

New Mistletoe Census Results Show Benefits of Sustained Pest Control at Tikitapu

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The Ōkāreka Mistletoe Restoration Project/Tikitapu Scenic Reserve Pest Control Project was established in 2002 with one of the main objectives being to increase the distribution and population size of two threatened mistletoe species (*Ileostylus micranthus* & *Tupeia antarctica*) within the management area – Tikitapu Scenic Reserve at Ōkāreka. This is a key project for Rotorua Forest and Bird and the Rotorua Botanical Society with support from Bay of Plenty Regional Council and Department of Conservation.

One of the main reasons why mistletoe species are threatened in New Zealand is ongoing possum browsing so the presence of two species of mistletoe in Tikitapu Scenic Reserve was one of the key drivers for the initiation of the project in 2002 at this particular site. Since then, there has been sustained animal pest control undertaken due to the diligence and hard work of the volunteers from Rotorua Forest and Bird with ongoing plant pest control undertaken by volunteers from Rotorua Botanical Society and Landcare Ōkāreka. Plant pest control reduces competition from a range of significant weed species which in this area is an additional significant threat to mistletoe and their host plants.

In 2001 DOC completed a mistletoe survey in Tikitapu Scenic Reserve before any plant or animal pest control started, which showed an estimated mistletoe population of 218 plants – all *Tupeia*. Another census was completed over two days in August 2016, which revealed a total of 2034 live mistletoe plants present at the Ōkāreka end of the reserve with 2017 of these being *Tupeia* and the remainder *Ileostylus*. From 16-19 January 2024 DOC staff and Mike Goodwin, assisted by several other volunteers, spent four days systematically counting and GPS waypointing the mistletoe population in the reserve. Results are summarised below:

Table 1. Mistletoe species and the number of individual live mistletoe plants present in Tikitapu Scenic Reserve, 2001-2024.

Mistletoe numbers in Tikitapu Scenic Reserve, Ōkāreka						
Year census took place	2001		2016		2024	
Mistletoe Species	Tupeia	Ileostylus	Tupeia	Ileostylus	Tupeia	Ileostylus
Number of Live Mistletoe Plants	218	0	2017	17	8044	56
Total No of Live Mistletoe Plants	218		2034		8100	
Overall Percentage Change	Baseline		833% Increase from 2001		300% Increase from 2016	

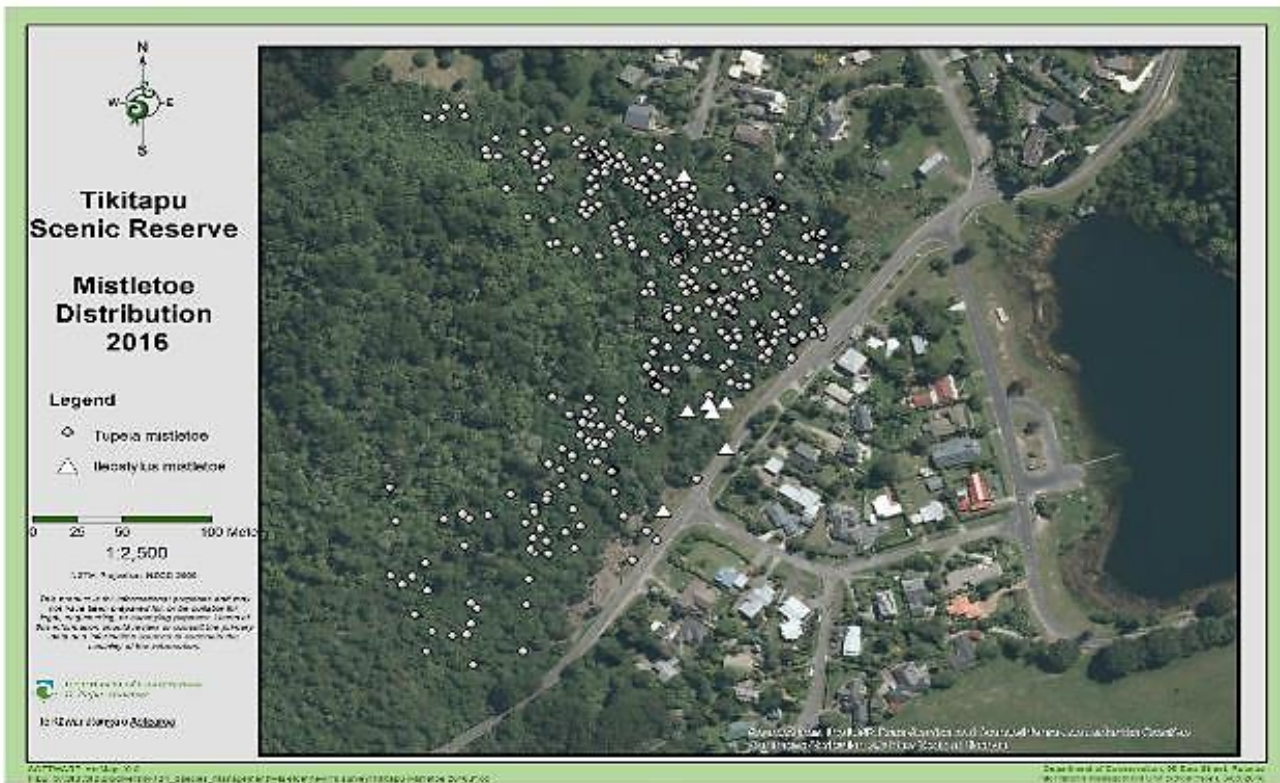


Figure 1. Mistletoe density and distribution in 2016 within Tikitapu Scenic Reserve

