

Report on a visit to Mana Island, 19–27 October 2022

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The main reason for our visit to Mana Island was to undertake monitoring of four species of translocated petrels (common diving petrel, fairy prion, fluttering shearwater, and white-faced storm petrel). This is reported in full in the accompanying report 'Monitoring of translocation seabirds on Mana Island, October 2022'. This trip report summarises other activities and observations from our 9 days on the island.

Many of these tasks were scheduled for completion during FOMI trips that never eventuated due to the lack of a commercial boat operator. Weeding was not among our list of 18 tasks to complete, but was undertaken due to the concerning proliferation of weeds on the island since October 2021.

Daily summary of main tasks completed

Wednesday 19 October 2022

Checked all known fluttering shearwater burrows at South Point and Shearwater Point, including all 101 FS burrows and all 100 FP burrows. Marked all incubating birds with twink.

Trimmed vegetation to improve access to Shearwater Point AB burrows.

Thursday 20 October 2022

Checked all known diving petrel and fairy prion burrows at Shearwater Point, including all 104 AB burrows. Installed monitoring fences at all active fairy prion burrows. Also checked all 107 WFSP (white-faced storm petrel) artificial burrows, and trimmed track to northernmost DP (diving petrel) burrows.

Friday 21 October 2022

Hand-pulled 31 *Senecio glastifolius* at Hole-in-Rock valley.

Rechecked all active diving petrel, fairy prion and fluttering shearwater burrows for changeovers of incubating birds.

Selected and installed three photo-points to monitor flax collapse c. 200 m south of trig.

Hand-pulled 18 *Senecio glastifolius* below picnic table.

Monitored the remaining 2017 plantings of Maud Island flaxes.

Hand-pulled 211 *Senecio glastifolius*, 3 boneseed, 4 tree mallow and 2 karo east of the trig.

Searched for ngahere geckos at their release site.

Night visit to Shearwater Point and South Point to search for non-breeding petrels and locate new natural breeding burrows.

Saturday 22 October 2022

Completed 5-minute bird counts at all 20 marked sites (each of us counting independently in opposite directions on the circuit).

Hand-pulled 684 *Senecio glastifolius* below trig.

Rechecked all active fairy prion burrows for changeovers of incubating birds.

Trimmed track to Astons Valley 5-minute bird count station.

Nighttime search for tagged flax weevils in weevil MIQ (1-hour timed search).

Sunday 23 October 2022

Searched for and set all 160 pitfall traps at the flax/flax weevil monitoring site (5.5 hours).

Hand-pulled 612 *Senecio glastifolius* below and south of trig.

Rechecked all active fluttering shearwater and fairy prion burrows and selected diving petrel burrows for changeovers of incubating birds.

Monday 24 October 2022

Checked and disarmed all 160 pitfall traps at the flax/flax weevil monitoring site (3 hours).

Searched for ngahere geckos at their release site.

Hand-pulled 25 *Senecio glastifolius* and one karo in upper Kaikomako Valley.

Rechecked all active fairy prion burrows and selected fluttering shearwater and diving petrel burrows for changeovers of incubating birds.

Night visit to Shearwater Point and South Point to search for non-breeding petrels and locate new natural breeding burrows.

Tuesday 25 October 2022

Rechecked all active fluttering shearwater and fairy prion burrows for changeovers of incubating birds.

Hand-pulled 117 *Senecio glastifolius*, six tree lucerne, and two karo in Weta Valley.

Searched for McGregor's skinks and spotted skinks south from the woolshed to the south-west bay.

Hand-pulled 134 karaka, 131 tree mallow, four karo, and one *Pseudopanax* hybrid on beach ridge from Landing Bay to the start of the track to Hole-in-Rock.

Nighttime search for tagged flax weevils in weevil MIQ (1-hour timed search).

Wednesday 26 October 2022

Rechecked all active fairy prion burrows and selected fluttering shearwater burrows for changeovers of incubating birds.

Re-clad the internal wall of weevil MIQ (7 hours).

Searched DOC archives for information on early takahē translocations to and from Mana Island.

Night visit to Shearwater Point and South Point to search for non-breeding petrels. Checked all 107 WFSP burrows, and fenced fairy prion burrows.

Thursday 27 October 2022

Re-checked all known fluttering shearwater, fairy prion, and diving petrel burrows at South Point and Shearwater Point (including all 101 FS burrows) for egg/chick status.

Cleaned Lockwood, departed 1500 h.

