

# Post-baiting rat monitoring on the Greene Peninsula



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## Introduction

Greene Peninsula is situated within Cumberland Bay East and covers an area of approximately 4,100 hectares, of which 21% is vegetated (SGHT 2010). The Nordenskjöld and Harker Glaciers effectively isolated the population of rats on the Peninsula from those in the adjacent Barff and Thatcher zones.

As part of Phase 1 of the South Georgia Heritage Trust's rat eradication, the Greene Peninsula was baited via aerial spreading of brodifacoum pellets (supplied by Bell Laboratories, Wisconsin, USA) between 1<sup>st</sup> and 4<sup>th</sup> March 2011. The toxin was delivered within cereal based pellets (13 mm in diameter and weighing 3 g each). The concentration of the active ingredient in each pellet (25 parts per million) is designed to kill most rats after consumption of a single pellet. Bait was deployed on three separate passes. Initially, 2 kg of bait per hectare was dropped over the entire non-glaciated area, secondly an additional 4 kg/ha drop was made along the entire coastline before a final pass delivered a further 4.5 kg/ha over all densely vegetated areas (SGHT 2010).

Post-baiting monitoring is a critical part of pest eradications, particularly in trial areas where eradication protocols are being tested. In February 2012, two experienced fieldworkers took the opportunity to visit Greene Peninsula to search for signs of surviving rats and deploy wax chew tags for further monitoring.

## Methods

Coastal and inland areas of the Greene Peninsula were searched from the 20<sup>th</sup> to the 23<sup>rd</sup> of February 2012, looking for sign that rats were present. Rat sign includes fresh feces, characteristically gnawed tussock, well-used runs and burrows. Although searches concentrated in areas with dense coastal tussock vegetation, tussock-acacia associations, festuca grassland and the edges of large rock outcrops or scree were also surveyed. GPS tracks were recorded as an indication of search area coverage (Fig. 1).



**Figure 1.** Monitoring for rat sign on the Greene Peninsula, February 2012. Tracks (red and black lines, see inset box) indicate area searched for rat sign, while squares show locations of wax tags.

During this period, peanut-flavoured wax chew tags (Pest Control Research, Christchurch New Zealand) were deployed for monitoring (Fig. 2). Tags were placed at 300–350 m intervals in the densely vegetated zone along the coast and at ~500 m intervals inland (reflecting the smaller area of likely rat habitat inland) (Fig. 1). The orange triangular tags were nailed to labeled red-topped wooden stakes (tag number WT ## at both ends of the stake), and placed to minimise disturbance by elephant seals and fur seals. Where possible, tags were located near old rat sign. Tag location was marked by GPS and site notes recorded.



**Figure 2.** The majority of the wax tags (orange triangle) were deployed in dense coastal tussock.

## Results

Combined, the two observers covered 55 km of survey track in vegetated areas. Although old rat sign were found, there was nothing to indicate that live rats are currently present on the Greene Peninsula. Desiccated/old feces were found in runs, under ledges or on moss cushions, and old runs and burrows were clearly unused, with vegetation regrowth and infilling with leaf litter.

A total of 46 wax tags were deployed around the Greene (see Fig. 1 and Table 1). Of these, 37 were placed along the Sudan Beach and Balsam Beach coasts, mostly at the edge of tussock stands by the beach. Nine tags were placed inland, primarily in patches of tussock on the slopes of Eosin Hill (~200 m a.s.l.).

