



Seabird Monitoring & Research Project Isles of Scilly 2014



Playback survey for Manx shearwaters, Shipman Head Bryher 23.05.14

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Summary of Results

Productivity Monitoring

- **Kittiwake** Reduced from 6 sub-colonies in 2006 to just one in 2014, numbers down by 75% since 2006. 31 chicks fledged from 62 nests at Turk's Head sub-colony St Agnes.
- **Herring Gull** Samson breeding success (0.50 ch.pr.) further reduction in numbers settling $n = 39$ down by half since 2008. Gimble Porth colony deserted. Hugh Town slight increase in number of nests ($n = 14$) fledged 1.25 ch.pr.
- **Fulmar** Approx. 20% of breeding areas surveyed. Numbers stable at Daymark ($n = 52$) and increased at Menawethan ($n = 44$); but low breeding success at both sites 0.16-0.17 chicks per pair.
- **Common Tern** All sub-colonies counted – 19 nests North hill Samson and 12 nests Green Island, both sites late laying but 13 chicks fledged (first since 2009)

Monitoring Breeding Numbers

- **Storm petrel** Study beach on Annet totally destroyed by winter storms.
- **Annet breeding numbers** Overall numbers similar to last year – 96 pairs shag, 205 Greater black-backs and 38 fulmar.

Post-rat eradication Data St Agnes & Gugh

Manx Shearwater productivity

- Minimum 10 chicks fledged from St Agnes & Gugh (star-gazers observed)
- Little sign of possible chick fledging at sites with rats (Bryher, Peninnis)
- Reduction in numbers at St Helens – though still 3x 2006 count

St Agnes full survey

- Herring Gull numbers further reduced, Kittiwake increased (Daymark birds)
- Increase in Manx shearwater numbers including new area nr Porth Askin
- Storm Petrel all suitable habitat surveyed, no breeding recorded

Gugh full survey

- Herring gull numbers further reduced to less than half 2006 number
- Lesser black backs population stable but again less than half 2006 number
- Oystercatcher breeding success apparently increased on Gugh

Isles of Scilly Seabird Monitoring & Research Project 2013-15

The last full SPA count of breeding seabirds in Scilly was conducted in 2006. With the next survey confirmed for 2015, this project adds to various breeding data recorded to add to the picture in the interim period and to get an idea of the causes of the major species trends observed. Productivity data for key seabird species have been collected at key sites across the islands annually since 2006, as well as the continuation of regular counts of seabird breeding numbers on Annet. Data on seabird distribution and breeding success on St. Agnes and Gugh was also collected. These islands now shown no sign of rat presence throughout the 2014 breeding season so comparison with data collected in the years preceding rat eradication is now possible.

The fieldwork was conducted between April and September 2014 with the help of Isles of Scilly Wildlife Trust and Seabird Recovery Project employees and volunteers. Guided by the Isles of Scilly Seabird Conservation Strategy this work forms part of the Seabird Recovery Project and is funded by the Heritage Lottery Fund, the EU LIFE programme and the Isles of Scilly Wildlife Trust in collaboration with the RSPB and Isles of Scilly Bird Group.

Data collected

Productivity Monitoring

- Productivity of Herring gulls; Samson & Hugh Town
- Productivity of Kittiwakes; all sub-colonies
- Productivity of Fulmars; Menawethan & Daymark
- Productivity of Common terns; all sub-colonies

Monitoring Breeding Numbers

- Annet Counts - annual count of breeding seabirds on Annet
- Sample beach on Annet (rat-free) surveyed for breeding Storm Petrel

Seabird breeding baseline data St. Agnes & Gugh

- Manx Shearwater playback surveys and monitoring of productivity on St Agnes, Gugh, Bryher, Peninnis & St Helen's
- Storm Petrel playback survey of suitable habitat on St. Agnes, Gugh & Bryher
- Count of all breeding seabirds (not already covered above) St. Agnes & Gugh
- Monitoring of lesser black-backed gull productivity on Gugh

Productivity Monitoring Species Accounts

Between April and September 2014, productivity for the species listed were collected using standard methods as set out in *The Seabird Monitoring Handbook* (Walsh et al. 1995¹). Further notes on methodology for individual species are outlined in the species accounts below.

