

**Treshnish Isles Auk Ringing Group
Report
23rd – 30th June 2018**



Guillemot adult with chick (*Andrew Carter*)

Compiled by
Robin M. Ward

Expedition dates:
23rd – 30th June 2018

Expedition members:
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Introduction

Since 1971, the Treshnish Isles Auk Ringing Group (TIARG) has monitored, through ringing and census work, the breeding seabird populations of the Treshnish Isles, Argyll. A summary of the early expeditions is given in *Birds on the Treshnish Isles 1971-1995* (Walker & Cooper 1996). Annual reports have been produced since 1996 (see <http://tiarg.org>). This report summarises the results of the Group's 41st expedition to the Treshnish Isles, during 23rd – 30th June 2018.

As in previous years, the expedition was based around the village ruins at the northern end of Lunga. The majority of the week's fieldwork was centred upon Lunga and Sgeir a' Chaisteil where the annual full seabird census and ringing of specific seabird colonies was carried out. Use of the inflatable boat kindly loaned by the Hebridean Trust, enabled seabird census coverage of the islands between Lunga and Fladda, including Fladda. With much logistic help from Iain & Colin Morrison and crew, expedition members were in addition able to census the seabird colonies on all other islands of the Treshnish Isles in 2018. This year's census was undertaken as part of *Seabirds Count*, the fourth census of all breeding seabirds in the U.K., following on from *Operation Seafarer* in 1969/70, the *Seabird Colony Register* (SCR) census in 1985-87 and *Seabird 2000* in 1998-2002. This is only the second time TIARG have been able to census the entire Treshnish Isles group within a year and in particular, that members have landed on Bac Beg (Little Dutchman).

This year was the thirteenth year of a Shag Retrap Adult Survival study (RAS); this entails ringing each adult with its own uniquely engraved colour-ring so that it can be re-identified in the field in future years. This is part of the British Trust for Ornithology's (BTO) Integrated Population Monitoring Programme, funded by the UK Government. The Group's activities were dictated as always by the prevailing weather conditions. The light winds and absence of precipitation allowed the mist netting of Storm Petrels at three localities on Lunga needed as part of the Group's two Storm Petrel RAS studies.