**Table 1.** Greene Peninsula rat monitoring wax tags deployed February 2012.

Tag #	latitude	longitude	notes
WT01	-54.3229	-36.4486	coastal Sudan Beach (N of hut). 3m up bank from striped boulder
WT02	-54.3209	-36.4454	coastal Sudan Beach (N of hut). At inland edge of tussock flats on start of rise. On a tussock mound, behind a bog
WT03	-54.318	-36.4449	coastal Sudan Beach (N of hut). At the start of the bank behind a tussock
WT04	-54.3155	-36.4465	coastal Dartmouth Point. Right on the corner of the point.
WT05	-54.3263	-36.4568	coastal Sudan Beach, south of hut.
WT06	-54.3289	-36.4583	coastal Sudan Beach, south of hut.
WT07	-54.3317	-36.4601	coastal Sudan Beach. By river, true left bank
WT08	-54.3345	-36.4627	coastal Sudan Beach, on hillock.
WT09	-54.3375	-36.4642	coastal Sudan Beach, at edge of beach
WT10	-54.3405	-36.4661	coastal Sudan Beach, 3m from edge of beach
WT11	-54.3437	-36.4676	coastal Sudan Beach, at edge of beach
WT12	-54.3465	-36.4702	coastal Sudan Beach, at edge of beach by whalebone
WT13	-54.3487	-36.4741	coastal Sudan Beach, at back edge of tussock
WT14	-54.3524	-36.4762	coastal Sudan Beach. At big boulder at the edge of the beach.
WT15	-54.3551	-36.4793	coastal Sudan Beach, 5m back from the beach
WT16	-54.3582	-36.4803	coastal Sudan Beach, edge of beach on the glacier side of the river
WT17	-54.3613	-36.4824	coastal Sudan Beach, in tussock
WT18	-54.3636	-36.4849	coastal Sudan Beach, near end of tussock before moraine. Small stream on hill behind.
WT19	-54.3592	-36.3906	coastal Balsam Beach edge of beach.
WT20	-54.3565	-36.3931	coastal Balsam Beach edge of beach.
WT21	-54.3535	-36.3951	coastal Balsam Beach edge of beach.
WT22	-54.3507	-36.3971	coastal Balsam Beach edge of beach.
WT23	-54.3482	-36.4001	coastal Balsam Beach edge of beach, 2m into tussock
WT24	-54.3461	-36.4032	coastal Balsam Beach edge of beach.
WT25	-54.3435	-36.4063	coastal Balsam Beach on ridge 5m back from edge of beach.
WT26	-54.341	-36.4093	coastal Balsam Beach, 1m in from beach edge
WT27	-54.3384	-36.4123	coastal Balsam Beach, edge of beach
WT28	-54.3356	-36.415	coastal Balsam Beach, edge of beach
WT29	-54.3334	-36.4189	coastal Balsam Beach, edge of beach
WT30	-54.3309	-36.4217	coastal Balsam Beach, edge of beach
WT31	-54.3278	-36.4235	coastal Balsam Beach, edge of beach
WT32	-54.3249	-36.4262	coastal Balsam Beach, 1m in from beach edge
WT33	-54.322	-36.4275	coastal Balsam Beach, 1m in from beach edge
WT34	-54.319	-36.4291	coastal Balsam Beach ~2m from flat boulder at 'corner' in coast
WT35	-54.3246	-36.4536	coastal Sudan Beach just below hut. By stream, right-hand bank
WT36	-54.3244	-36.4493	inland Small flat-topped rock in festuca at edge of Eosin slope (old rat latrine under rock)
WT37	-54.3168	-36.4412	coastal North-facing coast; tussock-acaena cluster.
WT38	-54.3174	-36.4349	coastal North-facing coast; edge of a deep stream cut.
WT39	-54.3218	-36.4324	inland At top edge of NW-facing slope (old rat latrine on moss)
WT40	-54.3242	-36.4379	inland At top edge of NW-facing slope, near Eosin scree
WT41	-54.3281	-36.4326	inland East slope of Eosin, below outcrop (old rat feces)
WT42	-54.3323	-36.4284	inland East slope of Eosin, hard under rock outcrop (old rat feces nearby)
WT43	-54.3369	-36.4258	inland East slope of Eosin, top edge of tussock near outcrop (old rat feces)
WT44	-54.3349	-36.4512	inland West-facing slope above Sudan Beach. Near small river, up on outcrop among white-chin burrows
WT45	-54.3316	-36.4496	inland West facing slope; roughly SE of hut in high tussock, below outcrop (old rat feces nearby)
WT46	-54.3305	-36.4449	inland West facing slope; up deep stream gully on true right bank, next to rock outcrop

All tags placed 20<sup>th</sup>-22<sup>nd</sup> February 2012

## **Conclusions**

It is still too early to declare that the eradication of rats from the Greene Peninsula was successful but it is encouraging that the presence of rats is not evident a year after the bait was dropped.

We would recommend that all the tags are checked before the onset of winter and again in the early spring.

A single sub-adult pipit was observed on Sudan Beach, in the same area as others were seen in the late summer of 2011. Although pipits have apparently not recolonised the area yet, the presence of young birds in consecutive years bodes well for the future establishment of pipits on Greene Peninsula.

## **References**

SGHT (2010) Operational Plan for the eradication of rodents from South Georgia: Phase 1. South Georgia Heritage Trust, 21 December 2010.

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