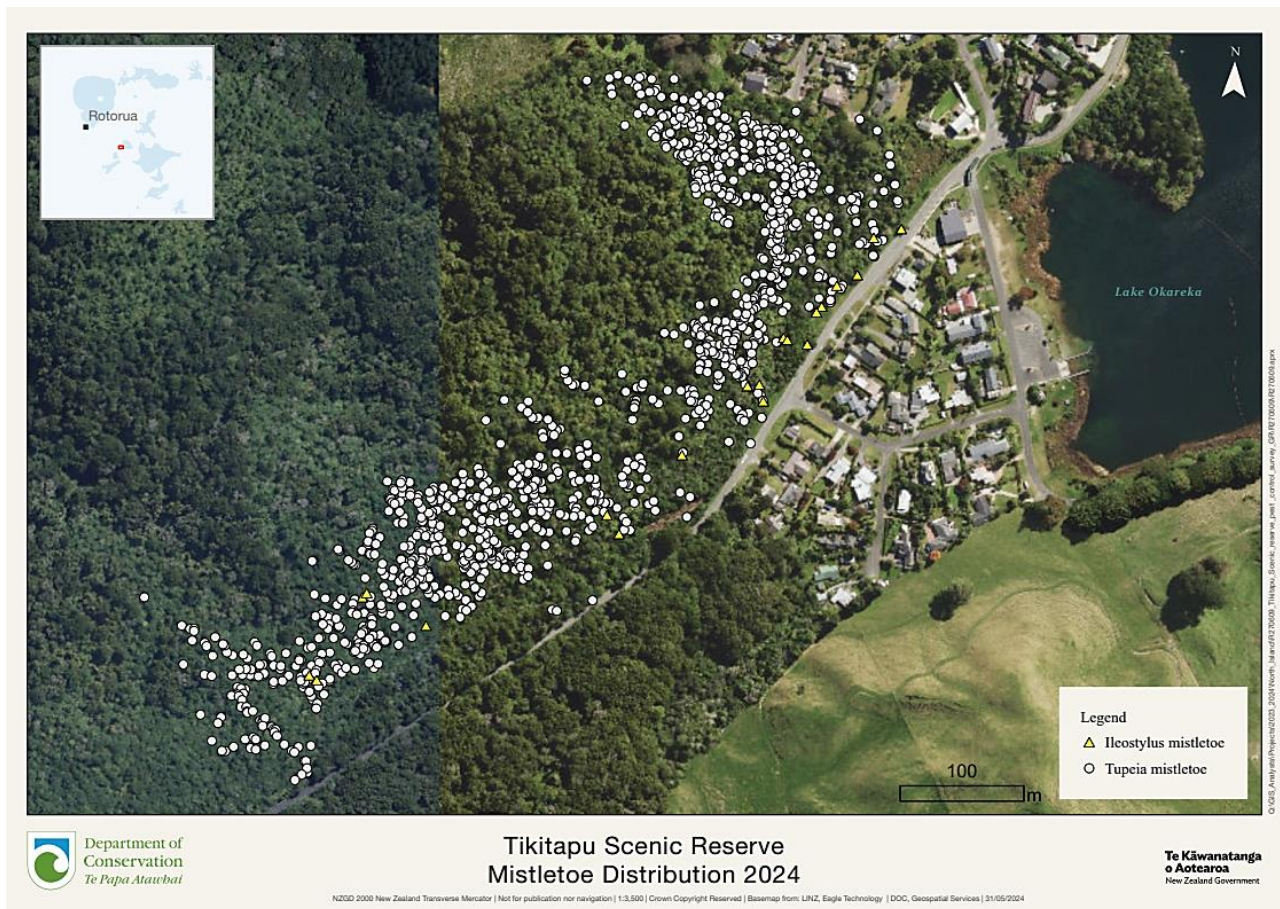


Figure 2. Mistletoe density and distribution in 2024 within Tikitapu Scenic Reserve

The results from the latest census this year show that both mistletoe species are now present in much greater abundance and distribution than previously known. Comparing the two mistletoe distribution maps for Tikitapu Scenic Reserve above (Figure 1 and Figure 2) shows mistletoe density has increased throughout and the distribution has increased by 1 km south towards Blue Lake Holiday Park compared with 2016. Our survey of Tikitapu Scenic Reserve stopped at bait station line 13, with *Tupeia* mistletoe still being found so the *Tupeia* population is even larger than 8100 plants. The mistletoe population has not spread any further west within the NE part of Tikitapu Scenic Reserve as the main habitat in the western part of the reserve is dominated by tawa forest which is not a known local host for *Tupeia*.



Figure 3. *Tupeia* mistletoe on five finger host trees in Tikitapu Scenic Reserve.
Photo: Paul Cashmore.

Conclusions from the latest mistletoe census

The significant increase in population size, density and distribution of *Tupeia* and *Ileostlyus* since 2001 in Tikitapu Scenic Reserve is due to sustained low animal and plant pest numbers as a result of the ongoing efforts of Rotorua Forest and Bird, Rotorua Botanical Society and Landcare Ōkāreka volunteers. As stated, this was a key objective for the Ōkāreka Mistletoe Restoration Project/Tikitapu Scenic Reserve Pest Control Project, and this census reconfirms that this objective is still being met. Due to these efforts this is now by far the largest known *Tupeia* population in the Rotorua District and wider Bay of Plenty. A great outcome for mistletoe in the Bay of Plenty and for all the volunteers who have worked so hard on this project over the past 22 years.