Flax monitoring

As part of a project to determine the cause of extreme flax weevil impacts on flax on Mana Island, flax seed was gathered from Maud Island (where the weevils were introduced from) in early 2015, and germinated in the Mana Island nursery. The young plants were planted out in July 2017, and were paired with Mana Island flaxes at two of the five planting sites. The plantings were monitored during FOMI working weekends until they ceased.

Flax weevils have yet to reach the most north-easterly site (furthest from the flax weevil release site), and the flaxes remain healthy there. Weevils have killed all but three flaxes at the three southernmost sites (with zero, one, and two plants remaining respectively), and are currently impacting the fourth site (Lance's gully). We undertook monitoring of plant presence and health at the four sites with surviving plants on 21 October 2022.

Flax weevils have reached the large area of flax just south of the trig, which is in the early stages of collapse, and will likely disappear within 2 years. We installed three photo-points overlooking the area, so that this profound ecological disturbance can be documented. The photo-points are re-purposed flax planting waratah stakes, with existing tags FW01 to FW03. All are about 200 m from the trig, with FW01 6 m inland of the Tirohanga track, and FW02 & FW03 on the top of the firepond bund 60 m inland of the track, looking in opposite directions (FW02 looking north, FW03 looking south-west). GPS waypoints: FW01 -41.08081 174.78106, FW02 -41.08068 174.78162, FW03 -41.08087 174.78172.

Flax weevil impacts monitoring

The main study of flax weevil impacts on lizard and insect communities has been at Will Brockelsby's MSc thesis study site, near the centre of the island, in the head catchment of Astons Valley. Monitoring of the animals living on and under 80 mature flax plants at the site began in August 2018 and continued regularly until February 2021, then effectively ceased due to the lack of access to the island. The only times the 160 pitfall traps at the site have been set since then were during the October 2012 & 2022 seabird monitoring visits.

Most of the flaxes at the site have collapsed and died, and so the habitat has changed from large healthy flaxes to piles of dead foliage. Monitoring should continue as opportunities allow, until all the dead leaves have decomposed and there is no evidence of collapsed flaxes at the site.

It was a large task re-finding all 160 pitfall trap covers under the collapsed flaxes and the plant growth of other species that has occurred since the traps were last set a year previously. We set the pitfall traps on 23 October, and cleared and disarmed them the following day.



The same view of the flax monitoring site in October 2018 (left) and October 2022 (right). Images: Colin Miskelly

The most notable finding was the high catch rate of glossy brown skinks (19 caught = 20.4% of skinks caught). This compares with a mean catch rate of 5.7% during 2018–21.



Glossy brown skink, Mana Island, October 2022. Image: Annemieke Hendriks

Flax weevil monitoring

In order to research details of flax weevil life history, a large flax plant near the macrocarpas was encircled by a ‘weevil-proof’ fence in October 2020, and ten pairs of copulating weevils were introduced. The 20 weevils were marked with queen bee tags glued to their backs, and were left in ‘weevil MIQ’ for several months, with the expectation that they would lay numerous eggs there. Sixteen of the weevils were caught and removed between 28 November 2020 and 9 January 2021, with the other four presumed to have died (as no feeding sign was seen on the plant subsequently).

Nighttime monitoring of the plant has continued regularly since then (mainly by DOC volunteers Dallas Bishop & Geoff de Lisle), to determine when the next generation of weevils emerge (i.e. what is the interval of the larval stages, between egg laying and imagos emerging from pupal casings). Each new animal is tagged, so that we can determine how long flax weevils live as adults.

We undertook two 1-hour searches of weevil MIQ at night on 22 & 25 October 2022, finding five previously tagged flax weevils (and no new ones).

Repairs to weevil MIQ

The weevil MIQ fence had deteriorated since it was installed in October 2020 (using re-purposed gecko enclosure fencing materials). In order to prolong the fence’s integrity, we spent a full day adding another layer to the interior of the fence. While we were digging a trench to bury the footing of the

new cladding, Annemieke made the remarkable discovery of a weevil tag in the soil next to the fence (the tags are only a couple of millimetres in diameter). Even more remarkably, the tag was from a weevil seen alive (with both tags still attached) only 10 days earlier. Note that every weevil has two tags with the same number, and tags are replaced if one is lost.



Colin Miskelly attaching new (recycled) cladding to the inside of weevil MIQ fence, October 2022.
Image: Annemieke Hendriks

5-minute bird counts

We undertook 5-minute bird counts at the 20 marked stations in perfect, calm conditions on 22 October 2022. Each of us traveled in opposite directions, and so all stations were counted twice. All data have been entered in eBird / New Zealand Bird Atlas Scheme.