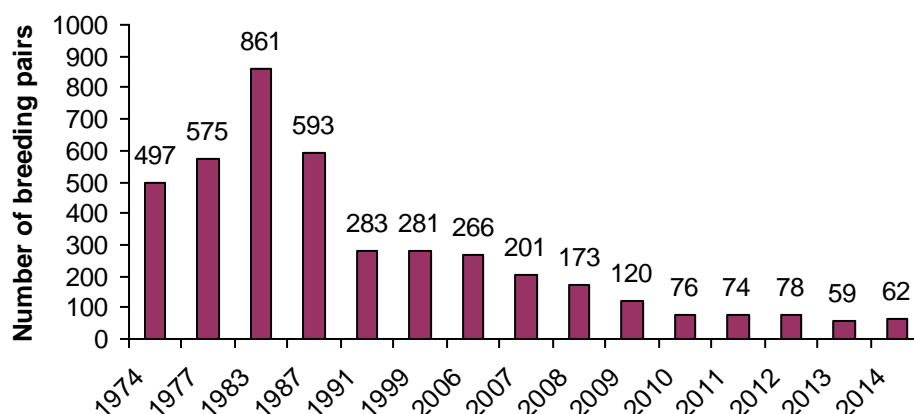
Kittiwake *Rissa trydactyla*

In early/ mid-June Apparently Occupied Sites were counted and mapped using digital photography. The colony was then visited at regular intervals and nest histories recorded. Chicks were considered fledged/ capable of flying 35 days after hatching.

The overall numbers of kittiwakes breeding in Scilly was similar to last year, but still down by 75% on 2006. The 62 birds attempting to breed in 2014 were all at the one sub-colony below the Turk's Head St Agnes. This represents a loss of 6 sub-colonies since 2006. The Turks Head birds were successful in raising 31 chicks from 62 nests, averaging 0.5 chicks per pair.

SUB-COLONY SITE	1999	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gugh	155	131	69	50	41	26	0	0	0	0
Gimble Porth, Tresco	54	37	39	30	29	0	0	0	0	0
St. Helen's	7	36	31	35	18	2	0	0	0	0
Samson North Hill	28	25	26	21	9	0	0	0	0	0
Samson South Hill	10	22	15	10	0	0	0	0	0	0
St. Martin's, Daymark	27	15	21	27	22	47	69	54	21	0
Turk's Head, St. Agnes					1	1	5	24	38	62
Total Breeding Pairs	281	266	201	173	120	76	74	78	59	62
Total Chicks Fledged	-	0	0	0	1	54	9	0	36	31

Kittiwake breeding numbers 1974-2014



Herring gull *Larus argentatus*

The sites selected for productivity monitoring for this species are all discrete colony locations where chick wandering is prohibited due to high backed beaches and/ or isolated habitat in which to disperse. All nests were mapped from accessible vantage points during incubation and the colony then observed at roughly weekly intervals. A few days before the first chicks

¹ Walsh PM, Halley DJ, Harris MP, del Nevo A, Sim IMW & Tasker MC (1995) *Seabird monitoring handbook for Britain and Ireland*. JNCC/ RSPB/ ITE/ Seabird Group, Peterborough.

were due to fledge, all the large chicks (3+ weeks) visible were counted and productivity estimated as the number of large chicks divided by the number of nests. A separate note was made of small chicks and nests with apparently incubating adults and these nests re-checked later and totals adjusted accordingly.



Herring gull chick hiding among the boulders on Samson

In 2014, the numbers settling on the Samson study beaches were reduced compared to 2013 and are now down to half that of 2006. Breeding success was recorded at 0.56 chicks per pair, which is similar to previous years; still just below the 0.66 success needed to support a stable colony. The Gimble Porth colony on Tresco is deserted altogether now. This is a significant loss - in 2006 this site supported 54 pairs of herring gull, 4 lesser black-backs and 37 breeding pairs of kittiwake. Numbers settling in Hugh Town were slightly up on last year and the birds were successful in raising young.

