

Seabird Monitoring & Research Project Isles of Scilly 2012



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Summary

Adding to previous data for the islands (2006-11), this report presents productivity data for some key seabird species at key sites across the islands, as well as regular key counts of seabird breeding numbers. In addition, baseline data to add to that of previous studies, is presented on seabird distribution and breeding success on St. Agnes and Gugh pre- rat eradication, as part of the Seabird Recovery Project.

Productivity Monitoring

- Productivity of Herring gulls; Samson, Tresco & Hugh Town (n = 69) The Gimble Porth colony continued to fail, whilst breeding success was slightly lower than previous years on Samson and in Hugh Town.
- Productivity of Kittiwakes; all sub-colonies (n = 78) Breeding failure, no chicks fledged from the Daymark or St. Agnes.
- Productivity of Fulmars; Menawethan & Daymark (n = 84) Reasonable success at the Daymark and Menawethan, though other sites less so.
- Productivity of Common terns; all sub-colonies (n ≥ 10) Breeding failure, late settlement followed by inundation of nests at Green Island.

Monitoring Breeding Numbers

- Annual count of breeding seabirds on Annet in collaboration with the Isles of Scilly Wildlife Trust. Numbers similar to previous years though very high failure rate in shags, lesser black back colony reduced as in previous 5 years.
- Manx Shearwater playback surveys St Agnes, Gugh & Peninnis. Birds breeding on all three islands, though success depressed by rat presence.
- As in 2010 & 11, Storm Petrel playback survey Annet (rat-free) sample beach. Increase in numbers observed, though confidence limits of estimates high.

Seabird Recovery Project baseline data St. Agnes & Gugh

- Count of all breeding seabirds (not already covered above and including storm petrel survey); St. Agnes & Gugh. Breeding numbers declining on St Agnes and Gugh, mainly due to losses of gulls.
- Manx Shearwater productivity; St. Agnes & Gugh (n = 24). Some evidence of limited successful fledging seen.
- Lesser black-backed gull productivity; sub-section of the Gugh colony (n = 327). A successful year with good numbers of chicks fledged.

Productivity Monitoring

Herring gull

A total of 69 breeding attempts were followed at three colonies in 2012. On Samson the breeding success and numbers settling were lower than in previous years. The Gimble Porth colony on Tresco failed again and looks set to be lost completely. In Hugh Town the number of pairs nesting increased slightly, and though success was reduced on previous years, it was still more than high enough to support a stable/increasing 'town' population.

SITE	2008	2009	2010	2011	2012
Samson	0.30 (n =84)	0.66 (n =73)	0.68 (n =63)	0.54 (n =71)	0.46 (n =56)
Gimble Porth, Tresco	0.48 (n =50)	0 (n =41)	0 (n =17)	0 (n =9)	0 (n = 3)
Hugh Town	1.29 (n =7)	1.67 (n =6)	1.86 (n =7)	2.25 (n =8)	1.4 (n = 10)

Kittiwake

The six sub-colonies present 2006 -2008 were again reduced to just two, with complete breeding failure at both in 2012. After an apparently successful incubation period, few nests appeared to have visible contents in early chick rearing. One or two chicks survived up to 3 weeks old at the Turk's Head colony on St. Agnes, but they remained very small, growing few adult feathers. No predation was observed during the survey visits and many adults remained in attendance at the nest sites long after any contents appear to have been lost.

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

Fulmar

The numbers of fulmar breeding at the Daymark and on Menawethan continue stable with good productivity for this relatively long-lived seabird, especially on Menawethan. However, observations of breeding success from elsewhere on the islands (Annet & Round Island), suggest that fulmars are not doing well at all sites.¹

¹ W Wagstaff pers. comm.

	Menawethan	Daymark	Total
2006	0.25 (<i>n</i> = 44)	0.20 (<i>n</i> = 46)	90
2007	0.30 (<i>n</i> = 41)	0.49 (<i>n</i> = 45)	86
2008	0.35 (<i>n</i> = 37)	0.28 (<i>n</i> = 46)	83
2009	0.43 (<i>n</i> = 33)	0.64 (<i>n</i> = 36)	69
2010	0.39 (<i>n</i> = 30)	0.45 (<i>n</i> = 51)	81
2011	0.29 (<i>n</i> = 24)	0.25 (<i>n</i> = 49)	73
2012	0.56 (<i>n</i> = 25)	0.39 (<i>n</i> = 59)	84

Common tern

As in the previous two years common terns failed to raise any young in Scilly in 2012. Again they were late to arrive and settle, and soon after they did, their nests were inundated by a storm tide. It is hard to know exactly how many birds actually laid at Green Island as the nests were lost within a week or so of laying and before the first count was made. However, the remains of at least 10 nest sites/ eggs were observed. A few birds showed some interest later at Merrick Island² but no further breeding attempts were recorded.

