

Supplementary material

Rodenticide application strategies for intertidal rat habitats

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Fig. S1. Distribution of pemphis habitat (red) on Wake Atoll. The yellow box marks the primary pemphis marsh formation requiring treatment.



Fig. S2. Bait “bolos” fashioned from two bait blocks and thrown into pemphis shrubs. Photos: S. Siers.



Fig. S3. “Daisy chain” of bait blocks strung along a single line with spacers, then flung across vegetation to suspend bait above tidal zones. Red circles indicate bait block locations. This delivery method was problematic and was eliminated from the suite of tools used during the trial application. Photo: S. Siers.



Fig. S4. T-type bait station affixed in an elevated position above the high tide line with cable ties.

Photos: S. Siers.

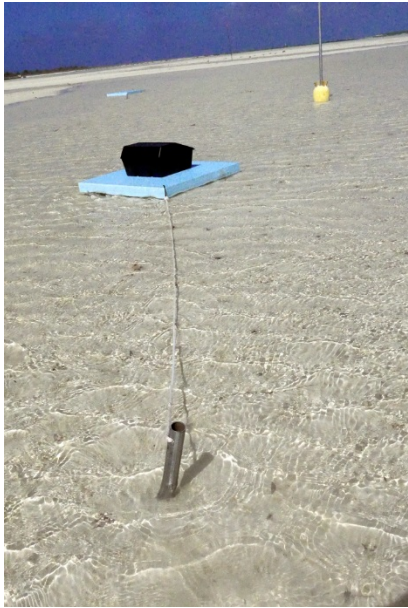


Fig. S5. Floating bait station designs. Left: bait station on a free-floating platform tethered to a stake. Right: Bait station on a foam platform with a tube collar, free to float up and down with the tide along the metal center pole. Photos: S. Siers.



Fig. S6. Floating bait station prototypes. Left: Standard box-type bait station with hole cut through center positioned over EMT center pole. Right: Variations on a T-type floating bait station, also to be sheathed onto an EMT center pole. Photos: S. Siers.

