

Blumine Island/Oruawairua Flax Weevil and Giant Weta Monitoring

30th November – 5th December 2018



i) Oruawairua (Blumine Island)

Background

6 years ago, 74 flax weevils (*Anagotus fairburni*) and 100 Cook Strait giant weta (*Deinacrida rugosa*) were translocated from Maud Island and released over 2 sites across Oruawairua. One site was located on the North-western side of the island and the other on the Eastern side. A research study conducted by biologist Mark Anderson (completed last year) identified weevil feeding signs in both of the previous translocation sites. On the North-western release site, 109 weevils were collected and a further 16 were seen. Unfortunately, across the 3-day trip, no giant weta or weevils were found anywhere else on the Island. This year, a group of students from an Untouched World Blumine Island trip were interested in enhancing the biodiversity of the island and decided to investigate the locations in which the weevils and weta were translocated. This will be to monitor the progress of the invertebrates and if possible, identify how large the populations are and movement from the original translocation site they may have potentially moved.

Method

Keeping in conjunction with Mark Anderson's research, we used his method of weevil searching. Flax was searched at both sites at night. Each flax bush visible from the beach was scanned with a head torch and then leaves pulled apart to look for weevils hiding inside of the flax bush. This method ensures that weevils feeding on the leaves do not drop back into the base of the plant in response to activity and light¹.

Results and Observations

Site 1: North-western release site

On the 2nd of December, a small team of students and staff decided to do a preliminary weevil and weta check to confirm their presence on the island. Last year, no weevil or weta were observed in this location. Although we did not find any giant weta across the trip, within 5 minutes of searching in and around flax bushes on the beach, 9 weevils were sighted. As this was only a preliminary check, taking photographs and counting weevil species were the only procedures carried out.



ii) Weevil feeding on *Phormium tenax*.

A more structured weevil count was carried out on the 3rd of December later in the evening for around 50 minutes (22:00-22:50). On this occasion, the weather consisted of intermittent precipitation and we are unsure if climatic conditions

change the behaviour of the invertebrates thus hindering our monitoring process. Our small group counted the flax bushes from the original translocation site right to the end of each flax bush extending to the outer limits of the beach.

22 weevils were observed in total including a pair of engaged in the mating process. Of those 22, the weevils observed were many sizes indicating the presence of male and female species. Due to the variation in size, a smaller weevil of the genus *Lyperobates* may have possibly be counted. This is extremely promising to see that even though the total count from the monitoring process was fairly low (in terms of Mark Anderson’s research and the original translocated amount), significant evidence of breeding is supportive of the translocated environment and a potentially increasing flax weevil population. Unfortunately, on both occasions, no giant weta were found.



iv) Pair of breeding flax weevil.



iii) Coordinates of weevil population furthest from original translocation site.

	2nd of November (20 minutes) (Fine)		3rd of November (50 Minutes) (Raining)	
	Weevils Observed	Weevils Collected	Weevils Observed	Weevils Collected
North-western side	9	0	6	16

Interestingly, a trend indicated by our results suggested that the weevils have moved in a South-western direction along the beach from the translocation site. The outermost flax bush we could find weevils on (coincidentally the flax we also found the breeding pair on) is pictured here with coordinate. The flax near the outer reaches of the beach had little to no indication of any weevil sign let alone sign from other insects. Other than on a flax bush at (1703385/5442390) weevil sign was not a prominent anywhere else on the beach. Whilst walking the tracks especially near the Northern end of the island, stereotypical flax weevil sign was also observed however not check at night.

Site 2: Eastern release site

An attempt on the 3rd of December during the day was made to reach the 2nd translocation site to do a preliminary check that it was accessible. Previously, the original weevils and weta were dropped onto the site via maritime transport. We believed that we could access this location via a detour from Barracks Bay. This was not achieved, however; a more suitable entry may be viable through the use of a track heading East from North Ridge of by the coast at low tide. Due to this complication, we were unable to make it down to the Eastern release site to monitor the populations of the weta and weevils. Results collected by Mark Anderson identified the observation of 125 weevils in just 3 hours. These observations indicate the population on the Eastern release site is far larger than what was observed. Though our experiences this week, we believe that if in the future a group would like to monitor the weevil and weta population, they take the coastal route when the tide is out.

Conclusion

Within 6 years of a translocation from Maud Island, only one of the targeted species has been seen on Oruawairua. Information collected by this year's Untouched World Blumine Island 2018 group and significant research from biologist Mark Anderson has led us to the conclusion that a successful translocation of *Anagotus fairburni* was carried out. Within the space of 2 years, the flax weevil has been identified thriving in both translocation sites.

However, there has been no sign of *Deinacrida rugosa* since the original translocation. We believe that more resources should be directed around night searching for weta near both of the translocation sites when DOC are on the island. Stated in Anderson's paper; Foveaux Strait giant weta (*Deinacrida carinata*) live in the presence of weka so it is possible that the translocation has been successfulⁱⁱ. The existence of flax weevil after such a long time captures the essence of how biodiverse Oruawairua is and demonstrates it can be continually sustained into the future.

From here, we hope that future Blumine Island groups decide to continue our research through citizen science to track weevil populations across the island and to hopefully discover the presence of giant weta.

Recommendation of possible ideas in the future could be:

- Further monitoring of the weevil populations whilst other work is being completed on the island. From our work this week in conjunction with Mark Anderson, we have established that both sites can be reached via the surrounding coastline at low tide.
- Investigating the giant weta population along with weevil research to test the success of the original translocation.
- Investigating the weevil signs along the tracks around the North end of the Island. This would be to explore the possibility that the weevils may have moved inwards from the original translocation site.

All this work completed on Oruawairua from the 30th of November to the 5th of December would not have been possible without the help of the external community groups, Untouched World Foundation, sponsors, the New Zealand Department of Conservation, and most importantly, Mark Anderson. Without your help, we would not have been able to accomplish as much as we did regarding the flax weevil populations on Blumine. Your research is invaluable and with ours, we believe it can be used by future groups to continue the monitoring of *Anagotus fairburni*.

ⁱ Blumine Island/Oruawairua Flax Weevil Monitoring (5th -7th November 2017) courtesy of Mark Anderson

ⁱⁱ Sherley et al, Threatened Weta Recovery, 1988, page 26 (<http://www.doc.govt.nz/Document/science-and-technical/tsrp25.pdf>)

v) Stereotypical flax weevil feeding sign.



vi) Flax weevil feeding.