



**Government of South Georgia and the South Sandwich Islands**

**Post-baiting rat monitoring on the Thatcher  
Peninsula**

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## **Introduction**

The Thatcher Peninsula is situated within Cumberland Bay and covers an area of approximately 5640 Ha, of which 1620 Ha is vegetated (SGHT 2010). In March 2011 the South Georgia Heritage Trust (SGHT) baited the area via aerial spreading of brodifacoum pellets (supplied by Bell Laboratories, Wisconsin, USA) in order to eradicate invasive brown rat populations. This was the largest baiting zone that was attempted in Phase 1 of the SGHT project.

During baiting operations, 2 kg of bait per hectare was dropped over the entire non-glaciated area of the peninsula. However, as rat densities are known to be highest at the coast, an additional 4 kg/ha drop was made along the entire 46 km coastline before a final pass delivered a further 4.5 kg/ha over all densely vegetated areas (SGHT 2010).

Although initial signs were that Phase 1 of the eradication was successful, systematic post-baiting monitoring is essential. This is particularly important in Phase 1 areas where eradication protocols are being tested ready for an island-wide operation in 2013-2014. The Thatcher Peninsula receives relatively high visitation in comparison to other areas on South Georgia because of the presence of King Edward Point research station and sign of rats immediately around the station would likely be noticed. However, base personnel travel in relatively restricted areas and therefore, in June 2012, a team of two field workers systematically searched coastal and inland areas for signs of surviving rats and deployed wax chew tags for further monitoring.

## **Methods**

Coastal and inland areas of the Thatcher Peninsula were searched for any sign of rats from the 27<sup>th</sup> May to the 25<sup>rd</sup> of June 2012. Rat sign includes fresh faeces, characteristically gnawed tussock, well-used runs and burrows. Searches focused on areas with dense coastal tussac vegetation as the presence of snow precluded differentiation between other habitat types. However, the extensive snow cover did make it possible to search for tracks both in coastal areas and when walking inland. Rat tracks are very distinctive and typically consist of two large prints from the rear paws and an impression of the tail. This is unlike any native animal.

To facilitate on going monitoring, peanut-flavoured wax chew tags (Pest Control Research, Christchurch New Zealand) were deployed. Tags were placed at approximately 250 m intervals in the densely vegetated zone along the coast and at inland sites that contained favourable habitat (such as nesting sites for burrowing birds) (Fig. 1; Appendix 1).

