ISLES OF SCILLY SEABIRD RECOVERY PROJECT

# MONITORING AND ASSESSMENT OF THE WIDER ECOLOGICAL IMPACT OF ISLAND RESTORATION PROJECT ON ST AGNES AND GUGH

2013 - 2016

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## Project Partners and Funders

**Seabird Recovery Project**
**LIFE Project: Scilly Isles LIFE project 11**
**LIFE+ Scilly Rat Removal: LIFE11 NAT/UK/000387**
**HLF Project: HG-11-06880**

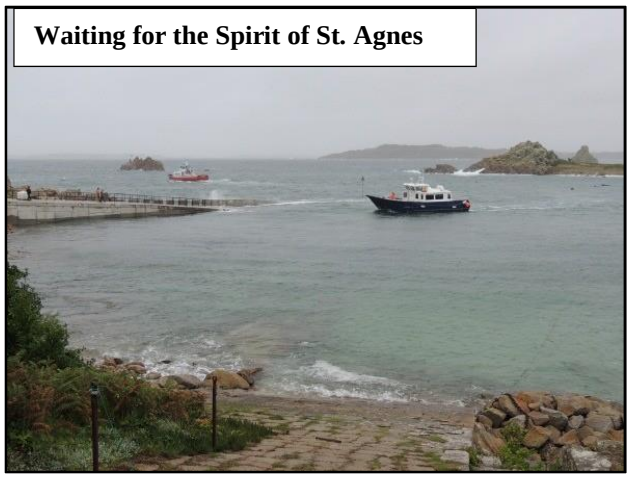
## CHAPTER 1. INTRODUCTION

The Isles of Scilly Seabird Recovery Project is a partnership project which aims to protect the seabirds in Scilly by keeping St Agnes and Gugh and the uninhabited seabird islands rat-free. Rats were widespread on St Agnes and Gugh prior to the start of the Project in 2013 but on 13th February 2016 these two islands were officially declared rat-free.

**Kat Biggs, Amy Horn-Norris and Simon Barnard**

Spalding Associates (Environmental) Ltd were contracted in 2013 to carry out baseline surveys on St Agnes, Gugh and Bryher to a defined methodology as part of the Isles of Scilly Seabird Recovery Project. Surveys were carried out of plants, rabbits, Scilly Shrews, and invertebrates, as these were the groups that might be affected by the removal of rats; fixed point photographic surveys were also carried out. Bird surveys were carried out by RSPB and volunteers. Training was given at this time to staff and volunteers on methodologies and identification techniques. Rats were still present at this time and their footprints were regularly seen during surveys for Scilly Shrew. The project aimed to compare wildlife communities before and after rat removal for each island, so monitoring continued in 2014, 2015 (some surveys only) and 2016, carried out by volunteers with some additional training by Spalding Associates. Reports were issued in 2013 and 2014 and this is the third and final report which summarises the Project results and makes suggestions for further work. The Isles of Scilly Seabird Recovery Project has the first properly resourced multi-taxa pre- and post-eradication ecological monitoring programme in the UK and, although the trend is improving, it is still the case that relatively few multi-taxa pre- and post-eradication surveys are carried out worldwide. Therefore much of the information and recommendations in this report can help shape the work carried out for future projects. The primary beneficiaries, the seabirds, are covered in a separate report

**Waiting for the Spirit of St. Agnes**



**Landing at St Agnes**

Bryher was chosen as the control site due its similar size to St Agnes and Gugh combined (129ha against 149ha) and the fact that it is one of the populated islands (the other main inhabited islands of Tresco and St Martin's are much larger). A control site is required so that trends in the

numbers of key species and species groups here can be compared to trends on Gugh and St Agnes where rats have been removed. If trends are similar on Gugh and St Agnes, but different on Bryher, then it is possible that rat removal is one of the causes of the difference. If the trends are the same across all three islands, or if trends are different between St Agnes and Gugh, then it is more likely that trends are independent of rat removal.

**Pitfall examination on St Agnes September 2106**

The project is based on surveys associated with four habitat types: European gorse scrub, maritime/coastal grassland, heathland and foreshore. The complete tranche of surveys were carried out on all three islands with the exception of rabbit surveys as rabbits are not present on Bryher. The methodology was defined before Spalding Associates became involved, but there were some slight changes in methodologies in the first year, most importantly in the mammal surveys, when it was agreed that Longworth traps were unsuitable for a project using volunteers. A summary of the Project specification is provided in Appendix 1.1. The general survey areas are shown on Maps 1.1, 1.2 and 1.3.