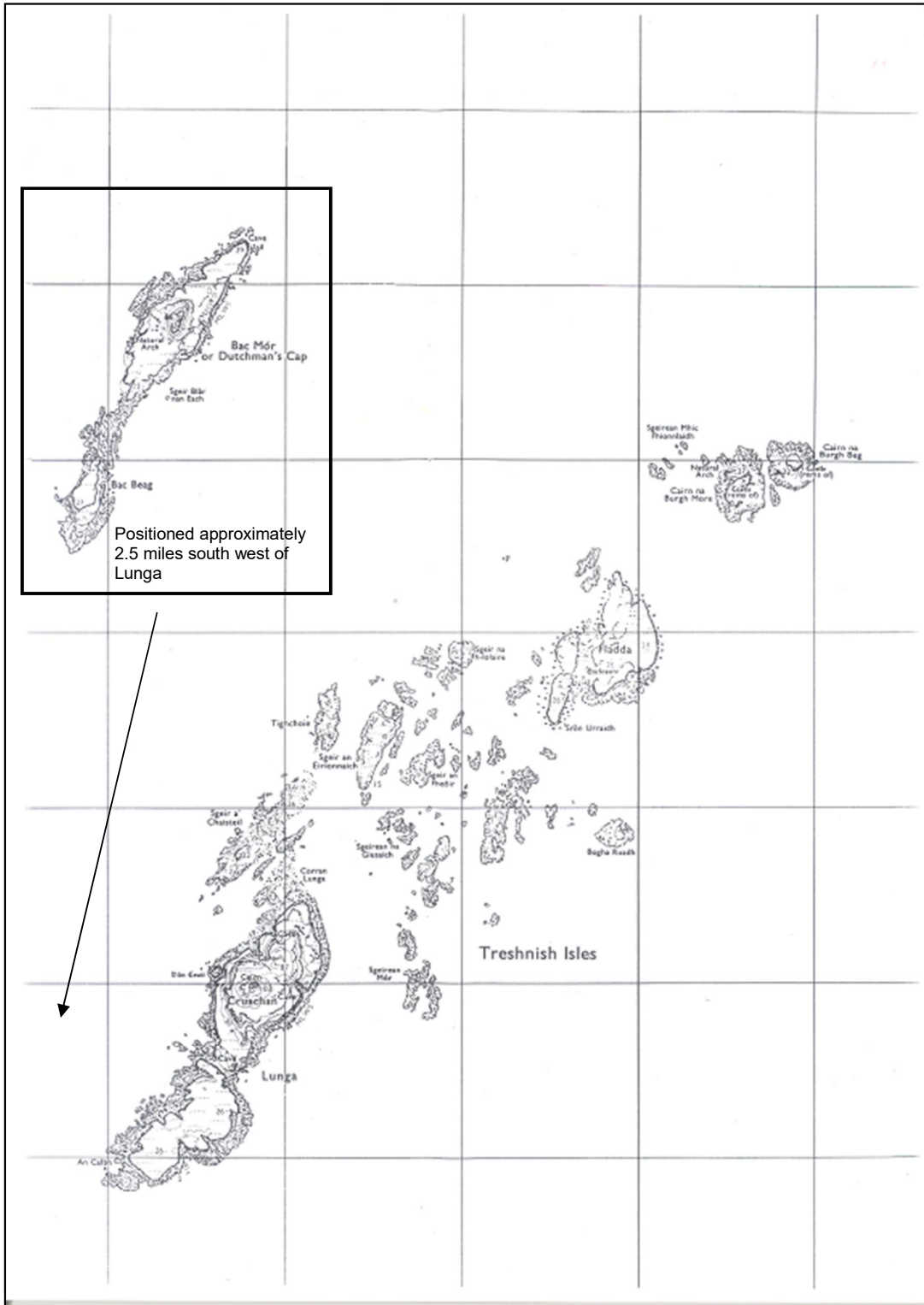
All TIARG census and ringing data are submitted to two national monitoring programmes, the Seabird Monitoring Programme (JNCC) and National Ringing Database (BTO), respectively. The data supplied are of great conservation value, being the sole means of monitoring the seabird colonies of the Treshnish Isles. The conservation importance of these islands is recognised by their designation by the UK Government as a Special Protection Area for internationally important populations of breeding Storm Petrel *Hydrobates pelagicus* and wintering Barnacle Geese *Branta leucopsis*. The islands have also been designated a Site of Special Scientific Interest (SSSI), *inter alia* for seabird breeding colonies of national importance. Financial support for the monitoring work TIARG undertook in 2018 was provided by the Hebridean Trust (www.hebrideantrust.org), owners of the islands.

In addition to the systematic and targeted census and ringing efforts conducted as an annual commitment, TIARG in May and July 2018 undertook expeditions (40th & 42nd) dedicated to estimating the breeding populations of Manx Shearwater and Storm Petrel respectively. Both surveys funded by Scottish Natural Heritage, included some ringing and will be reported on separately via the website tiarg.org. These are the second ever attempts at making comprehensive surveys of the islands for these two species, the previous in 2000 (Offer 2000) and 1996 (Gilbert & Helmsley 1996) respectively.



Expedition participants June 2018: (left to right back row) Lila Buckingham, Jurjen Annan, Tim Dixon, Emma Hughes, (left to right front row) Shaun Micklewright, Robin Ward, Andrew Carter & Chris Heward (*Sharyn Murray*)

Map of the Treshnish Isles



Weather

Meteorological data tabulated below was recorded using a hand-held weather station on Lunga during the period 23rd to 30th June 2018.