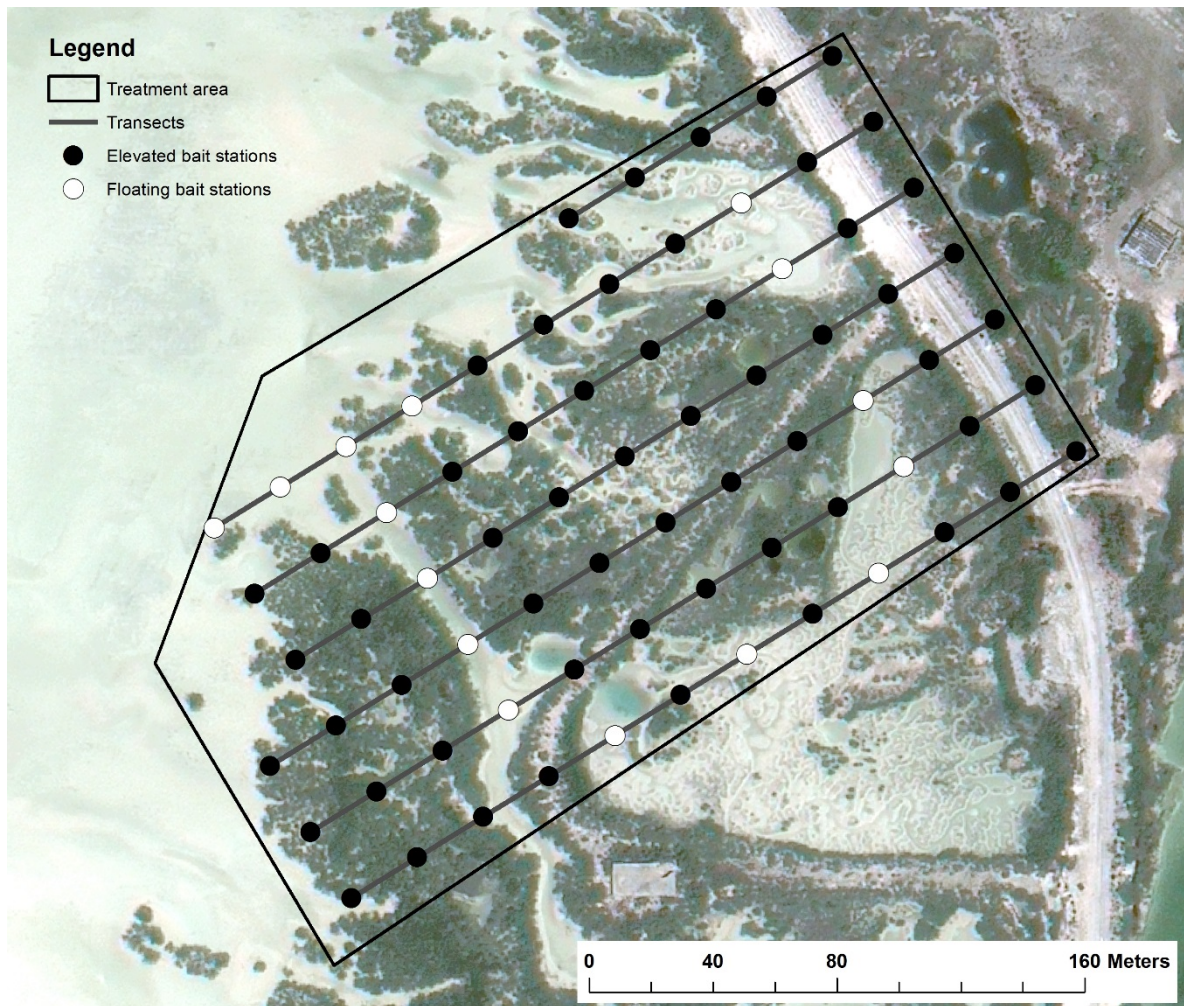


Fig. S7. Map depicting a theoretical grid for the treatment area (described below), with 25-meter spacing between elevated and floating bait stations.

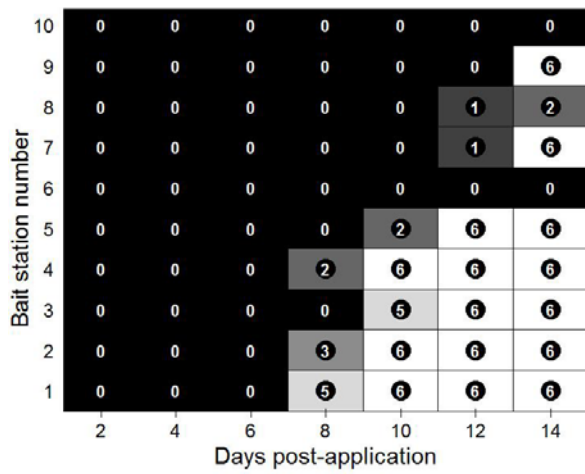
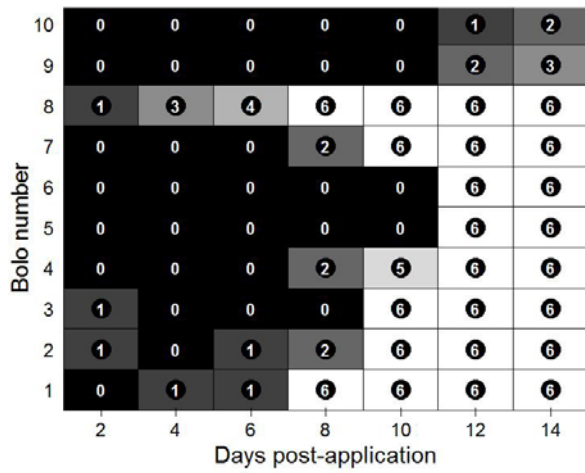


Fig. S8. Bait consumption scores for monitored bait bolos (upper left) and bait station contents (upper right). Lower-numbered stations were closer to the shoreline. Bolo 8 was along the causeway. Scores range from 0 (no evidence of consumption) to 6 (completely consumed) as detailed in Table S1.