Robins were notably scarce on the island (one seen in 9 days, none recorded during 5-minute bird counts).

Lizard survey

We spent several hours investigating the extent of overlap between 'resident' McGregor's skinks and translocated northern spotted skinks on the shore platform from the woolshed south and around South Point to the south-west bay. Five McGregor's skinks were found in Landing Bay. However, our plans were thwarted once we progressed south of the wharf base. All of the driftwood that had previously been moved from the tideline to the shore platform in order to facilitate monitoring of these two large skink species had disappeared, as it had been repurposed to cover penguin nest boxes. This is a frustrating example of poor communication between research teams (and DOC) on the island.

No ngahere geckos were found during two searches of the release site.

Weeding

Weeding was not among our list of tasks to complete while on the island, but it was immediately evident that DOC is no longer attempting to control weeds on the island. We spent many hours hand-pulling more than 2000 weeds of seven species while on the island. These were mainly *Senecio glastifolius* (pink ragwort). This total compares with about 30 to 50 *Senecio glastifolius* hand-pulled per year by Colin during his four previous week-long October visits to the island.

The worst infestations were below the trig (1296 *Senecio glastifolius* and 5 tree mallow), the next headland east of the trig and the basin between the two (206 *Senecio glastifolius*, 4 tree mallow, 3 boneseed, 1 karo), the forest patch behind the workshop (134 karaka, 130 tree mallow, 1 *Pseudopanax* hybrid), scattered patches in Weta Valley (118 *Senecio glastifolius*, 6 tree lucerne, 1 karo), and above Hole-in-Rock (90+ *Senecio glastifolius* – see below). We gave up pulling out karaka seedlings behind the workshop after encountering several hundred seedlings growing under a tall canopy tree (just north of the stream). We also note two tall karo near the pied shag colony just south of here (one on the seaward side of the colony and one to the south of the colony).

In addition to the seedling grove from the mature karaka mentioned above, we are particularly concerned about weeds on the inaccessible bluff 200 m east of the trig – including a large flowering boneseed, at least two boxthorn, and several dozen flowering *Senecio glastifolius*. This site is exposed to the prevailing wind, and is the likely seed source for many of the scattered *Senecio glastifolius* on the island. Controlling weeds at this site is an urgent priority, and is something that only DOC could undertake, as it would require rope work.

We passed the weeding baton to Dallas Bishop & Geoff de Lisle on our departure on 27 October. They subsequently reported hand-pulling the following *Senecio glastifolius*: 7 along Woolshed track, 9 at start of Hole-in-Rock track, 90+ on slopes past Hole-in-Rock, 8 on Central track, 1 in Weta Valley.

Combined with our 2,045, this gives a total of 2,160 *Senecio glastifolius* hand-pulled on Mana Island during 19–30 October. A list of all weeds hand-pulled and their general locations can be provided if of use.

Incidental wildlife sightings

Red-crowned parakeet

Annemieke photographed a hybrid parakeet (predominantly red-crowned) that was associating with a yellow-crowned parakeet at the Petrel Station on 25 October 2022.



Hybrid parakeet (predominantly red-crowned) on Mana Island, October 2022. Image: Annemieke Hendriks

Ruru / morepork

Colin disturbed a roosting ruru during the day alongside the Weta Valley track on 25 October 2022. This was about 30 m before the far end of the track.

Kārearea / New Zealand falcon

Annemieke had three sightings (or 'hearings') of a kārearea on 22 October 2022. These were the only records during our nine days on Mana Island.

Riroriro / grey warbler

Riroriro have become scarce on Mana Island following the introduction of whiteheads and bellbirds. The only riroriro we noticed in nine days were a courting pair in Weta Valley, and an adult carrying food (i.e. caring for chicks) beside Central track, all seen by Colin on 25 October 2022.

Speargrass weevil

Annemieke noticed a speargrass weevil soon after we completed monitoring the flax plantings in the Lance's gully basin, about 40 m inland of the Tirohanga track (and 540 m south of the trig). Although only 150 m from where the weevils were released in 2006 & 2007, this is the first record of one inland of the Tirohanga track, and only the 14th speargrass weevil known to have been seen since their release on Mana Island (Miskelly & Hamilton 2022).



Speargrass weevil on Mana Island, October 2022. Image: Annemieke Hendriks

Reference

Miskelly, C.; Hamilton, J. 2022. Speargrass weevil (*Lyperobius huttoni*) status on Mana Island, February 2021. Wellington: Friends of Mana Island. Unpublished report. 20 pp.

31 October 2021