DATE	TIME	TEMP (°C)	WIND (kmph)	PRESSURE (mbar)	CLOUD (Oktas)	PRECIPITATION	VISIBILITY (see below)
23/06/2018	20:40	13.0	8.3	1022.6	3	none	Muck
23/06/2018	23:05	12.3	8.6	1022.5	1	none	Caliach
24/06/2018	08:20	14.8	7.0	1021.5	8	none	Black Cuillins
24/06/2018	14:25	19.2	9.5	1021.4	1	none	Rum
24/06/2018	19:00	16.5	6.0	1020.5	0	none	Ardnamurchan
24/06/2018	23:35	12.6	4.7	1020.6	0	none	Black Cuillins
25/06/2018	10:10	16.5	4.1	1022.6	6	none	Muck
25/06/2018	15:45	20	10.8	1023.5	1	none	Muck
25/06/2018	23:30	14.9	8.5	1023.2	1	none	Rum
26/06/2018	15:00	19.3	4.5	1021.7	8	a few light spots	Ardnamurchan
26/06/2018	22:55	20.0	4.1	1021.2	0	none	Black Cuillins
27/06/2018	09:15	24.5	3.2	1022.3	0	none	Black Cuillins
27/06/2018	14:30	28.0	8.5	1022.1	0	none	Ardnamurchan
27/06/2018	19:00	26.1	4.7	1021.6	0	none	Ardnamurchan
27/06/2018	23:10	16.8	9.4	1022.2	0	none	Black Cuillins
28/06/2018	10:50	23.3	6.5	1023.5	0	none	Black Cuillins
28/06/2018	15:50	25.5	6.2	1023.0	0	none	Black Cuillins
28/06/2018	23:00	16.0	9.8	1022.5	0	none	Black Cuillins
29/06/2018	13:35	19.3	8.2	1019.7	0	none	Rum
29/06/2018	23:00	18.0	1.9	1016.5	0	none	Biod Mor
30/06/2018	11:10	20.6	20.5	1013.3	0	none	Rum

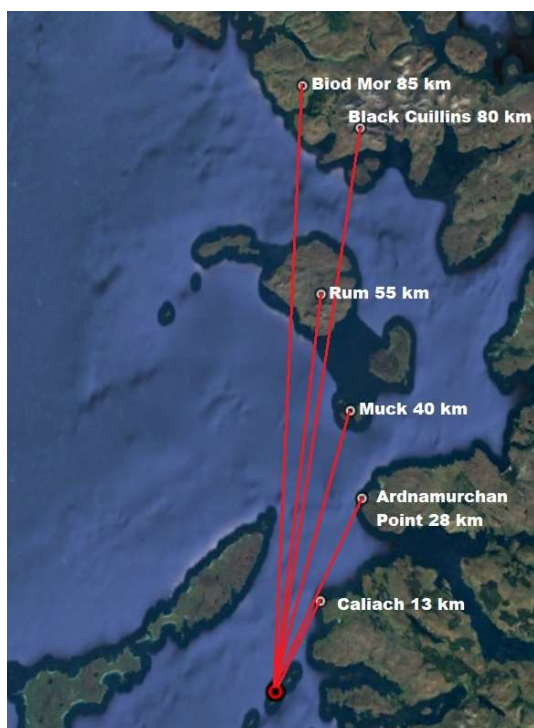


Figure 1. Visibility was measured in relation to several prominent landforms visible from 'the village' on the north side of Lunga.

Chris Heward

Systematic list of birds for 2018

The following systematic list describes those bird species seen during the Treshnish Isles Auk Ringing Group's (TIARG) presence on the Treshnish Isles, 23rd – 30th June 2018. The introductory comments (first paragraph) refer to the species' status during the breeding season as recorded by previous expeditions.

A detailed breakdown of breeding seabird numbers on the Treshnish Isles in 2018 is provided on page 21.

Canada Goose *Branta canadensis*

Rare visitor.

Four adult birds were seen on Sgeir an Eirionnaich on 27th and 28th June. The first record of the species breeding on the Treshnish Isles was confirmed by TIARG on Bac Mór where two adults and two goslings were seen during a visit on 28th June. These sightings represent the third and fourth records by TIARG of the species on the Treshnish Isles, the previous records in 2016 and 2017.

Greylag Goose *Anser anser*

Breeding noted in some years, with a moulting flock present during late summer.

The moult flock centred north of Lunga had built up to at least 198 birds by 26th June, typically most were around the islands of Sgeir an Eirionnaich, Fladda and Sgeir an Fheòir. At least an additional 86 were seen on Bac Mór during a survey from sea and land of Bac Mór and Bac Beag on 28th June. Well grown broods were associated with both moult flocks. Tabulated below are the annual peak counts of the moult flock centred north of Lunga.

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Peak count	25	160	240	268	79	101	316	90	164	77	80
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Peak count	225	160	140	50	140	196	272	70	98	198	

One of the birds seen on Bac Mór on 28th June was a neck collared with the code NCX. This bird was originally ringed at Cornabus, Islay, Argyll, on 16th November 2017 where it was re-sighted on the 7th February and 16th March 2018.

Shelduck *Tadorna tadorna*

Until recently a rare visitor with one pair having bred occasionally since 2003.