SITE	2008	2009	2010	2011	2012	2013	2014
Samson	0.30 (n=84)	0.66 (n=73)	0.68 (n=63)	0.54 (n=71)	0.46 (n=56)	0.56 (n=55)	0.50 (n=39)
Gimble Porth,	0.48 (n=50)	0 (n=41)	0 (n=17)	0 (n=9)	0 (n= 3)	0 (n=2)	Deserted
Hugh Town	1.29 (n=7)	1.67 (n=6)	1.86 (n=7)	2.25 (n=8)	1.4 (n= 10)	1.22 (n=9)	1.25 (n=14)

Fulmar *Fulmarus glacialis*

Discrete cliff-side colonies on Menawethan and the Daymark St. Martin's, were monitored as in previous years, from the sea. These sub-colonies can be viewed by boat in their entirety, safely and without disturbance. Three visits 5-10 days apart late May to mid-June were used to assess the number of Apparently Occupied Sites (those where an egg or apparently incubating adult is recorded on at least two consecutive checks). These sites were then checked again mid-August for the presence or absence of a chick – all large young (including downy young about adult size) were assumed to fledge.

Numbers settling were similar to previous years at the Daymark and increased by 60% on Menawethan in 2014. Breeding success however was low at both sites with only 16 chicks fledged from 96 nesting attempts. As in previous years this poor success was repeated elsewhere on the islands, with very few chicks seen to fledge from Round Island or Annet (W. Wagstaff., & pers. obs.)

	Menawethan	Daymark	Total
2006	0.25 (n = 44)	0.20 (n = 46)	90
2007	0.30 (n = 41)	0.49 (n = 45)	86
2008	0.35 (n = 37)	0.28 (n = 46)	83
2009	0.43 (n = 33)	0.64 (n = 36)	69
2010	0.39 (n = 30)	0.45 (n = 51)	81
2011	0.29 (n = 24)	0.25 (n = 49)	73
2012	0.56 (n = 25)	0.39 (n = 59)	84
2013	0.52 (n = 27)	0.17 (n = 54)	81
2014	0.16 (n = 44)	0.17 (n = 52)	96

Common tern *Sterna hirundo*

This was at last a good year for the common terns. After 4 years of complete breeding failure on the islands they managed to fledge at least 13 young from a total of 31 nests despite not beginning to lay until mid-June (first egg recorded 17th June 2014). The nests were spread between the usual breeding site at Green Island and the north hill of Samson. This second site is secure from tidal inundation which has destroyed nests in the past but subject to possible human disturbance. In association with the wildlife trust, signs were placed either side of the path on the approach to the nests (see below) to help mitigate this.

Year	Productivity	Notes
2003	0.43 (n = 86)	
2004	0.59 (n = 76)	Majority of nests on North Hill, Samson
2006	0 (n = 78)	Young inundated by storm tide, Green Island
2007	0 (n = 1)	Only one breeding attempt recorded, Annet
2008	0.26 (n = 51)	Green Is. 41 nests; Peasehopper 10 nests
2009	0.39 (n = 52)	Green Is. 51 nests; Annet 1 nest
2010	0 (n = 0)	Birds settling on Green Is. But site abandoned before laying
2011	0 (n = 10+)	Late settlement, then Green Is. Site inundated by storm tide
2012	0 (n ≤ 10)	Late settlement, some eggs lost to storm tide Green Island
2013	0	No breeding attempts recorded
2014	0.42 (n = 31)	3 chicks from 12 nests Green Is.; 10 from 19 north hill Samson



Signage north hill Samson

Monitoring Breeding Numbers

Storm petrel *Hydrobates pelagicus*

Since 2010 the number of Apparently Occupied Sites at a study beach on Annet has been recorded annually using diurnal tape-playback. The study area is located at the South end of the island, in boulder beach between Smith's Carn and Minmow. The number of AOSs recorded here has been relatively stable, although the confidence intervals on playback response results are relatively large. However in 2014 this beach was found to have been totally destroyed in the February storms, so that most of the boulders had been removed and the reduction in depth exposed most of the previous breeding sites (see photo below). As a result only two responses were recorded. During the count at the end of May numerous storm petrels were heard singing beneath boulder beach elsewhere on the islands (prompted by footfall and rocks scraping together) and it does not appear that this low study count indicates an actual drop in the Annet population.



