

A comparative survey of the aquatic invertebrate fauna of Hauturu - Little Barrier Island

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Eligible for student prize

Hauturu-Little Barrier Island in New Zealand's Hauraki Gulf is a conservation jewel. Its numerous streams are largely ephemeral, rapidly transforming from raging torrents to isolated pools. The freshwater biota must be adapted to this disturbance regime in order to persist on the island. Very little is known about the island's aquatic invertebrates. In August 1963, M.J. Winterbourn conducted a survey of benthic aquatic fauna in four of the streams on Hauturu. This was repeated in 2014, with the addition of light trapping for adult stages. Our aims were; 1. generate a current inventory of the species present in the surveyed streams, 2. compare the species found in 2014 with those found by Winterbourn, and 3. examine community differences as a function of catchment and measured environmental variables. Initial results indicate that stream communities have changed little over the past fifty years. In total, 33 macroinvertebrate taxa from 12 orders were recorded from benthic samples. Mayflies (Ephemeroptera) were the most numerically common and species-rich taxon. Nine mayfly species were recorded from the benthic samples; the most abundant of which were *Zephlebia borealis*, *Arachnocolus phillipsi* and *Isothraululus abditus*. The latter is notable as it is infrequently found on the mainland. A further five species of mayfly were detected by light trapping. In total, at least six species of mayfly (*Maiulus luma*, *I. abditus*, *Z. spectabilis*, *A. phillipsi*, *Ichthybotus hudsoni* and *Neozephlebia scita*), and one species of caddisfly (*Oxyethira* sp.) not recorded in the Winterbourn survey, were found in 2014. Initial results indicate some differences in communities between catchments, though the environmental factors responsible are yet to be identified.