Two birds were seen off the north end of Lunga on 26th June.

Teal *Anas crecca*

Rare visitor

A pair of adults was seen on Bac Mór during a visit by TIARG on 28th June. This sighting represents only the second by TIARG of the species on the Treshnish Isles, the previous record in 1993 when one was flushed from Little Dutchman (Walker & Cooper 1986).

Eider *Somateria mollissima*

Breeds regularly in small numbers.

Three broods were noted at North Haven, Fladda on 29th June, with single ducks accompanying two, three and four ducklings respectively. Elsewhere a duck with one duckling were seen on Lunga and a duck with four ducklings seen at Cairn na Burgh Beag.

The waters between Fladda and Lunga supported small numbers of late-summer moulting birds, typically male-biased with a minimum of 21 birds on 27th June. A single bird was noted at during a brief visit to Bac Mór on 28th June.

Storm Petrel *Hydrobates pelagicus*

A common breeding species. The Treshnish Isles supported 20% of the Great Britain population and between 0.7 – 1.7% of the Atlantic (north-eastern) population as estimated by *Seabird 2000*.

In July, a complete census of Lunga, Sgeir a Chaisteil and Fladda estimated a breeding population of 3,251, 262 and 5,151 apparently occupied nest sites. It is known from the only complete census in 1996, that breeding birds were also present on Bac Mór, Bac Beag, Cairn na Burgh More and Cairn na Burgh Beg,

totalling an estimated 18% of the total population for the Treshnish Isles. A full account of this survey by TIARG is reported elsewhere (tiarg.org).

During the day in late June, one bird was found at the entrance to a nesting burrow, a second on the ground in Area 10 and a third dead not predated on Fladda.

Four nights of light winds and no rain gave the opportunity in late June to mist net for Storm Petrels on Lunga at the Village and the Boulder Beach. On the Boulder Beach, traditionally ringed localities near the Well and below the Village on single nights, provided catches of 215 and 206 birds using two 18 m (for 2½ hours), and one 12 m net (1¾ hours) respectively. At the Village, 131 birds were caught using three 18 m nets over two nights (for 5 hours 25 mins period in total).

Fulmar *Fulmarus glacialis*

A common breeding species. The Treshnish Isles supported 0.2% of the Great Britain population as estimated by *Seabird 2000*.

Breeding was confirmed on Lunga, Bac Mór, Bac Beag, Cairn na Burgh Beg, Cairn na Burgh More, Fladda and Sgeir a' Chaisteil. The breeding population for Lunga and Sgeir a' Chaisteil was estimated at 245 pairs based upon apparently occupied sites (AOS). This represents a 9% decline in the number of breeding birds from the previous year. Over the longer term, 1994-2018, the population has shown an overall decline. This is consistent with a decline nationally which may be due to declines in offal from trawlers, representing a 're-adjustment' to more natural levels following a period of artificially elevated population size (JNCC 2016).

The estimated breeding population on the Treshnish Isles was 335 AOSs, a 69% reduction from the 1,078 INDs counted by *Seabird 2000* in 1999.

Manx Shearwater *Puffinus puffinus*

A common breeding species. The Treshnish Isles supported 0.4% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

In May, a complete census of Lunga by TIARG estimated a breeding population of 1,992 pairs based upon AOSs. This is a 55% increase from the previous population estimate of 1,283 pairs in 2000 (Offer 2000). Very few if any breeding birds were considered to occupy the other islands, as little or no suitable habitat exists. A full account of this survey is reported elsewhere (tiarg.org).

Presumed breeding birds were seen and heard at night on Lunga by the expedition in late June. Small numbers of birds were seen daily, feeding or passing offshore of Lunga. During the week in the evenings up to 1,000 birds were noted rafting off the east coast of Lunga.

Grey Heron *Ardea cinerea*

Rare visitor.

Four birds were seen flying over the north end of Lunga heading west on 26th June. One bird was heard calling from Corran Lunga on 28th June.

Shag *Phalacrocorax aristotelis*

A common breeding species. The Treshnish Isles supported 2.1% of the Great Britain population and between 0.8 – 0.9% of the Atlantic (northeastern) population as estimated by *Seabird 2000* (1998 – 2002).

