The Autecology and Conservation of the North Island Weka

(Gallirallus australis greyi)

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Abstract

I studied a population of weka in the Waikohu Valley, Rakauroa, near Gisborne from March 1992 to January 1994 using radio telemetry to determine productivity, home range size and resource selection by weka. Fifty-six weka were banded and 28 wore radio transmitters for 1-312 days. The population was estimated to be 39 resident adult birds from call count surveys and banding. Most (68.6%) adult birds found during the study were probably males. The Rakauroa weka population may be declining at a rate of 4 birds per year and without immediate management extinction is likely.

Weka productivity was very low, with 12 eggs needed to produce 1 independent chick. Twenty-five breeding attempts were discovered and breeding occurred throughout the year. The reason for this low productivity was not determined, but predation on eggs and chicks by introduced mammals is likely.

The first evidence of predation on adult weka by ferrets (*Mustela putorious furo*) was recorded with 2 radio-carrying birds and 1 other being killed by a ferret. Weka feathers were also found in the gut of a female ferret killed in October 1993. The main cause of weka mortality was being run over by traffic. Six weka died in this way.

Weka were found in damp, scrubby areas and occupied mostly ungrazed scrub and bush and woodpiles within their home ranges. Weka used an average of 10.00 hectares with males using significantly larger

areas than females. Adults used larger areas than juveniles. Weka were secretive and crepuscular, generalist feeders who used food in proportion to its availability.

To test the hypothesis that predation on eggs and chicks was limiting productivity of weka pairs at Rakauroa, I compared the productivity of weka in predator free areas with that of weka in areas with a normal predator density (control areas). The two weka pairs I observed breeding in predator free areas reared 5 chicks to independence. Two pairs in control areas reared no chicks to independence despite 3 breeding attempts.

The release of captive-bred weka at Karangahake Gorge by the Royal Forest and Bird Protection Society in 1992 and 1993 provided an opportunity for me to compare the movement, diet and survival of weka at Karangahake with that of weka at Rakauroa. Any difference between weka in the 2 areas may indicate possible reasons for the success or failure of the release. Predation (mainly by dogs, *Canis familiaris*) was found to be the reason why weka carrying radios released at Karangahake failed to persist. Of 17 birds released between October 1992 and March 1993 only one was known to be alive by 24 June 1993. This has important implications for future releases of weka.

The future monitoring and management of weka is discussed in light of my findings. Weka management should begin immediately on the East Coast. Management should aim to improve the production and survival of young weka by predator removal. Areas of scrub and cover should be

targeted for management and publicity to lessen the destruction of this habitat and the weka road toll is necessary. The release of weka at Karangahake should not continue, these birds being made available for release at a more suitable site. The release of females (either captive-bred or from offshore islands) into areas such as Rakauroa to improve breeding success and link small remnant populations on the East Coast should be considered.

Contents

Figures, Tables and Plates