Annet storm petrel study beach taken in March 2014 – lighter pinkish rocks are all newly exposed and top layers of rocks with established lichen cover gone

Year	Number AOSs	Notes
2000	49 (\pm)	17 responses x 2.86
2006	37	13 responses x 2.86
2010	40	14 responses x 2.86
2011	34	12 responses x 2.86
2012	52	18 responses x 2.86
2013	54	19 responses x 2.86
2014	6	2 response x 2.86

Annet breeding numbers

Following a main count at the end of May, plus a boat count for fulmars and a later check for lesser black-backed gulls, the overall numbers of birds recorded breeding on Annet in 2014 were similar to the last few years. The numbers of smaller gulls is now much reduced compared to 2006 and before. As in 2013 the shag population appeared much healthier with an average clutch size of 2.61 eggs and just 6% of nests empty (cf. 57% in 2012).

Year	SH	GBBG	LBBG	HG	RAZ	FUL	COT	TOTAL	OYC	RPL
2000	209	137	517	42	4	21	1	931		
2001										
2002		171	215	7	4					
2003	150	164	18	17	0	45	0	394		
2004	159	197	7	32	2	44	0	441	5	
2005										
2006	177	187	281	24	4	37	0	710		
2007	140	88	0	5	1	37	0	272	5	
2008	164	47	(5)	4	3	48	0	271	6	
2009	154	168	54	7	7	43	0	433	6	
2010	198	213	76	11	2	40	0	540	7	1
2011	115	180	27	5	4	37	0	368	4	2
2012	107	177	32	8	2	49	0	375		
2013	99	208	6	4	1	36	0	354	5	0
2014	96	205	10	5	1	38	0	355	9	1

SH – shag; GBBG – great black-backed gull; LBBG – lesser black-backed gull; HG – herring gull; RAZ – razorbill; FUL – fulmar; COT – common tern; OYC – oystercatcher; RPL – ringed plover.

Data St Agnes & Gugh – no rat sign in 2014

Manx shearwater *Puffinus puffinus*

Apparently Occupied Burrows were identified during the incubation period using diurnal playback and then visited periodically through July and August to check for activity. In the majority of cases in Scilly burrows have been found to be too long or convoluted to check adequately by hand. A burrow-scope was burrowed from Lundy island but this proved unsuccessful too. Following advice a new model has been purchased for trial in 2015. Unable to view down burrows, any evidence of possible fledging success has been recorded in previous years, including feathers, guano and broken vegetation near the entrance, as well as nesting material retrieved from down the burrow after fledging. Evidence of rat presence around burrows, including sightings, has also noted. In addition evening visits on calm moonless nights in late August early September were made in 2014 to look for any 'star-gazing' youngsters.

	Gugh	Wingletang, St. Agnes	Shipman Head, Bryher	St. Helen's	Peninnis	Annet
2000	22	5	12	5	0	
2006	9	8	13	9	0	
2007	8	5	-	-	-	
2010	6*	3*	-	-	4	
2011	13	10	-	39	7	
2012	16	8	-	-	4	
2013	17	5	12	-	2	(21)
2014	15	9	12	27	4	(20)

*AOBs recorded mid-June, likely to be an underestimate (Annet 2013-14 only a sample of total)

The big news this year is that a minimum of 10 chicks were recorded at night at or outside burrow entrances on both St Agnes and Gugh. This is the first time we have had definite confirmation of successful fledging on these islands in living memory.

There was little sign of any fledging success at Peninnis and Bryher where rats are present. In many cases there was significant evidence of rat presence later in the season (mainly droppings in burrow entrances). Again at Shipman Head there was a lot of digging around many of the burrows, since the damage was quite extensive and no rabbit droppings were observed, this was probably done by a dog or dogs.

The number of apparently occupied burrows recorded on St Helens was reduced compared to 2010, though still up on 2006. Recent visits by Wildlife Trust rangers suggest that rat incursion may be at play again here.

