

Motuora 10 years on: Restoration trajectory of a native beetle community.

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Revegetation is one of the most widely used interventions in terrestrial restoration, as the structure and extent of vegetative cover profoundly shapes both the physical and biotic features of a landscape. Such projects typically proceed on the premise that there is a causal link between re-establishing native forest cover and restoring native biodiversity, even though there have been relatively few assessments of the success of replanting native forest. This study assesses the response of the beetle community to native re-forestation on Motuora Island, an 80-ha island about 40 km north of Auckland City, New Zealand. The island has been actively restored by a community-led group since 1991. We measured the beetle communities on Motuora in 2004 and in 2014, comparing the successional trajectories of unmanaged natural restoration (c. 80 years old), native tree planting, and retired pasture. Both the diversity and abundance of beetles has increased in all three vegetation types. Beetle assemblages in planted forests have converged toward those found in unmanaged forest, while the assemblage in retired pasture has remained distinct. Based on the current literature and restoration rate of flighted beetles we predict complete convergence in another 20 to 40 years for the ground-dwelling beetle community.

