Rodent Behaviour – Session 1

Behavior of *Rattus rattus* (Linnaeus, 1758) around self-resetting traps

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Invasive ship rats (*Rattus rattus*) are the major threat to the native species and ecosystem of Goat Island (9.3 ha), New Zealand. In December 2015 a grid of 8 kill traps (DOC200s) was installed across the island to manage rat numbers. In June 2016 we extended the trapping grid with 10 self-resetting traps (GoodNature A24s), monitored with motion-activated cameras and trigger counters. All devices were checked approximately monthly until November 2017. Data on rat abundance from the kill trapping devices before, during and after the self-resetting trap study showed no significant difference among years, and were consistently low. In contrast, the videos reveal high rat activity on the island, which reduced over time, with the highest number of interactions happening in the first months after installing the self-resetting traps. The number of animals killed by the self-resetting traps varied among months and peaked in mid-summer. The rats showed interest in the self-resetting traps and interacted with them, resulting in deaths, but along with the kill traps (i.e. two devices per hectare) the number of rats killed was insufficient to offset intrinsic population growth and reinvasion from the adjacent coast, and hence achieve eradication on the island. Size selectivity is potentially an issue for both traps as young rats were not observed being killed. Self-resetting devices at one per hectare did reduce rat numbers in an area where kill trap maintenance was time and cost intensive, but maintaining very low rat numbers or achieving eradication requires additional refinement of the system (e.g. a combination of different tools or a higher density of devices).

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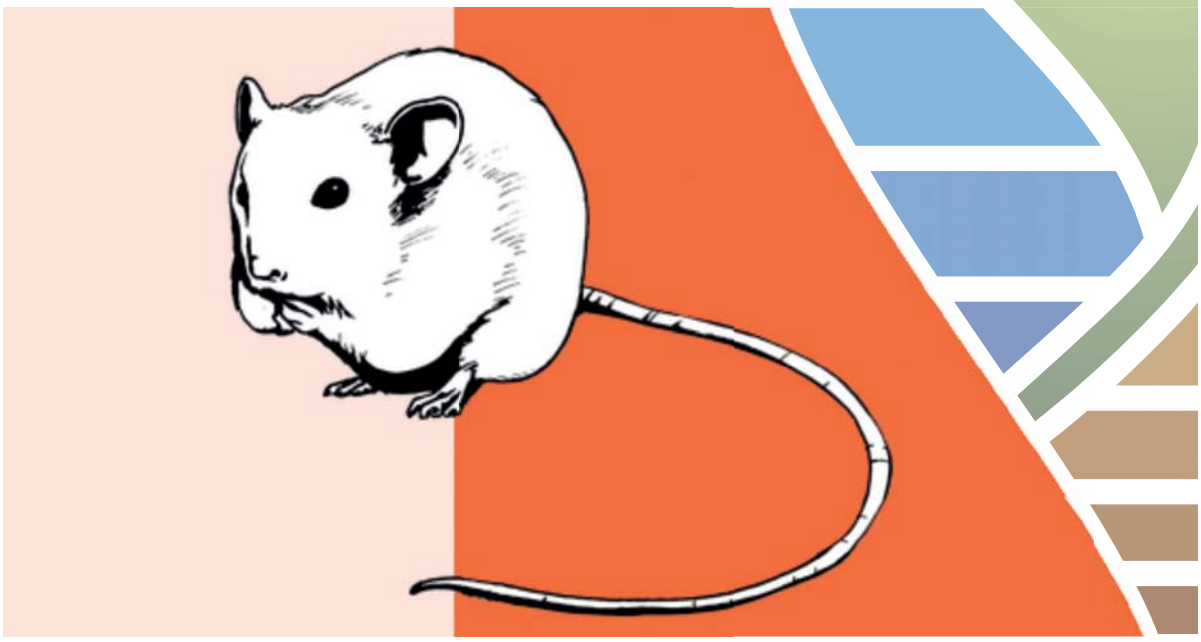

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