

## **Invertebrate indicators of restoration success in the Punakaiki ecological restoration project**

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In any restoration programme there is a need to set measurable goals and restoration practitioners seek simple indicators of restoration success. Establishing when restoration is making a difference or successfully achieved is not always easy to measure. This research based near Punakaiki on the West Coast of the South Island tests several entomological methods for their usefulness in detecting invertebrate species differences along a restoration trajectory. The Punakaiki Coastal Restoration Project (PCRP) is a collaboration between Rio Tinto, Conservation Volunteers New Zealand, Lincoln University and the Department of Conservation to restore the sand plain forest habitat on the Barrytown flats 4 km south of Punakaiki Township. Monitoring at the restoration site is being compared with mature reference sites from Nikau Reserve and unplanted exotic grassland sites nearby. Invertebrates were monitored using pitfall traps, wooden discs, soil sampling, leaf litter, weta motels and light trapping. Carabids, dung beetles and ants collected from pitfall traps were significantly more abundant in mature sites. Snails, weevils, ants, centipedes and spotted worms were only found in leaf litter from mature sites. Earthworms significantly decreased with increasing vegetation age whereas the proportion of endemic worms significantly increased in mature sites.

