of the 13 sites where fresh fox sign were detected, sign of hopping-mice was only recorded at four of those. Ampurta were not detected at any sites at which fresh fox sign was recorded. Fresh sign of dingoes was recorded at 23.2 % of sites surveyed. Of the 16 sites where fresh dingo sign was detected, sign of hopping-mice was detected at six of those, and ampurta at one site.

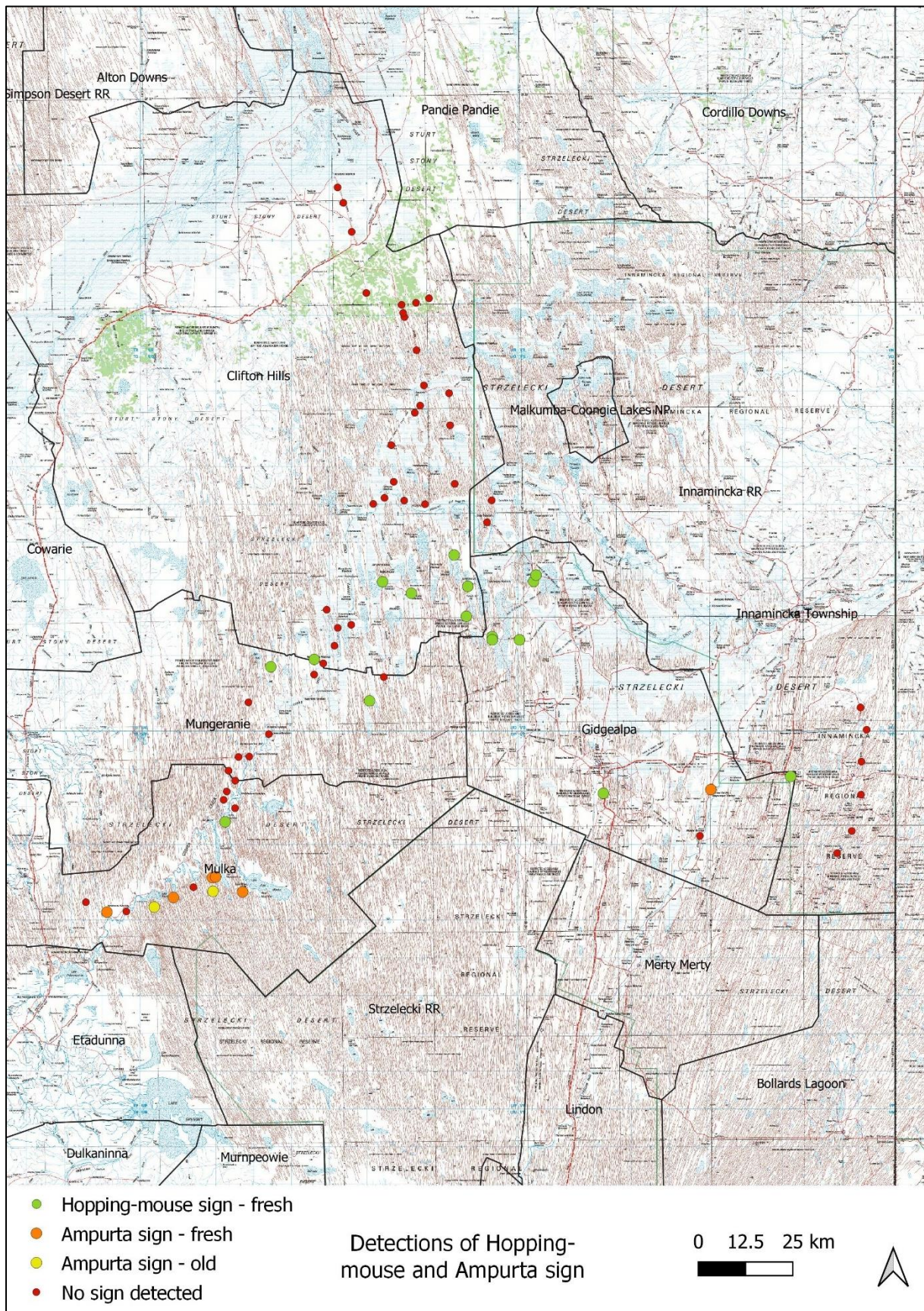


Figure 2. Sites at which Hopping-mouse and Ampurta sign was detected.



Figure 3. Hopping-mouse tracks (L) and Ampurta burrow and scats (R).