**Sorting invertebrates in 2014**

**Vegetation training 2014**

Before any surveys were carried out there was an initial meeting in the RSPB offices at Penzance to discuss and finalise the monitoring protocols and methodologies. There was a subsequent meeting on St Mary's between the Spalding Associates team and Jaclyn Pearson (the Isles of Scilly Seabird Recovery Project Manager) and David Mawer (Senior Conservation Warden, The Isles of Scilly Wildlife Trust). David had previously sent us maps showing the locations of Least Adder's Tongue Fern and Dwarf Pansy, so that we could avoid disturbing these plants, in particular when we were setting pitfall traps. We had also received maps showing the location of the scheduled monuments on the islands; we had put these locations onto Google Earth maps so that we could more easily locate the boundaries on the ground. We also had the CEC Phase I habitat maps which were useful in determining

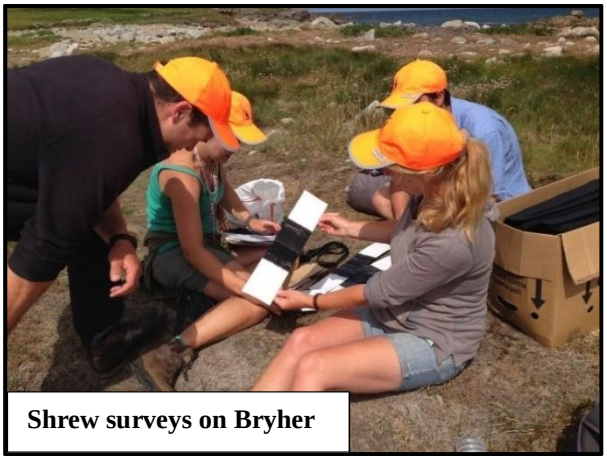
**Shrew surveys on Gugh May 2016**

where the different habitat types were located on the islands. We agreed to provide maps showing the positions of the pitfall traps to David. David agreed to ask ERCCIS if they could provide the maps from their Landcover Project and we subsequently obtained these.

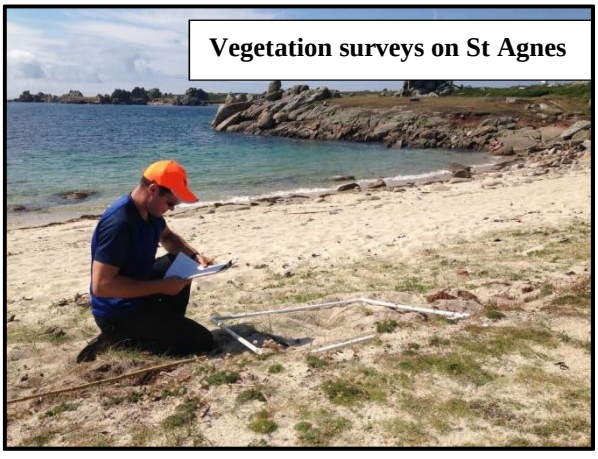
**Bird survey by Jaclyn Pearson**

It should be noted that the surveys are designed to be easily replicated by volunteers and are therefore designed to be simple to replicate. There are for example no attempts to estimate population size for Scilly Shrew or any of the invertebrates (e.g. by mark-release- recapture).

After the first survey, a detailed report was submitted on 7th June 2013 to the Project Steering Group with notes of results and issues to consider, so that we could outline the strategy carried out and refine the survey methodology. We received comments in return. In particular we suggested that it was not necessary to carry out the plant quadrat surveys 4 times a year, as there will be no obvious changes in this time and we therefore suggested two surveys a year, one in late spring/early summer (May) the other in autumn (September). We also suggested that that the fixed point photography would again be reduced to two surveys a year for the same reason. It was agreed that we would reduce the landscape photography to two surveys, but the plant surveys would be repeated four times a year as originally agreed in order to monitor any fine changes in habitat structure and species composition.



**Shrew surveys on Bryher**



**Vegetation surveys on St Agnes**

The team from Spalding Associates consisted of the following people:

- Adrian Spalding – Project Manager
- Kat Biggs – Project Officer
- Catriona Neil – plant specialist
- Simon Barnard – mammal specialist
- Colin Hicks – botanist, GIS specialist

The team visited the islands of St Agnes, Gugh and Bryher in the summer of 2013 on 20th – 24th May, 27th – 31st May, 17th – 21st June, 15th – 19th July and 16th – 21st September. In March 2014 Adrian Spalding gave presentations on the survey results to stakeholder groups and in May 2014 and again in 2016 Catriona Neil provided training on plant identifications and quadrat survey techniques. The Project was originally designed to finish in 2015 but it was agreed that an extra year might more clearly show any changes due to the rat removal, so it was decided that the final survey would be in 2016. The full tranche of surveys

were repeated by volunteers in 2014 and 2016. A subset of surveys was carried out in 2015, consisting of shrew, rabbit and landscape photograph surveys.

The team received considerable help from Jaclyn Pearson and several volunteers, including Amy Horn-Norris, Ed Snell and Helen Brandes. There was also considerable help from extra bird surveyors: Dave Flumm, Paul St Pierre, Jaclyn, Bob Dawson, Amy Horn-Norris and Darren Mason. Jaclyn arranged equipment storage in a large barn on Barnaby Lane (thanks to John and Dreda Judson), which was vital in ensuring the smooth running of the project, and organised help with transport around the islands. In subsequent years, Jaclyn was assisted by Holly Paget-Brown (Project Assistant) and Lydia Titterton (IOSSRP Project Officer).

