

Applying Genetics to Characterise the Invasion of Islands by Rats in New Zealand

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The three species of rat found in New Zealand, *Rattus norvegicus*, *R. rattus* and *R. exulans*, are classed as invasive pests. Since their introduction, they have wreaked immeasurable damage to native biota, even pushing some endemic species to extinction. Today, rat-free islands are the last refuges for many native species. The aim of this study was to investigate the invasion dynamics of rats over archipelagos in New Zealand. Direct observation of invasion events was impractical, so methods were developed to perform the investigation using DNA extracted from tissue samples from trapped rats. We present a selection of the methods developed and examples of their application within the scope of this project. Implications for the establishment of island reserves resulting from the interpretation of these results are discussed.