
Rodent Management – Session 1

Rodent trapping grids are sustainable for long-term landscape suppression of invasive rat (*Rattus rattus*), but not mouse (*Mus musculus*), populations in Hawaii

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Invasive rodents (rats, *Rattus* spp., and house mice, *Mus musculus*) are among the most damaging animals to agriculture and native species on many island ecosystems including those in Hawaii. Traps and toxic baits are widely used tools for rodent pest control or eradication. Rats and mice cause widespread environmental harm in Hawaii, including by feeding on insect pollinators and many native plants, and land managers require sustainable ways to control rodents across the landscape without using toxic baits. We experimentally tested whether snap-traps, placed in plastic boxes to limit non-target interference, were effective at suppressing invasive rodents in woodland and grassland sites on Hawaii Island where 20 threatened or endangered plant species reside; many of these species are harmed by rodents. Our design had a total of 12 plots, each 2.25 ha, that included three treatments (n = 4 per treatment): rodent removal (RR), rodents+ants+yellowjackets removal (AR), and control or reference plots (CO). In each RR and AR plot, a grid of 169 mouse traps (each 12.5 m apart) and 49 rat traps (each 25 m apart) was installed and armed continuously for 1.5 years, with bait refreshed each 1-2 weeks. We monitored rodent populations in all 12 plots using tracking tunnels, which are baited ink cards placed in tunnels so that foot prints of animal visitors can be identified. We determined that both rats and mice could be effectively suppressed (<20% detection in tracking tunnels) for ~4 months after trapping initiated; yet only rat, and not mouse, suppression was sustainable thereafter. Trail camera evidence revealed that mice became habituated to traps in some cases, leading to trap avoidance, and that some non-target animals interfered with mouse traps. In areas with high mouse populations, grids of snap-traps may not be a sustainable management technique for long-term house mouse control.

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Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

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