The monitoring project was designed to be carried out by volunteers, led by Jaclyn Pearson. 54 volunteers were deployed through 2014, 2015 and 2016, carrying mammal traps, establishing pitfall traps, identifying plants, sorting through trays of invertebrates and carrying out bird surveys. They did an excellent job collecting a data set which is as comprehensive as the data collected in 2013 and which can be used to establish detailed comparisons between 2013, 2014 and 2016.

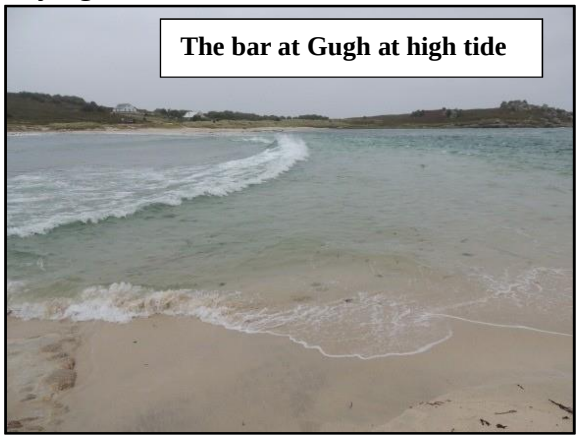
| **Project volunteers in 2016** | | | | | |
|---|---|---|---|---|---|
| Chloe Airey | Colin Day | Sarah Haver | Myriam Lynch | Luke Phillips | Lucia Watts |
| Ed Anderson | Lindsey Death | John Headon | Ed Marshal | Martin Prothero | Olly Watts |
| Martin Auld | Neil Duffield | Vickie Heaney | Joanne McPhee | Hazel Reading | Amie Wheeldon |
| Tom Basset | Rebecca Etheridge | Kirsty Hibbert | Maureen Mitchell | Claire Russell | James Woodin |
| Amy Bosworth | Adam Falconer | Amy Horn-Norris | Pete Mitchell | Will Scott | |
| William Brown | Tristan Fletcher | Clive Knapman | Ross Packman | Will Stubb | |
| Liam Butterfield | Lena Grannelle | Dilys Knapman | Doug Page | Stuart Taylor | |
| Lindsey Butterfield | Chris Griffin | Natasha Laverick | Tamsin Page | Matthew Tickner | |
| Carole Cilia | Norman Harris | Zoe Laverick | Abbie Pailing | Val Tingey | |
| Alex Cropper | Sarah Harris | Lorraine Leicester | Rihanna Pearce | Nick Tomalin | |

Spalding Associates ordered and obtained all the necessary equipment as below. After the first surveys, we ordered additional mammal ink traps - Gotcha Traps from Warren Agnew in Wellington New Zealand. Despite their name, these are not traps but smaller mammal tunnels used with monitoring cards that record the presence of mammals and other small creatures through their footprints. They are lightweight, smaller than the British mammal tunnels and therefore much easier to use – in particular they do not catch the wind when being transported. These tunnels arrived before payment was received ready for use on Bryher, which meant that the larger traps did not have to be transported across by boat. These traps cost 958.63 NZD, and represent a contribution by Spalding Associates to the success of the project.

| Equipment | Number |
|---|---|
| | |
| Tape measure | 2 |
| Quadrat | 2 |
| Metre ruler | 2 |
| Garmin eTrex20 GPS | 2 |
| Ink-traps | 40 |
| Longworth traps | 10 |
| Pitfall traps | 960 |
| Pitfall lids | 480 |
| 13mm chicken wire mesh | 6 sheets |
| Propylene glycol | 12 litres per survey |
| Industrial methylated spirits for invertebrate storage under licence | |
| Storage bottles for samples | 48 per survey |
| Clear storage bottles for Propylene glycol | 1 |
| Trowels | 2 |
| Bulb planters | 2 |
| Plant guides Poland & Rose | 2 |
| BSBI grass key | 1 |
| Ant key | 1 |
| Water carrier | 1 |
| Funnel | 2 |
| White trays | 2 |
| Digital camera with GPS | 1 |
| Gloves | |

Normal office hours are not appropriate when surveying on these islands!

The logistics were challenging. It was important to ensure that all equipment was carried with us and nothing was left behind, as going back to collect equipment took a long time. All equipment generally had to be carried by hand, and so several trips would be made to collect mammal traps etc. Access to Gugh and boat travel was limited by tides so timetables had to be carefully planned. We had great co-operation from the following people and businesses: Bryher Boats, Covean Guest House, the Isles of Scilly Steamship Company, St Agnes Boating and Troytown Campsite.



**The bar at Gugh at high tide**

Another monitoring tranche may be beneficial after 5 years when trends may be more conspicuous. The most appropriate groups to monitor would be the Scilly Shrew, together with rabbits, landscape photographs and selected groups of invertebrates such as Lawn Hopper.

The team at Spalding Associates feel privileged to have been involved with this Project and are happy to have contributed to its success.