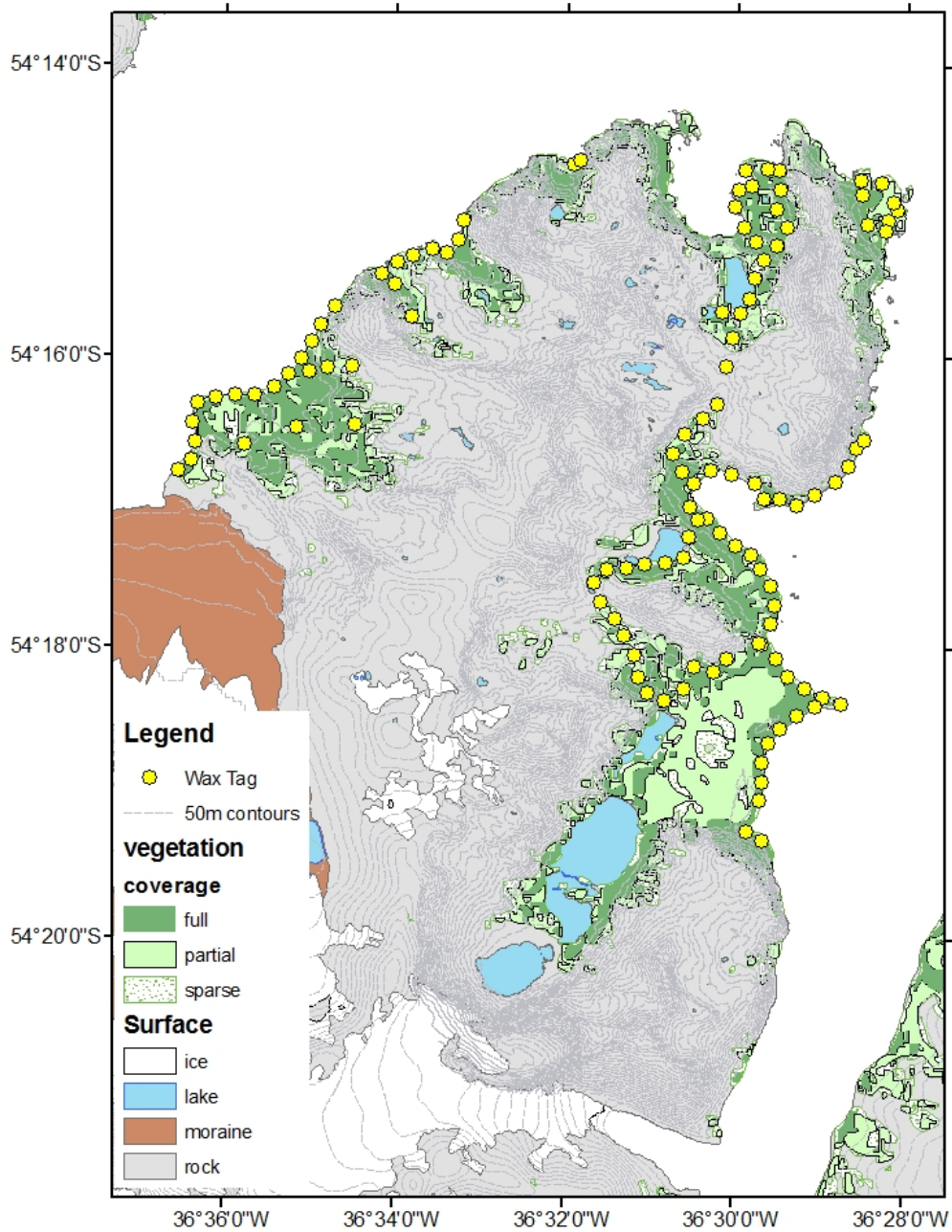


Figure 1. Map showing location of wax tags on the Thatcher Peninsula

The orange triangular tags were nailed to red or orange-topped wooden stakes. A permanent marker was used to write an identifying number on each tag (Fig 2). Tag location was marked by GPS and site notes were recorded.



Figure 2. Example of a wooden stake with a red painted top placed in tussac vegetation. The wax tag is out of view approximately 3-5 cm from ground level.

To confirm the efficacy of wax tags as a means of detecting rodents on South Georgia, two were placed at Corral, an area known to contain rats, and monitored on a weekly basis for signs of gnaw.

### **Results**

Over the 30 day period 119 wax tags were deployed on the Thatcher Peninsula and no sign of rats or tracks were found. All major areas of coastal tussac vegetation were covered including, Maiviken, Harpon, and the coast from Grytviken to Discovery Point. In addition some tags were placed at vegetated inland sites in the Bore Valley and around Gull Lake. Using boat support, it was possible to deploy tags at locations that are relatively isolated and difficult to access on foot including Curlew Cove and Sappho Point.

Within one week of deployment the wax tags placed at Corral had distinctive gnaw marks from rats consisting of two parallel grooves on the surface of the wax (Fig 3). Given the low densities of rats during the winter months, the presence of gnaw marks after such a short period is good evidence that the wax tags would be effective at detecting small remnant populations or newly established founder populations.



Figure 3. Example of a wax tag that has been gnawed by rats at Corral

### **Conclusions**

Although it is still too early to declare that the eradication on the Thatcher Peninsula was a success, the lack of any evidence of rats over a year after baiting is encouraging.

Although the aim of this project was not to undertake systematic surveys of habitat recovery post rat-baiting operations, whilst searching for rat tracks at Maiviken the tracks of a South Georgia pipit (*Anthus antarcticus*) were seen in the snow. This species is negatively affected by rats and indications that individuals are utilizing this recently baited area bode well for future re-establishment of breeding populations.

