2020 Birds New Zealand Research Fund – Summary Article

Do stoats impact tawaki breeding success?

During the 2020 tawaki (Fiordland penguin) breeding season, the West Coast Penguin Trust (WCPT), supported by funding from the NZBirds Research Fund, asked whether tawaki breeding success is influenced negatively by the presence of stoats. In previous seasons (2014-19), the WCPT had found that stoats can prey switch from rodents and predate tawaki eggs and chicks, particularly so in a season following a beech mast event.

The 2020 season followed a South Westland beech mast event in 2019 and, if unmanaged, there was a risk that large numbers of stoats could result in a devastating impact on tawaki breeding success, as they did at Jackson Head in 2016.

The season was chosen for intensive study to maximise the opportunity to learn from that event comparing three different levels of predator control.

Stoat detection tools (camera traps and tracking tunnels) were located within and around three tawaki colonies in South Westland, and tawaki nests were monitored with trail cameras to measure the effectiveness of each stoat management regime: a) Gorge River without predator control; b) Jackson Head with a community predator trapping project; and c) Moeraki with landscape scale predator control by the Department of Conservation.

The WCPT tawaki rangers measured breeding success at each colony, stoat presence within and near tawaki colonies, and nest visitation rates by stoats.

The expected stoat population explosions did not eventuate although stoats were detected in all three colonies. All three sites had good breeding success to crèching of between 0.83 and 1.00 (nests that raised one chick/total nests monitored) and nest failure may have been due to natural causes. It appears that stoats did not need to prey switch from rodents to tawaki eggs or chicks due to rodents remaining common.

Analysis of the data from 2020 and compared to earlier seasons is continuing but we can conclude that:

- The species to watch and understand is the stoat
- It is important to understand the surrounding environment, particularly the timing and local severity of beech mast events in relation to stoat population dynamics and interactions between stoats and their prey species
- The Trust needs to work with DOC and others to improve stoat control

The WCPT is advocating for an extension to a key predator control block to include the largest known tawaki breeding colony of approximately 400 nests across 5km of coastline, and they are proposing and will support an increase in the community trapping programme at Jackson Head. If successful, this expanded level of predator control would bring around 60-70% of South Westland breeding tawaki under a form of stoat management, which is expected to add to the overall breeding success of tawaki in South Westland.

Tawaki Ranger, Catherine Stewart, adjusts a nest trail camera without disturbing the penguin