Rapid depletion of Totara fruits by Tui

Numerous Totara (*Podocarpus totara*) trees, planted mostly during the 1930s, are growing throughout Pukekura Park in central New Plymouth. Among them are many mature female trees that, individually, bear varying amounts of fruit mainly from February to April in each year.

I have seen New Zealand Pigeons (Hemiphaga novaeseelandiae), Tui (Prosthemadera n. novaeseelandiae), Silvereyes (Zosterops l. lateralis), House Sparrows (Passer domesticus), Starlings (Sturnus vulgaris), Blackbirds (Turdus merula), and an occasional Song Thrush (Turdus philomelos) eating Totara fruits in the park. Over a period of three days, 4-6 February 2002, I observed all seven species, including at least 12 Tui at a time, significantly reduce the number of ripe and ripening fruits on a heavily-fruiting tree.

On 1 April 2004 at 2pm, while observing birds in the park, I heard Tui calling loudly nearby. I soon found them feeding on the fruits of a large Totara. I could see numerous fruits on the tree. These fruits were mostly light-yellowish in colour, but there were also some reddish ones. One New Zealand Pigeon was in the tree eating fruits during the whole time I was there, as well as three Starlings which frequently visited the tree and also fed on them.

My first count of feeding Tui was eight, a short time later I counted 12, and then 16. As time went by, the number of Tui visiting the tree increased. The feeding birds were making a lot of noise as they flew to and from the tree, and when they were in nearby trees. Perhaps the

noise they made was what attracted other Tui. By about 3.30-4.00pm many more Tui were feeding in the tree than when I first arrived. It was difficult to count the Tui accurately because there was a great deal of coming and going between the Totara and adjoining trees. Nevertheless, at about 4pm, two counts produced a total of at least 31 Tui, of which, at one point, about 28 were feeding in the tree at the same time. It was a wonderful sight to see so many Tui in an urban park feeding in the same tree at the same time, with all the associated activity and high noise levels.

I frequently saw Tui picking fruits off the Totara as they hung upside down from a twig by one foot only. On one occasion I saw a Tui drop a fruit it had picked, and then let go its grip and catch the fruit in mid-air before it had fallen far. There were very few whole Totara fruits on the ground beneath the tree, so the Tui must have been very adept at swallowing nearly all of the fruits they picked. When the Tui were not in the Totara they were in immediately adjoining trees where they looked for insects and made a lot of noise.

This feeding activity continued until about 4.45pm when there was a quite sudden and noticeable decline in the number of Tui visiting the To-

tara. Shortly afterwards, the remaining birds also deserted the tree. It was still quite light at the time, although getting duller, so decreasing light was not the reason for the cessation of activity. The reason became apparent on inspection of the tree through binoculars. When I arrived at 2pm, numerous fruits were obvious all over the tree. By about 4.45pm, very few fruits were still readily visible. I do not know how long Tui had been feeding at the Totara before I arrived, but they virtually stripped it of fruit during the three hours I was there. There is little doubt that the Tui deserted the tree because they had effectively exhausted it as a food source.

Many Totara seeds must be scattered widely by Tui. Beveridge (Proceedings of the New Zealand Ecological Society 11(1964): 48-55) found that the most active dispersers of podocarp seed, including Totara, in central North Island native forests are Tui, New Zealand Pigeons, and Bellbirds (Anthornis m. melanura). He concluded that seed of most podocarp species is distributed beyond 40m from the parent tree, primarily by birds. Burke (New Zealand journal of botany 12(1974): 219-226), in a study of podocarp regeneration on Mt Tarawera, observed that Totara seeds had been dispersed up to 4.8km from the nearest adult trees. 🔖

