

PORT OF AIRLIE MARINA DEVELOPMENT

**Appendix H Water Mouse Survey Specialists
Report**

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This survey was conducted by Mr. Eric Vanderduys for FRC Environmental on behalf and Sinclair Knight Merz. It describes a survey undertaken to identify the presence or likely presence of the Water mouse (*Xeromys myoides*), which was previously known as the False Water Rat. The Water mouse is listed as vulnerable under the Queensland *Nature Conservation (Wildlife) Regulation 1994* and Commonwealth *Environmental Protection and Biodiversity Conservation Regulation 2000*.

H.1 Survey Methodology

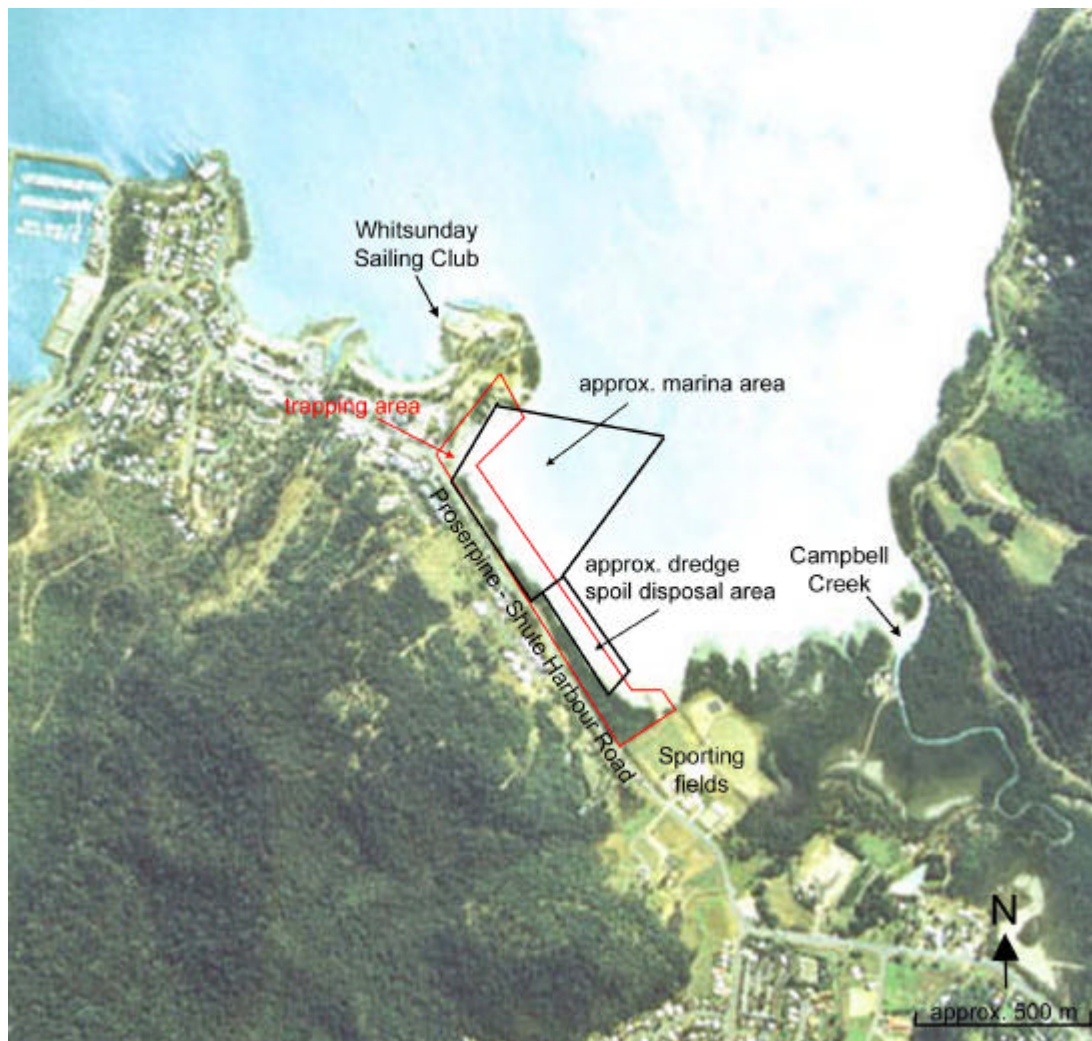
The survey comprised observations of habitat, searches for scats, tracks, feeding middens, nest mounds and other marks; and trapping within the intertidal zone from adjacent to the sporting fields in the south, to amongst the rocky foreshore to the south of the Whitsunday Sailing Club in the north (Figure 1).