Breeding was confirmed on Bac Mór, Bac Beag, Fladda, Lunga and Sgeir a Chaisteil. The estimated breeding population on the Treshnish Isles was 1,342 Apparently Occupied Nests (AON), a 123% increase from the 601 AONs counted by *Seabird 2000* in 1999. Some change in the breeding distribution of birds has accompanied the population size increase, with a loss of birds from the smaller breeding populations on Cairn na Burgh More, Cairn na Burgh Beg and Sgeir an Eirionnaich, and reductions in the numbers of birds breeding on Bac Mór, Bac Beag, Lunga and Sgeir a Chaisteil (see a detailed breakdown of breeding seabird numbers on the Treshnish Isles in 2018 is provided on page 21). Those losses have been more than equally compensated for by a 387% population increase in the population of birds breeding on Fladda since 1999, with 1,081 AONs counted where previously there were 222 nests. The cause of this significant population increase and marked re-distribution is unknown. The population dynamics over the intervening years is unknown for most of the islands. Where it has been followed annually, on Lunga and Sgeir a Chaisteil, following a marked decline in the numbers of active nests in 2005 and 2006, numbers have since gradually increased with fluctuations from 78 to 244 active nests; in 1999, the total for the two islands was 295.

A major difficulty associated with a breeding census of this species is its prolonged and variable breeding season (eggs have been laid in every month of the year except September and October in the U.K.). Additionally, in occasional years many adults do not breed (JNCC 2016). The former problem is overcome by conducting a single count in the period of maximum nest occupancy (May - June). It is

inevitable however that these problems will have led to an underestimate of the absolute size of the breeding population on the Treshnish Isles with empty nests noted in most years and fledged young in some years by TIARG. In 2018, of those birds that were breeding on Lunga and Sgeir a' Chaisteil, great variation was once again found in the progress of breeding, with all stages from eggs to already fledged young noted. Overall breeding was not as advanced as an average year, with most nests containing eggs or young chicks. Brood sizes were mostly small, typically only two or three young.

Large numbers of adults were in the vicinity of the colonies with over 500 birds moving offshore from the islands in the mornings to forage.

2018 was the thirteenth year of a Retrap Adult Survival study (RAS) that entails ringing each adult with its own uniquely engraved colour-ring so that it can be identified in the field in future years. This is part of the BTO's Integrated Population Monitoring Programme funded by the UK Government (<http://www.bto.org/ringing/ringinfo/ras/index.htm>). In 2018, of the birds marked from 2006 to 2017 on Lunga, 64 out of a possible 351 individuals were re-sighted and/or recaptured by TIARG in June. A further 33 breeding adults were colour-ringed on Lunga in 2018. In May (26th May – 1 June), an additional seven birds were re-sighted by TIARG on Lunga.

Gannet *Morus bassanus*

Regularly seen offshore

Small numbers of adult birds were seen daily, feeding or passing offshore of Lunga. The largest count was of 22 adults on the sea west of Lunga.

White-tailed Eagle *Haliaeetus albicilla*

Rare visitor

There were no records of this species during the expedition.

Buzzard *Buteo buteo*

Until recently, one pair bred in most years.

Regular sightings suggested the presence of one pair of adults on Lunga, both birds being in active wing moult. Presumably the same pair were seen displaying over Sgeir a' Chaisteil on 30th June. A juvenile was also seen on two occasions over Sgeir a' Chaisteil, accompanied once by an adult.

One adult bird was seen to be mobbed by a Great Skua over Fladda on 29th June.

Water Rail *Rallus aquaticus*

Rare visitor.

One bird was heard calling on 25th June from a bracken covered cliff top area immediately east of the Village. This was in the same locality as single birds have been recorded in the previous four years, prior to which the species had not been recorded by TIARG. A second bird was heard calling from the reedbed at the south end of Lunga on 25th June.

Corncrake *Crex crex*

Recorded almost annually and probably a regular breeder in small numbers.

Single males were regularly seen and heard calling from the vicinity of the Village and above the second gully on the east coast of Lunga. On one occasion, a single male was heard calling on Corran Lunga, Lunga. A female was also regularly heard calling from the vicinity of the Village, Lunga, a recording of which has been uploaded to www.xeno-canto.org/423731 (Shaun Micklewright). The identity and sex of this latter bird was confirmed following research on the internet e.g. <https://soundcloud.com/klasse-1/bothbirdsegnorm> and Ottvall (1999).