Year	Productivity	Notes
2003	0.43 (<i>n</i> = 86)	
2004	0.59 (<i>n</i> = 76)	Majority of nests on North Hill, Samson
2006	0 (<i>n</i> = 78)	Young inundated by storm tide, Green Island
2007	0 (<i>n</i> = 1)	Only one breeding attempt recorded, Annet
2008	0.26 (<i>n</i> = 51)	Green Is. 41 nests; Peasehopper 10 nests
2009	0.39 (<i>n</i> = 52)	Green Is. 51 nests; Annet 1 nest
2010	0 (<i>n</i> = 0)	Birds settling on Green Is. but site abandoned before laying
2011	0 (<i>n</i> = 10+)	Late settlement, then Green Is. site inundated by storm tide
2012	0 (<i>n</i> ≤ 10)	Late settlement, some eggs lost to storm tide Green Island

² W Wagstaff pers. comm..

Monitoring Breeding Numbers

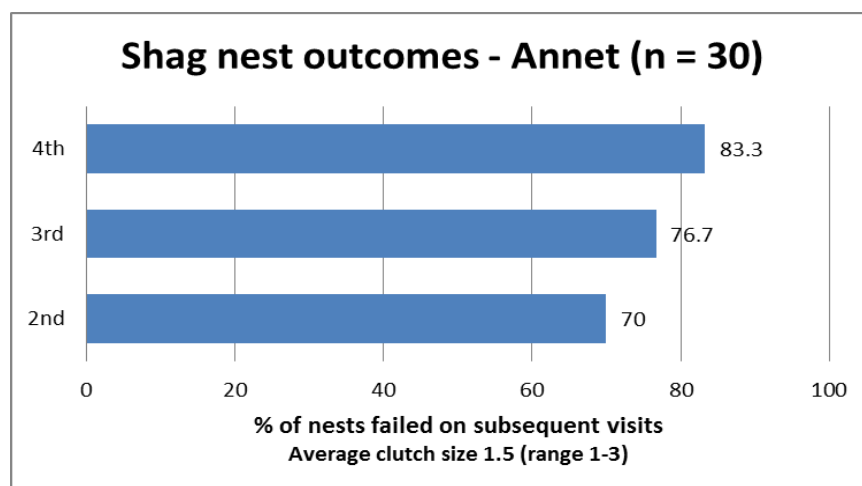
Annet breeding numbers

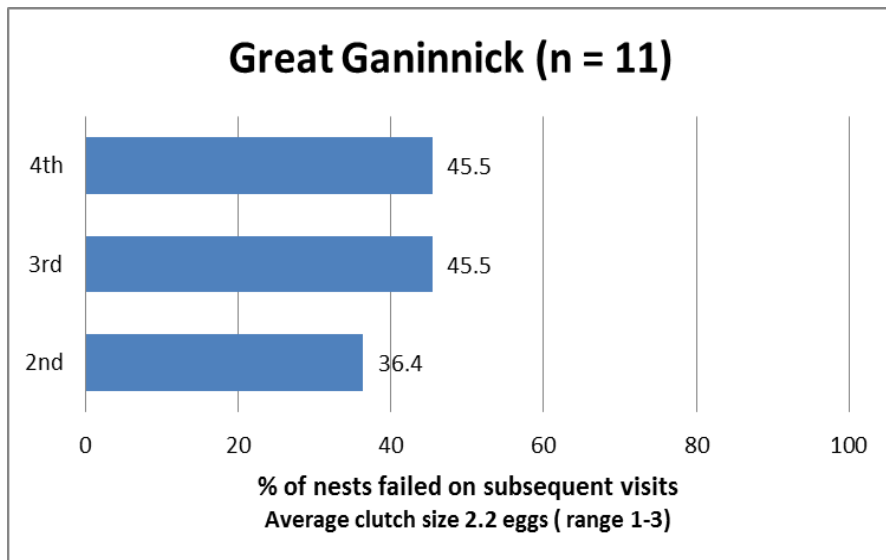
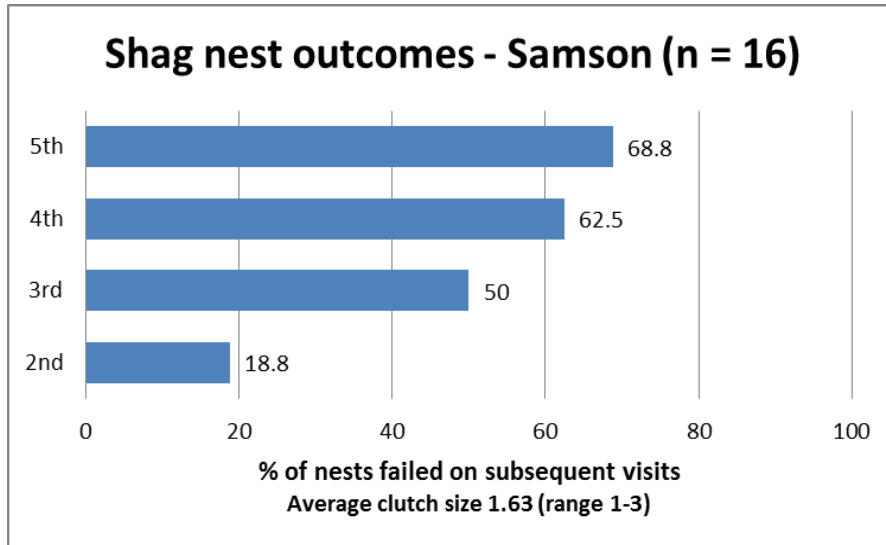
The annual count of breeding seabirds on Annet was conducted at the end of May in collaboration with the Isles of Scilly Wildlife Trust. Overall numbers were similar to the previous year, though it can be seen from the table below that numbers are highly variable between years. As well as a decline in the lesser black backed population, the numbers of breeding shag have declined in the last two years. In particular in 2012 a very high failure rate was observed in shags. As many as 57% (61 of 107) of shag nests were empty; either deserted or predated, with many nests being found unattended.