St Agnes full survey

A full survey of all seabird species was conducted on St. Agnes in 2014 as in the two previous years and is included with data from the last two full SPA counts in the table below. Herring gull continue to be low, but there was a slight increase in lesser black-backs nesting. Kittiwake numbers increased as discussed before and wader numbers were stable. The number of apparently occupied Mans shearwater burrows increased slightly including colonisation of a new area near Porth Askin. All suitable breeding habitat for storm petrel across St. Agnes was surveyed using tape-playback during peak incubation; no responses were recorded.

	FUL	MX	SH	LBBG	HG	GBBG	KIT	COT	SP	Total	RPI	OYC
2000	0	5	0	2	25	0	0	3	0	35	-	-
2006	0	8	0	0	15	1	0	0	0	24	-	-
2012	0	8	0	8	61	0	24	0	-	101	2	9
2013	2	5	0	8	32	0	38	0	0	85	1	8
2014	3	9	0	16	27	1	62	0	0	118	1	10

MX – Manx shearwater; KIT – kittiwake; SP – storm petrel; RPI – ringed plover; OYC – oystercatcher.

Gugh full survey

A full count of breeding seabirds on Gugh in 2014 revealed further decreases in the number of herring gulls nesting here, with numbers reduced to less than half the 2006 total. Fledging success of oystercatchers was apparently increased in 2014 with a minimum of 8 large chicks observed on the South Col of the island where usually very few if any are recorded.

	FUL	MX	SH	LBBG	HG	GBBG	KIT	COT	SP	Total	RPI	OYC
2000	2	22	0	1123	159	3	155	0	0	1464	-	-
2006	3	9	0	875	69	4	131	0	0	1091	-	-
2012	4	16	2	361	53	10	0	0	-	446	0	7
2013	1	16	0	418	51	7	0	0	0	493	0	10
2014	5	17	0	411	30	5	0	0	0	468	0	10

The lesser black-backed gull colony was a similar size to last year, though again reduced by half on the 2006 total. Fledging success was similar to previous years with the large colony on the top of the South Col fledging approximately 0.57 chicks per pair which approaches the value needed for stability.

Year	LBBG	Productivity Estimates
2012	361	Approx. 180 chicks fledged from 262 nests South Col top colony (0.69 ch/pr); minimum 19 chicks fledged from 65 nests lower rocks colony Cuckold's Carn (0.29 ch/pr).
2013	418	Minimum 103 chicks fledged from 355 nests South Col top colony (0.29 ch/pr)*; minimum 32 chicks fledged from 48 nests lower rocks colony Cuckold's Carn (0.67 ch/pr).
2014	411	Approx. 185 chicks fledged from 325 nests South Col top colony (0.57 ch/pr); minimum 28 chicks fledged from 70 nests lower rocks colony Cuckolds Carn (0.40 ch/pr)

* High vegetation means this count was probably an under-estimate

Discussion & Recommendations

2014 was at last a reasonable year for common terns. Although numbers are still greatly reduced compared to 2006 and before, in 2014, after 4 years of complete breeding failure, they managed to fledge as many as 13 chicks from 31 nests. In particular, 19 pairs nested on the North hill of Samson. This site was last used in 2004 and is to be encouraged in comparison to Green Island which carries significant flood risk. Accordingly informative signage to help reduce disturbance was employed.

The kittiwakes at the Turks Head colony on St Agnes also had a relatively good year, fledging an average of 0.54 chicks per pair. This is now the only nesting site for this species in Scilly. Again this overall decline is in line with regional trends, where the loss of birds from southern English colonies is in the region of 44%. The Isles of Scilly also lies towards the southern edge of the species range and they have recently been lost as a breeding species from the Channel Islands.

The worrying decline in herring gull numbers continues and only the small Hugh Town sub-colony shows fledging success high enough to maintain a stable population. Fulmar productivity was particularly low in 2014 also and this is in line with regional trends for a reduction in numbers of this species in recent years. Annet numbers appeared stable in comparison to recent years.

