## Analysing the home range and habitat use of western weka (*Gallirallus australis australis*) in the alpine environment of Secretary Island.



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Weka are one of New Zealand's native avian predators and also play an important role in our ecosystems as omnivorous scavengers and seed dispersers. However, the introduction and impact of invasive mammalian predators into New Zealand has disrupted the natural predator-prey balance and weka are often omitted from restoration projects, particularly in mainland or offshore predator-free sanctuaries, due to the concern that they may negatively affect more vulnerable species via predation. One of the main purposes of my study is to evaluate the home ranges and habitat use of western weka (Gallirallus a. australis) in the alpine environment of Secretary Island, a largely predator-free island (only a small number of stoats remain) along the coast of Fiordland National Park, in order to better understand alpine weka ecology. In the middle of my field research period (November '22 – April '23), a translocation of mahogany skinks (Oligosoma pluvialis; NZTCS: At Risk-Declining) from the Llawrenny Peaks area above Sinbad Gully to the alpine zone of All Round Peak on Secretary Island was conducted by DOC. I wanted to use this opportunity to also assess whether weka home ranges and potential habitat use changes once the translocation occurred, i.e., do they tune-in to the arrival of a new prey species and start utilising the area of the lizard release site more after the translocation than they did before? The final goal of my study was to assess any interactions between weka and skinks to better understand the potential impact of weka on low-density prey populations.

During two separate field trips to Secretary Island in late November '22 and early January '23, we caught and harnessed a total of 20 weka. Thanks in part to the 2022 Birds NZ Research Fund, we attached Lotek PinPoint 350 GPS store-on-board data-loggers and TW-28 VHF transmitters to the harnesses. The PinPoints were scheduled to take a location fix every two hours, 24/7, and the battery was meant to last for approximately four months, with the intention to collect sufficient GPS data both before and after the lizard translocation, which occurred on 31<sup>st</sup> January. In April '23, we managed to re-catch most of the weka and also retrieve a few harnesses that had fallen-off over the summer, getting back 17 of the 20 harnesses! Unfortunately, many of the PinPoints experienced a technical or mechanical error, so most of them were not taking location fixes for as many days as we hoped. This means I will not be able to make a comparison of weka habitat use pre- and post-lizard translocation using GPS data. However, there is still enough data to gain some valuable and interesting insights into weka home ranges, habitat use, and resource selection in

alpine, subalpine, and forest environments. In addition to collecting GPS data, I also placed ten trail cameras around the lizard release site to capture any lizard, weka, or other potential predator activity. Between mid-February and early-April, the trail cameras captured plenty of skinks, but only two occurrences of weka and no evidence of weka preying on lizards. I have not yet began the formal analysis of the weka GPS data, but look forward to sharing the results with the Birds NZ community in the near future.