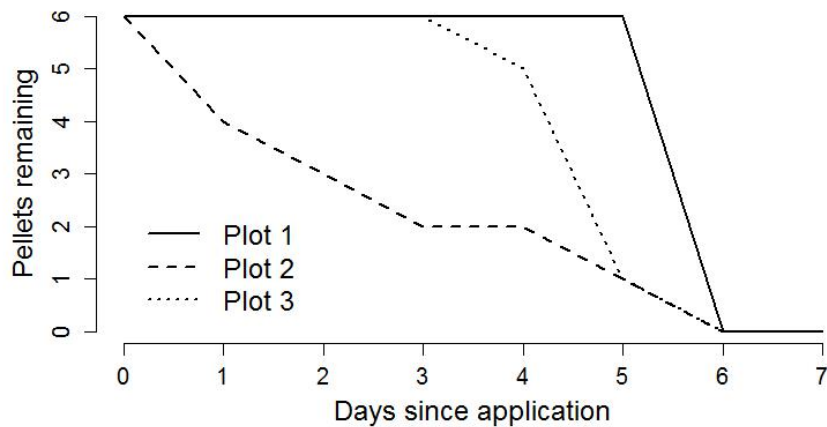


Fig. S9. Removal of pellets from monitoring plots.

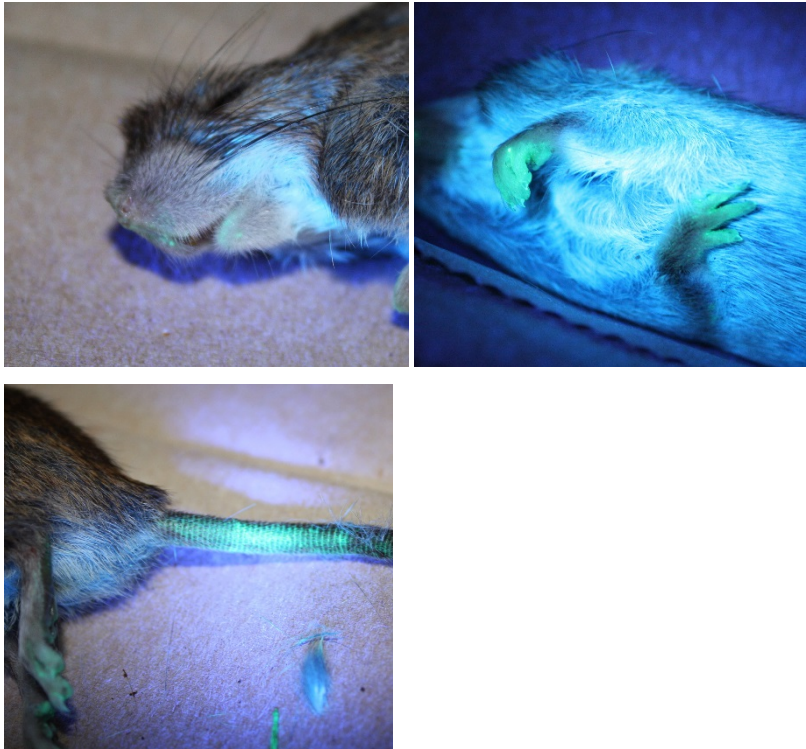


Fig. S10. Fluorescence of the mouth, feet, and anus/tail indicative of pyranine biomarker consumption. These external signs proved to be unreliable indicators of bait consumption. Photos: D. Foster.



Fig. S11. Ultraviolet fluorescence in Polynesian rat digestive tract from ingestion of pyranine biomarker in placebo baits. Photos: D. Foster.

Table S1. Bait consumption scoring convention

Observers monitoring daily consumption status of selected bait bolos and bait blocks within bait stations used the following numeric scoring convention, as referenced in Fig. 8.

Score	Criteria
0	No evidence of consumption
1	Chewing marks, <10% of bait consumed
2	10% – 24% of bait consumed
3	25% – 49% of bait consumed
4	50% – 74% of bait consumed
5	75% – 99% of bait consumed
6	100% of bait consumed