The significant finds this year relate to the removal of rats from St Agnes and Gugh over the winter of 2013/14. Although not officially 'rat-free' yet, there has been no sign of rats on either island since well before the beginning of the breeding season in 2014. The 10 chicks recorded 'star-gazing' at burrow entrances on St Agnes and Gugh in August and September 2014 represent a breeding success of 0.42 chicks per pair minimum. This is the first definitive proof of breeding success at these sites and comparable to breeding success recorded elsewhere ranging from Skomer & Bardsey 1986-2004, 0.56 and 0.81 ch/pr respectively² and on Lundy 0.62-0.76 ch/pr recorded in 2007.³ The increased numbers of large oystercatcher chicks observed on Gugh in 2014 is also a probable result of rat removal. Conversely the reduction in numbers of apparently occupied Manx shearwater burrows recorded on St Helens may be a result of rat incursion and predation at this site.

The full SPA count scheduled for 2015 will provide valuable insights into the fortunes of the various seabirds breeding in Scilly and shed light on whether reduction in numbers, for example of gulls, at various sites is because these birds have settled elsewhere in the islands or if as suspected there is serious decline in the overall population.

² Mavor RA, Parsons M, Heubeck M & Schmitt S (2006) *Seabird numbers and breeding success in Britain and Ireland 2005*. JNCC Peterborough

³ H. Booker *pers. comm.*

Appendix 1: Disturbance Statement

Disturbance Statement for the Isles of Scilly Seabird Monitoring & Research Project 2013-15

Summary

Between April and September 2013-15, using standard methods, data will be collected on seabird breeding numbers and productivity at key sites across the islands (see method statement).

Species to be studied;

Manx shearwater, fulmar, storm petrel, shag, lesser black-backed gull, herring gull, great black-backed gull, kittiwake, common tern, razorbill, puffin, oystercatcher, ringed plover.

Study sites;

- Annet (Annet SSSI)
- St. Agnes & Gugh (Big pool & Browarth, Gugh & Wingletang Down SSSI)
- Samson & Green Island, (Samson SSSI)
- The Daymark, St. Martin's (Chapel Down SSSI)
- Gimble Porth, Tresco
- Peninnis & Hugh Town, St. Mary's (Peninnis Head SSSI)
- Menawethan (Eastern Isles SSSI)
- Bryher (Shipman Head SSSI)

Licences & Permissions

This work is contracted by the Wildlife Trust who manage the majority of the study sites. The IOSWT and NE Research Information and Project Accent forms are included with this submission. All sites are included in the Isles of Scilly SPA and SAC and most are also SSSI designated (see above). No bird disturbance licences are required as no eggs or young birds will be handled as part of the project, and none of the seabirds studied are Schedule 1 listed species.

Potential Impacts & Mitigation

Potential Environmental Impact	Mitigation
Disturbance and stress caused to breeding seabirds and their young	Standard approved methods used Utmost care taken when walking in areas where nests are present and full briefing of any volunteers on all disturbance mitigation protocols Time in colony kept to a minimum, with counts of denser sub-colonies (e.g. gulls and Annet) conducted by a team of surveyors

	<p>Care taken to avoid exposure or overheating of nest contents (counts not conducted in heavy rain, shags not disturbed in hot sunlight)</p> <p>Where more than one species is being monitored at a single location (e.g. gulls and kittiwakes), counts combined to reduce overall disturbance</p> <p>As much as possible counts conducted before chicks hatch to avoid issues with displacement of mobile chicks</p> <p>Fulmar counts in cliff or sloping areas conducted from the sea to avoid egg rolling by startled adults (Annet, Menawethan, Daymark)</p>
<p>Negative publicity</p>	<p>Liaison with local residents, boatmen and birders about purpose of study and methods employed to minimise disturbance</p> <p>Explain work to any visitors that stop to observe in any areas with public access</p> <p>Awareness of any sensitive local issues and where necessary advice and steer taken from the IOSWT and their Seabird Liaison Group Partners</p>
<p>Habitat damage</p>	<p>Utmost care taken to avoid disturbance of the natural and historic habitat, paths kept to as much as possible.</p> <p>Special care taken around areas with burrow nesting birds.</p>