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

* This number is a peak – data from the Seabird Colony Register 1976-98 range from 82-163 shag prs.

The following nest history data, kindly supplied by Richard Bufton, suggest that the failure rate was particularly high on Annet in 2012, with over 80% of nests having failed by the fourth visit, compared to just 45% on Great Ganinnick (where a larger average clutch size was also recorded).





Storm petrel

As in 2010 and 2011 Apparently Occupied Sites were recorded from playback survey at the study beach on (rat free) Annet. An increase in numbers was observed, though as the response rates are relatively low for this species the confidence limits of these estimates are high (0.35 ± 0.098).³

Year	Number AOSs	Notes
2000	49	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

³ Ratcliffe N, Vaughn D, Whyte C & Shepherd M 1998. Development of playback methods for Storm-petrels *Hydrobates pelagicus*. Bird Study 45: 302-312

Manx shearwater

Diurnal tap playback surveys elicited responses from breeding birds on Gugh, St. Agnes and at Peninnis on St. Mary's. The burrows at Peninnis did not appear to be active beyond the hatching period. However 2-3 of the Gugh burrows and 2 burrows at Wingletang on St Agnes showed evidence of chick fledging; feathers, guano, broken vegetation as well as nesting material retrieved from burrow ends after fledging. There was evidence and in some cases sightings of rats at all of the failed sites.

	Gugh	Wingletang, St. Agnes	Shipman Head, Bryher	St. Helen's	Peninnis
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

*AOBs recorded mid-June, likely to be an underestimate

Seabird Recovery Project baseline data St. Agnes & Gugh

A full count of all breeding seabirds was conducted on St. Agnes & Gugh to add to pre-rat eradication baseline data for the Seabird Recovery Project.

The number of seabirds breeding on St Agnes has declined since the 2006 survey and Seabird 2000. This change is due to significant declines in the numbers of herring gulls, as well as the loss of common tern as a breeding species. In the 2012 survey the highest density of herring gull and oystercatcher nests was found in the North of the island at Kallimay and Browarth where access is difficult and electric fencing for grazing restricts walkers on the coastal path.

St Agnes	FUL	MX	SH	LB	HG	GB	KIT	COT	Total	RPI	OYC
2000		5		2	25			3	35	-	-
2006		8			15	1			24	-	-
2012		8		2	9				19	2	9

Again, the numbers of seabirds breeding on Gugh have declined since the 2006 count and seabird 2000. In the case of Gugh, this decline of almost 60% since 2006, is due to the loss herring and lesser black-backed gulls as well as the failure and desertion of the kittiwake colony here.

Gugh	FUL	MX	SH	LB	HG	GB	KIT	COT	Total	RPI	OYC
2000	2	22		1123	159	3	155		1464	-	-
2006	3	9		875	69	4	131		1091	-	-
2012	4	16	2	361	53	10			446		7

Productivity on St. Agnes & Gugh

As discussed before the productivity of the Manx Shearwater on St. Agnes and Gugh is low, however this year there was evidence that at least a few chicks may have made it off.

The lesser black-backed gulls on Gugh appeared to have a very successful year with lots of chicks in evidence. Approximately 180 chicks were fledged from 262 nests in the South Col top colony (0.69 ch/pr) and a minimum of 19 chicks were fledged from the 65 nests in the lower rocks colony by Cuckold's Carn (0.29 ch/pr).