Fresh sign of Long-haired Rats (*Rattus villosissimus*) was detected at the majority of sites in the north of the survey area, north-west of Karathunkna Dam on Clifton Hills station, with tracks, burrows and/or scats recorded in relatively high abundance at those sites (Figure 4). Fresh tracks of a large rodent were recorded at four sites in the middle of the survey area (Figure 5), which are considered most likely to be from the Desert Mouse (*Pseudomys desertor*).



Figure 4. Long-haired rat tracks (L) and a burrow and scats (R) recorded during the survey.

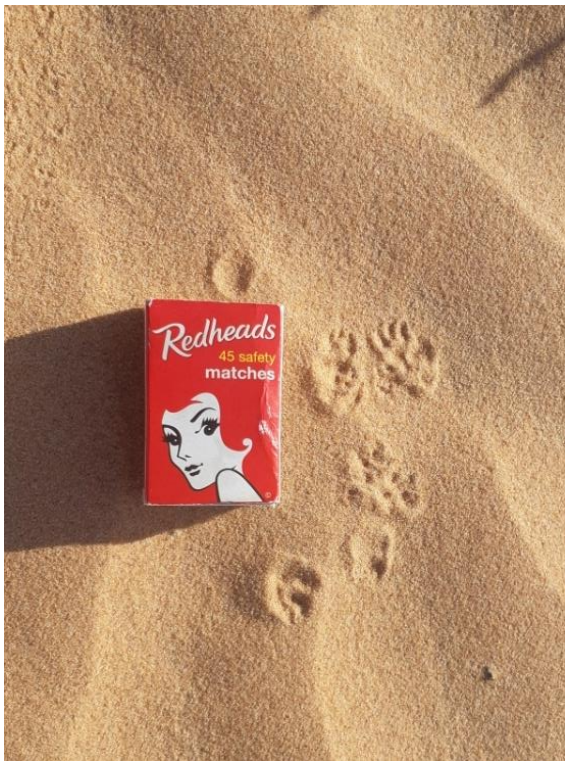


Figure 5. Tracks of a large rodent recorded during the survey.

RAM

The most common perennial plant species recorded were Sandhill Wattle (*Acacia ligulata*), Ruby Saltbush (*Enchylaena tomentosa*), Sandhill Cane-grass (*Zygochloa paradoxa*), Downy Loose-flowered Rattle-pod (*Crotalaria eremaea ssp. eremaea*) and Sand Sida (*Sida ammophila*). Most perennial plant species were generally in relatively good condition, being either in an intact or modified state.

Vegetation on Mulka station was in good condition, with no evidence of recent cattle grazing or large feral herbivores. Sites on Clifton Hills and Gidgealpa stations showed evidence of heavy and widespread stocking rates, while also having lower perennial species diversity with an average of 5.9 species per site on Clifton Hills and Gidgealpa compared with an average of 8.3 species per site on Mulka, Mungerania and Innamincka RR.

Other observations

A Grey Falcon (*Falco hypoleucos*) (vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* and rare under the *SA National Parks and Wildlife Act 1972*) was observed flying overhead at TPCH02 on Clifton Hills station. Small flocks (2-20 birds) of Flock Bronzewings (*Phaps histrionica*) (rare under the *NPW Act*) were observed throughout the survey area, mainly on Mulka, Mungeranie and Clifton Hills stations. A Flock Bronzewing nest containing two eggs was recorded at TPMU12 (Figure 6). Eyrean Grasswrens (*Amytornis goyderi*) were also recorded at several sites, with fledglings also observed at one site.

Camel sign was regularly observed throughout the survey area, with a mob of 10 camels seen near Karathunkna Dam on Clifton Hills. Horses were also relatively abundant, particularly on Mungeranie and Gidgealpa stations and Innamincka RR.



Figure 6. Flock Bronzewing nest observed at TPMU12.

Buffel grass (*Cenchrus ciliaris*) (declared under the *Landscape South Australia Act 2019*) was observed along the Strezlecki Track south of Innamincka, and a heavy infestation was recorded in the drainage channel/old vehicle track adjacent to TPIN28 (Figure 7). Buffel grass was also recorded on the sand dune within that survey site.



Figure 7. Buffel grass recorded at site TPIN28.

References

Bureau of Meteorology (2022). Daily Weather Observations, Moomba, South Australia. Commonwealth of Australia 2021, Bureau of Meteorology. Online resource viewed 30/09/2022
< <http://www.bom.gov.au/climate/dwo/IDCJDW5038.latest.shtml> >.

Moseby, K., Nano, T., and Southgate, R. (2009). 'Tales in the Sand: a guide to identifying Australian arid zone fauna using spoor and other signs.' Ecological Horizons, South Australia.

Native Vegetation Council (2020). Rangelands Assessment Manual. July 2020. Native Vegetation Council, Adelaide, South Australia