



## **Assembling the genome of rātā Moehau and applications for other NZ *Metrosideros*.**

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The 12 *Metrosideros* native to Aotearoa New Zealand (AoNZ) are facing a growing number of threats, particularly since the arrival of myrtle rust (*Austropuccinia psidii*) in 2017. Despite their iconic status (e.g. Pohutukawa *M. excelsa* known as the AoNZ Christmas tree) we have surprisingly little genetic data to help us understand how diversity is partitioned across the landscape for most species. One of the most threatened species is rātā Moehau (*M. bartlettii*), a critically endangered rātā tree found only in the far north of AoNZ. At the last count only 14 trees were found in the wild. In conjunction with the iwi (tribe) Ngāti Kuri we have assembled a genome of rātā Moehau. This will allow us to resequence samples representing (almost) the entire wild population, plus representatives of additional closely related species. At the same time, we are using the assembled genome to develop new markers and are gathering a dataset of as many AoNZ *Metrosideros* species as we can to sequence using amplicon sequencing. The end goal is an understanding of how the genetic diversity of each AoNZ *Metrosideros* species is distributed in space, with a particular focus on modelled refugia in the face of climate change and projected myrtle rust spread to help prioritise conservation effort.

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