



Fieldwork Report

Egg Island Expedition June 2013

Background

Egg Island is an accessible offshore stack home to a large population of storm petrels. Madeiran storm petrels have around an eight day foraging trip duration so within a 10 day block the population will be quite closed and there should be limited movement on or off the island. Therefore within a 10 night block it may be feasible to gather enough information from ringing data to create a population index of the storm petrel population using Egg Island. This expedition was mainly

designed to test the feasibility of using this technique not only to gain a population index but also to gauge its effectiveness as a long-term monitoring technique for a species that is very difficult to monitor using conventional surveying techniques. The expedition also allowed the Marine team to conduct some breeding call playback trials as have been completed over previously breeding seasons. Through playing back different storm petrel breeding calls and recording their response to the different tracks it should be possible to indicate which populations of storm petrels the St Helena storm petrels are closely related to.

Aims

To gauge the effectiveness of mark re-capture techniques in establishing an index of the storm petrel population size on Egg Island.

To indicate which storm petrel population the St Helenian storm petrels are closely related to.

Methods

Birds were caught using a standard 5 shelf mist net either 30 or 40ft in length. Three net locations were used; one 40ft below the summit at the east end of the Island and one 30ft at the campsite and a 40ft on the gun platform towards the west of the island. The campsite and gun platform locations were run simultaneously whilst the summit location was ran alone. The ringing location was therefore alternated between the east and west of the island each night. Birds were extracted from the net and placed in cotton bags to be transported to the processing team. The processing team would fit each bird with a uniquely numbered metal ring and take various standardised biometric measurements before releasing it. Care was taken to ensure that the location where each bird was caught was also recorded. Mist nets were kept open for 5 hours a night where possible before closing and being packed away.

The playback trials followed the protocol set out by the RSPB; People would sit in a 5 meter circle with two speakers in the centre. Each trial would start with counting the background response (calls and visual flyovers) within 5m of silent speakers over two minutes. Each track would be played back (looped for two minutes) and the response recorded. A minute recovery gap was left between each

track. Each trial consisted of five tracks being played back. At the end of each trial another background rate (number of calls and flyovers with 5m of silent speakers) was recorded again.

Preliminary results

In total 1014 birds were processed, this included 96 brown noddies, two red-billed tropicbirds and 802 Madeiran storm petrels (Table 1). Nine nights of ringing were conducted in a row, night 7 (10th June) was cut short to 3.5 hours of ringing due to poor weather and sea conditions. Generally more birds were caught at the westerly locations however more net was used on those nights.



Of the eight controlled (birds originally ringed by visiting RSPB specialists)

Madeiran storm petrels three were originally ringed as adults in 2009, one was ringed as a juvenile in 2009 and one as a chick in 2009. Two were of an unknown age when ringed in 2012. Of the 60 re-trapped (birds originally ringed by the marine team) Madeiran storm petrels only 3 were between east and west locations, all 57 other re-traps were either east to east or west to west.

Table 1. Daily totals of birds caught during each night. (BRNO= brown noddy, MASP= Madeiran storm petrel, RBTB=red-billed tropicbird, CT= control, RT=re-trapped)

Day June	Location	New BRNO	RT BRNO	Total BRNO	CT MASP	New MASP	RT MASP	Total MASP	New RBTB	Total RBTB	Total Birds
4	West	25		25		69		69			94
5	East	24		24		81		81			105
6	West	3	6	9		103	8	111			120
7	East	4	5	9	2	88	1	91			100
8	West	6		6	1	117	8	126	1	1	133
9	East	9	3	12	4	64	5	73			85
10	West		1	1		43	9	52			53
11	East	5	4	9	1	85	6	92			101
12	West		1	1		84	23	107	1	1	109
Grand Total		76	20	96	8	734	60	802	2	2	1014

In total 14 playback trials were completed over one night. Two people counted birds calling in response and three counted the visual flyovers.

Discussion

The fact that over 700 new Madeiran storm petrels were ringed and the low nightly recovery rates suggest the population is much larger than was initially estimated. Given that only three of the re-trapped Madeiran storm petrels were recovered at alternate ends of the island to their original ringing location suggests that their movements on Egg Island during the breeding season are quite

localised. This will need to be taken into account when designing an appropriate methodology to estimate abundance and population index in the future.

Very few of the Madeiran storm petrels were observed in active moult whereas the majority of brown noddies caught were in active moult. The breeding season for brown noddies this year seems to have been completely out of sync with existing data that suggests their breeding season runs from November to March. From personal observation there was a clearly high mortality rate for near fledged chicks perhaps as a result of lack of food?

Setting the nets for 5 hours a night proved very successful in catching good numbers of birds however the number caught during the last hour was considerably less than the first two. Consideration needs to be given to the cost effectiveness of the expedition against the comfort and tolerance to the volunteers which without the expedition would not be possible when designing a regular monitoring expedition protocol.

The playback trials were successfully completed in one night however it was noted that conducting that many trials in one go proved quite gruelling. The amount of bird activity also considerably declined as the night went on, with a peak soon after sunset. It may therefore be wise to break up the trials in the future and to conduct a smaller amount of trials just around dusk each night to gain more consistent results.