Trapping was carried out using small Elliot traps under Scientific Purposes Permit number WISP00172502. Total trap effort was 400 trap nights (100 traps / night for 4 consecutive nights).

The first trapping night was Thursday 12 September. Neap tides were experienced over the period of trapping, with the time of high tide ranging from 03:15 (2.98 m) to 07:40 (2.51 m). Traps were baited with pilchards, which are regarded as effective bait for false water rats (van Dyck pers. comm. 2002). Traps were placed on the muddy mangrove substrate, in the prop roots of *Rhizophora stylosa*, in gaps in rocks (both natural and land-fill) and concrete, at the bases of shrubs and trees at the upper margin of the littoral zone and in hollows of the same. Traps were usually placed within approx. 20m of high water springs.

Traps were set from between approx. 16:00 and 21:30, following the falling tide, were tended during the night (particularly around the time of high tide) and closed ahead of the rising tide or (for those in the upper intertidal) shortly after first light.

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■ Figure 1. Area of false water rat survey

H.2 Results

No Water mice were trapped in this survey. No signs of distinctive nest mounds, middens or tracks that may have been attributed to the false water rat were found.

Total trap captures amounted to three water rats, *Hydromys chrysogaster* (one of these was probably a recapture). Water rats are common throughout the site, their distinctive tracks being visible on the mud in many areas. Traps in the vicinity of the bus shelter on the Proserpine – Shute Harbour Road were consistently raided by water rats without capture. This is consistent with the large size of water rats, which appears to enable them to simultaneously – and probably accidentally – hold the pressure plate and trap door down while stealing the bait. Traps were raided about 20 times over the four nights (~ 4% of total trapping effort).

H.3 Discussion

Water mice have been described as ‘apparently not trap-shy’ with a capture rate of 111/1480 traps (7.5%) averaged across known habitats on North Stradbroke Island,

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south-east Queensland (Van Dyck 1996). However, Tina Ball from the EPA (Mackay) has advised that Water mice can be difficult to capture in the Proserpine region as trapping sometimes fails to result in captures, even from sites where they are known to be present.

In the Proserpine region, false water rats do not make the large 'soggy termite nest[s]' that are characteristic of the species on the south Queensland coast (Van Dyck, 1994). Rather, they tend to build mud up around base of mangroves, and in hollow mangrove trunks (T. Ball, pers. comm. 2002), similar to the manner described by Magnusson et al (1976).

Primary habitat for Water mice in the Proserpine area appears to be *Bruguiera* / *Ceriops* mangrove ecotones (T. Ball, pers. comm. 2002). Areas of salt couch, *Sporobolus virginicus* are also inhabited. *Rhizophora stylosa* forests are generally not primary habitat for false water rats, probably being too frequently inundated by high tides (T. Ball, pers. comm. 2002). *Bruguiera* and *Ceriops* mangroves are present, but are not the dominant species within the communities of the study area; and salt couch is not abundant within the proposed development area.

Mangroves are most abundant and extensive in the southern region of the study area. Here, *Rhizophora stylosa* is the dominant species, with few hollows. A few relatively large *Avicennia marina* occur, some with hollows, but no evidence of Water mice was found amongst them. In the Proserpine area

H.4 Conclusion

Water mice are unlikely to inhabit the area surveyed. In the most extensive mangrove areas they would need to roost / nest in trees or in artificial rock fill in order to stay above most high tides (false water rats are known to be arboreal towards the northern extent of their range (Magnusson et al 1976)). In the less extensive mangroves, potential habitat is fragmented and disturbed. Pet and feral cats are likely to predate heavily upon any small mammals in this area. Two cats were observed during our surveys. Foxes, if present, are also likely to present a considerable threat to any species of small mammal.

H.5 References

- Magnusson, W. E., Webb, G. J. W. and Taylor, J. A. (1976). Two new locality records, a new habitat and a nest description for *Xeromys myoides* Thomas (Rodentia: Muridae). *Australian Wildlife Research* 3: 153-157.
- Van Dyck, S. (1994). The rats at Neptune's table. *Australian Natural History*, Autumn 1994: 30-37.
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