We recommend that all wax tags should be checked in late spring when numbers of rats in any remnant populations would be increasing. If rats are present in an area there would likely be distinctive gnaw marks on tags such as those seen on the tags at Corral (Fig 3).

Some of the areas in which the wax tags have been deployed such as Maiviken and the coast between Grytviken and Penguin River are frequently visited by personnel from the King Edward Point research station and so it may be possible to check some of the tags more frequently, albeit on an *ad hoc* basis. If evidence of rats is suspected (either from a wax tag or other sign) the following information should be reported to a Government Officer:

- Description of location (preferably with GPS waypoint)
- Description of sign (wax tag gnaw or other) preferably with a photograph
- Number of wax tag if applicable.

### **References**

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

### **Acknowledgements**

The trip was possible due to boating support from the British Antarctic Survey personnel based at King Edward Point, thanks to all those involved. The wax tags deployed during the trip were supplied by the South Georgia Heritage Trust.

Appendix 1: Table showing latitude, longitude and date of deployment for wax tags placed on the Thatcher Peninsula

Name	Latitude (dd.mm)	Longitude (dd.mm)	Date placed (yyyy/mm/dd)
TT1	-54.2798	-36.5106	2012/05/27
TT2	-54.2776	-36.5121	2012/05/27
TT3	-54.2755	-36.5099	2012/05/27
TT4	-54.2737	-36.5065	2012/05/27
TT5	-54.2719	-36.5038	2012/05/27
TT6	-54.2575	-36.4964	2012/05/27
TT7	-54.2599	-36.4974	2012/05/27
TT8	-54.2615	-36.4992	2012/05/27
TT9	-54.2615	-36.5028	2012/05/27
TT10	-54.2644	-36.5008	2012/05/27
TT11	-54.2677	-36.5019	2012/05/27
TT12	-54.2555	-36.4948	2012/05/28
TT13	-54.2538	-36.4922	2012/05/28
TT14	-54.2517	-36.4902	2012/05/28
TT15	-54.2497	-36.4923	2012/05/28
TT16	-54.2475	-36.4915	2012/05/28
TT17	-54.2452	-36.4917	2012/05/28
TT18	-54.2450	-36.4942	2012/05/28
TT19	-54.2452	-36.4983	2012/05/28
TT20	-54.2470	-36.4972	2012/05/28
TT21	-54.2474	-36.4997	2012/05/28
TT22	-54.2493	-36.5003	2012/05/28
TT23	-54.2518	-36.4985	2012/05/28
TT24	-54.2534	-36.4962	2012/05/28
TT25	-54.2828	-36.4944	2012/05/29
TT26	-54.2811	-36.4962	2012/05/29
TT27	-54.2800	-36.5009	2012/05/29
TT28	-54.2796	-36.5048	2012/05/29
TT29	-54.2811	-36.5081	2012/05/29
TT30	-54.2837	-36.5088	2012/05/29
TT31	-54.2851	-36.5056	2012/05/29
TT32	-54.2868	-36.5030	2012/05/29
TT33	-54.2881	-36.5000	2012/05/29
TT34	-54.2893	-36.4969	2012/05/29

