

**Behavioural plasticity in habitat use enables large, nocturnal geckos, *Hoplodactylus duvaucelii*, to persist following invasion by kiore, *Rattus exulans***

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Commensal rodents are efficient invaders on a global scale and pose a significant threat to native biota, particularly on oceanic islands with few native mammals. Kiore (Pacific rats; *Rattus exulans*) are implicated in extinctions, range restrictions and declines of vulnerable endemic faunas throughout New Zealand and the Pacific, yet research into the ecological strategies that enable some native species to persist in their presence is lacking.

I examined the population structure, behaviour and microhabitat use of similar-sized, nocturnal, Duvaucel's geckos, *Hoplodactylus duvaucelii* (radio-telemetry), and kiore (spool-and-line tracking) on three New Zealand islands with different histories of kiore incursions and eradication: (i) Green Island, historically kiore-free, (ii) Korapuki, eradicated 20 ya, and (iii) Ohinau, before and 6 months after eradication. Although kiore and Duvaucel's geckos share habitat at a broad spatial scale, little overlap in micro-habitat use exists where they are sympatric. In the presence of kiore, Duvaucel's gecko capture rates and recruitment are reduced. Six months after kiore eradication I observed a four-fold increase in capture rate of adult geckos, as they reverted to using niches characteristic of those on kiore-free islands. Spatial avoidance behaviour by these large, nocturnal geckos is a highly plastic response to kiore enabling their persistence.

