

Seabird surveys of predator-free islands in Northland

To be able to assess the severity of threats to seabirds, or the effectiveness of conservation measures requires periodic assessments of population size to understand whether populations are declining or increasing. In northern North Island, and despite the proximity of seabird colonies to New Zealand's largest city, we lack up to date knowledge of population size for most species, or even the main colony sites of commonly observed breeding species. For example, fluttering shearwaters are extremely abundant in northern North Island and are often seen in huge flocks at all times of the year, feeding in association with fish schools, flying swiftly between foraging grounds, or in very large dense rafts. We know they breed on a good number of islands, but not where the main populations are located. Finding them is one of the goals of our surveys of Northland's predator-free islands. We will also be recording other species with systematic searches (where possible) made on the smaller islands.

The Birds NZ Research Fund grant, combined with some additional funding through a contract with the DOC Conservation Services Programme, will allow us to investigate a number of islands, some large, some small. We are using a variety of techniques for this work as surveying relatively small, heavily burrowed islands with mixed vegetation, can be extremely difficult, especially when the risk to damaging burrows and injuring birds is high. We are utilizing thermal imaging gear to allow us to scan the islands to assess bird activity. We will also use spotlights, playback and, in accessible places, traditional hands-and-knees stuff of checking burrows for occupancy either side of transects or any well-used routes. We will be working both during the day and at night.

Good examples of these fragile heavily burrowed islands are **Muriwhenua/Wareware** and **Pupuha Islands, Northwest Chickens**. We are following up on a record of 'several thousand' fluttering shearwaters breeding on Muriwhenua, made during a visit to the Chickens Islands, December to January 1982 (McCallum 1984). Nearby are **Mauitaha and Guano Islands, Bream Islands** and despite being close to Bream Head and Ocean Beach on the mainland these islands are predator-free. They are a real biodiversity hotspot – for reptiles and invertebrates as well as seabirds. Our search for concentrations of fluttering shearwater will also take us to other islands in the Chicken group – **Lady Alice** and **Whatupuke**.

Two other larger islands are also part of our sweep of fluttering shearwater surveys for this year – **Tawhiti Rahi** (Poor Knights Islands) and **Taranga (Hen Island)**. The 'many thousands' reported by McCallum (1981) as breeding on Tawhiti Rahi were not found in recent Buller's shearwater surveys, however that may be a reflection of timing of visits. Our visit this year in September addresses that. Also, fluttering shearwaters were detected on recorders deployed in late October and November 2010 at the western end of Taranga. Little shearwaters were also detected as were Cook's petrels and grey-faced petrels. Establishing multiple study sites, easily accessible from good camps or huts, is important for future monitoring studies of these seabird species allowing them to be utilized as indicator species for the health of the marine environment.

Motukokako (Hole in the Rock or Piercy Island) off Cape Brett, Bay of Islands is also included in these surveys. We are working with the Motukokako Ahu Whenua Trust who manage the island. Over several years we been invited to participate in ecological surveys of this iconic and important island. The aim this time is to conduct a dedicated systematic seabird survey of all accessible forested or scrub-clad areas to determine species breeding and to provide population estimates. There is an important training component for young Maori from the hapu in this proposal.

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