Other data for breeding waders taken from the Landbird Survey carried out in 2012⁴ suggests that fledging success of Oystercatchers is extremely low, most likely due to depredation of young chicks by gulls. This survey recorded four fledged and independent young out of 35 birds on boulders at Browarth on 22nd July. This survey also reports that although breeding success of ringed plover is relatively higher than for oystercatchers, nest are prone to failure at the egg stage due to human disturbance and nest inundation by spring tides. Two chicks were observed from a clutch of four eggs on St Agnes.

⁴ Dawson, R.J.G. 2012. Survey of Breeding Landbirds of the Isles of Scilly. Isles of Scilly Wildlife Trust.

Discussion & Recommendations

Apart from the good breeding success seen in the lesser black-backs on Gugh and the herring gulls in Hugh Town, 2012 was another poor year for seabirds in Scilly. In particular, the common terns and kittiwakes failed again and it looks as if both these species may be lost as breeding birds on the islands in the not too distant future.

It would be good to investigate further the reasons for late settlement of the terns and look to see if this trend is repeated at other colonies in the area. If the arrival dates are much later than previously recorded for this species on the islands, it may be that the birds have been unsuccessful somewhere else first. A review of previous efforts for this species' recovery and suitable habitat in terms of predation and disturbance pressure would also be useful.

For the kittiwakes, the continued decline in numbers is in line with the regional trend, where the loss of birds from southern English colonies is in the region of 44%. The Isles of Scilly lies towards the southern edge of the species range and they have recently been lost as a breeding species from the Channel Islands.⁵ As speculated before, the loss of nests during the chick rearing phase and the failure of chicks to grow, indicates that food supply is a major driver of the breeding failure in Scilly. Tagging studies carried out on the islands in the past three years suggest that maximum trip distance recorded for kittiwakes was longer than in previous years; 126km in 2012, 68.9km in 2010 and 110km in 2011.⁶ In addition, a lower recapture rate was achieved in 2012 than in previous years and out of season moult was reported with plumage in poor condition and feathers shedding unusually easily (not observed in other colonies.)

Although the numbers of breeding birds on Annet is highly variable between years, the latest counts reveal a worrying decline. In particular the continued loss of lesser black-backed gulls both here and on Gugh is significant, although the high productivity recorded this year on Gugh is encouraging. The decline in the shag colony is also of concern especially as such a high proportion of the nests recorded this year (57% - 61 of 107) were empty. Data from other colonies suggest large numbers of exposed nests were lost due to poor weather early in 2012.⁷ However on Annet many shag nests were found unattended and there were some observations of predation by greater black backed gulls.⁸ That the failure rate was particularly high on Annet compared with other islands (over 80% of nests having failed by the fourth visit, compared to just 45% on Great Ganinnick) may indicate that a local effect is in play e.g. current food supply issues affecting the feeding behaviour of the large gulls present.

Continued monitoring of all the species covered in this report will add to the picture and allow for further trends to be investigated. In particular, the full SPA all species survey to follow up from the 2006 survey will be extremely important in updating the account. This is currently being discussed for 2015-18.

⁵ A Brown, M Davies, H Booker & L Lock *in prep.*

⁶ FAME Report to Seabird Liaison Meeting October 2012, M Bolton & R Bufton.

⁷ R Bufton pers. comm..

⁸ R Bufton pers. comm.

Appendix 1: Disturbance Statement

Summary

Between May and September 2012, using standard methods^{9,10}, data were collected on seabird breeding numbers and productivity at key sites across the islands.

Species 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)

Licences & Permissions

This work was contracted by the Wildlife Trust who manage the majority of the study sites. All sites are included in the Isles of Scilly SPA and SAC and most are also SSSI designated (see above). No bird disturbance licences were required as no eggs or young birds were 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 Care taken to avoid exposure or over-heating of nest contents (counts not conducted in heavy rain, shags not

⁹ 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.

¹⁰ Gilbert G, Gibbons GW & Evans J (1998) *Bird monitoring methods*. RSPB, Beds.

	disturbed in hot sunlight) Where more than one species is being monitored at a single location (e.g. gulls and kittiwakes), counts combined to reduce overall disturbance As much as possible counts conducted before chicks hatch to avoid issues with displacement of mobile chicks Fulmar counts in cliff or sloping areas conducted from the sea to avoid egg rolling by startled adults (Annet, Menawethan, Daymark)
Negative publicity	Liaison with local residents, boatmen and birders about purpose of study and methods employed to minimise disturbance Explain work to any visitors that stop to observe in any areas with public access Awareness of any sensitive local issues and where necessary advice and steer taken from the IOSWT and their Seabird Liaison Group Partners
Habitat damage	Utmost care taken to avoid disturbance of the habitat; toppled rocks replaced, paths kept to as much as possible. Special care taken around areas with burrow nesting birds.