TT35	-54.2909	-36.4951	2012/05/29
TT36	-54.2928	-36.4930	2012/05/29
TT37	-54.2950	-36.4922	2012/05/29
TT38	-54.2972	-36.4930	2012/05/29
TT39	-54.2995	-36.4946	2012/05/29
TT40	-54.3012	-36.4920	2012/05/29
TT41	-54.3032	-36.4896	2012/05/29
TT42	-54.3045	-36.4863	2012/05/29
TT43	-54.3055	-36.4827	2012/05/29
TT44	-54.3062	-36.4790	2012/05/29
TT45	-54.3066	-36.4841	2012/05/29
TT46A	-54.2852	-36.5073	2012/06/16
TT46	-54.2828	-36.4913	2012/05/30
TT47	-54.2835	-36.4879	2012/05/30
TT47A	-54.2873	-36.5091	2012/06/16
TT48	-54.2823	-36.4846	2012/05/30
TT48A	-54.2896	-36.5099	2012/06/16
TT49	-54.2809	-36.4804	2012/05/30
TT49A	-54.2902	-36.5137	2012/06/16
TT50	-54.2791	-36.4778	2012/05/30
TT50A	-54.2904	-36.5177	2012/06/16
TT51	-54.2769	-36.4764	2012/05/30
TT51A	-54.2908	-36.5213	2012/06/16
TT52	-54.2761	-36.4750	2012/05/30
TT52A	-54.2909	-36.5251	2012/06/16
TT53	-54.2925	-36.5276	2012/06/16
TT54	-54.2947	-36.5264	2012/06/16
TT55	-54.2966	-36.5236	2012/06/16
TT56	-54.2986	-36.5217	2012/06/16
TT57	-54.3008	-36.5196	2012/06/16
TT58	-54.3033	-36.5187	2012/06/16
TT59	-54.3051	-36.5171	2012/06/16
TT60	-54.3059	-36.5137	2012/06/16
TT61	-54.3047	-36.5100	2012/06/16
TT62	-54.3021	-36.5079	2012/06/16
TT63	-54.3026	-36.5041	2012/06/16
TT64	-54.3012	-36.5015	2012/06/16
TT65	-54.2994	-36.4953	2012/06/16
TT66	-54.3076	-36.4877	2012/06/22
TT67	-54.3091	-36.4910	2012/06/22
TT68	-54.3108	-36.4932	2012/06/22



TT69	-54.3130	-36.4946	2012/06/22
TT70	-54.3153	-36.4946	2012/06/22
TT71	-54.3174	-36.4950	2012/06/22
TT72	-54.3209	-36.4974	2012/06/22
TT73	-54.3219	-36.4944	2012/06/22
TT74	-54.2786	-36.6065	2012/06/23
TT75	-54.2765	-36.6057	2012/06/23
TT76	-54.2743	-36.6064	2012/06/23
TT77	-54.2721	-36.6053	2012/06/23
TT78	-54.2716	-36.6019	2012/06/23
TT79	-54.2712	-36.5981	2012/06/23
TT80	-54.2711	-36.5942	2012/06/23
TT81	-54.2703	-36.5904	2012/06/23
TT82	-54.2687	-36.5877	2012/06/23
TT83	-54.2670	-36.5851	2012/06/23
TT84	-54.2650	-36.5832	2012/06/23
TT85	-54.2630	-36.5813	2012/06/23
TT86	-54.2611	-36.5786	2012/06/24
TT87	-54.2684	-36.5834	2012/06/24
TT88	-54.2679	-36.5799	2012/06/24
TT89	-54.2678	-36.5752	2012/06/24
TT90	-54.2622	-36.5635	2012/06/24
TT91	-54.2585	-36.5669	2012/06/24
TT92	-54.2573	-36.5695	2012/06/24
TT93	-54.2558	-36.5663	2012/06/24
TT94	-54.2551	-36.5634	2012/06/24
TT95	-54.2544	-36.5596	2012/06/24
TT96	-54.2745	-36.5747	2012/06/24
TT97	-54.2748	-36.5861	2012/06/24
TT98	-54.2768	-36.5961	2012/06/24
TT99	-54.2799	-36.6091	2012/06/24
TT100	-54.2534	-36.5546	2012/06/25
TT101	-54.2549	-36.5568	2012/06/25
TT102	-54.2511	-36.5535	2012/06/25
TT103	-54.2446	-36.5319	2012/06/25
TT104	-54.2441	-36.5308	2012/06/25
TT105	-54.2508	-36.4704	2012/06/25
TT106	-54.2521	-36.4710	2012/06/25
TT108	-54.2497	-36.4688	2012/06/25
TT109	-54.2489	-36.4694	2012/06/25
TT110	-54.2479	-36.4755	2012/06/25

TT111	-54.2465	-36.4717	2012/06/25
TT112	-54.2462	-36.4758	2012/06/25
TT113	-54.2513	-36.4744	2012/06/25

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