One male was heard calling during a brief visit to Bac Mór on 28th June.

Oystercatcher *Haematopus ostralegus*

Breeds regularly in small numbers.

A total of 28 breeding pairs were noted as follows. On Lunga's beaches and rocky outcrops, seven pairs (two pairs at Corran Lunga and single pairs in areas 2, 4, 5, 6a and 8) were behaving as though on breeding territory, alarming at human intruders and performing displays on the appearance of other Oystercatchers. Away from Lunga, breeding pairs held territories on Cairn na Burgh More (two pairs), Cairn na Burgh Beg (two pairs), Bac Mór (two pairs with young), Bac Beg (three pairs), Fladda (five pairs), Sgeir an Eirionnaich (three pairs), Sgeir a' Chaisteil (two pairs), Sgeir an Fheòir (one pair) and Sgeirean na Giusaich (one pair with young).

Small flocks of presumed failed/non-breeders were evident on Lunga, typically at high tide, in the area of Sgeir a' Chaisteil and Corran Lunga where there would generally be up to 25 birds roosting.

Ringed Plover *Charadrius hiaticula*

One or two pairs breed annually.

Typically, the only breeding pair on Lunga was confined to Corran Lunga, where one pair with a chick was present.

One pair alarmed at human intruders during a brief visit to Sgeir a' Chaisteil on 25th June. Elsewhere during brief visits to Fladda and Sgeir na h-Iolaire, three and one breeding pairs respectively were noted with birds behaving as though on breeding territory and alarming at human intruders.

Curlew *Numenius arquatus*

An irregular visitor.

Six birds were seen flying north from the north end of Lunga on the 23rd June. Single birds were also seen from the north end of Lunga on the 28th and 29th June.

Dunlin *Calidris alpina*

An irregular visitor.

A single bird, a female *C.a.schinzii*, was seen during a brief visit to Sgeir an Fheòir the 29th June. A flock of 7 birds were also seen on the Boulder Beach, Lunga, on 30th June.

Common Sandpiper *Actitis hypoleucos*

One or two pairs usually breed.

No evidence of breeding was noted on Lunga, with single birds noted on occasions at Corran Lunga. One pair alarmed at human intruders during a brief visit to Sgeir a' Chaisteil on 25th June.

Redshank *Tringa totanus*

Irregular visitor

A single bird was heard from the Boulder Beach, Lunga in the early morning of 28th June.

Snipe *Gallinago gallinago*

Breeds regularly in small numbers.

Up to three birds could be heard drumming/chipping over the Village on most days. One adult flushed from young chicks at Shearwater Gully. Elsewhere on Lunga, up to two birds could be heard drumming/chipping between Shearwater Gully and Shag Alley (Area 3), one bird chipping on Corran Lunga and single birds were flushed in Area 6 and 12.

Elsewhere during brief visits to the other Treshnish Isles, a total of three birds were heard drumming on Fladda, two birds were seen on Cairn na Burgh Beag, three on Bac Beag and singles on Bac Mór, Sgeir an Eirionnaich and Cairn Burgh More.

Kittiwake *Rissa tridactyla*

A localised breeding species. The Treshnish Isles supported 0.2% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

Breeding was confirmed only on Lunga, where the main colony is around Harp Rock. The number of apparently occupied nests on Lunga was 522. A marked population decline of the colony from 2008 ended in 2011 since when numbers have widely fluctuated. The breeding season was considered no more or less advanced than average for this species.

Up to 345 birds were dispersed between roosts on Sgeir an Eirionnaich and the intertidal rocks off Sgeir a' Chaisteil. Amongst these birds were several first-summer individuals.

The estimated breeding population on the Treshnish Isles was 522 AONs, a 34% decrease from the 786 AONs counted by *Seabird 2000* in 1999.

Common Gull *Larus canus*

Regular? breeding species in small numbers.

Five pairs were estimated to be holding breeding territories on Fladda, found during a visit by TIARG on 29th June; 4 pairs (seven birds counted) on the low-lying basalt rock outcrop on Fladda's south-east coast and a pair (two birds counted) on the east side of North Haven. Up to eight adult birds were seen on occasions in the vicinity of Corran Lunga, Lunga, with also a first-summer and second-summer bird noted on single dates. No birds were found to be occupying territories elsewhere in the Treshnish Isles.

The estimated breeding population on the Treshnish Isles was five pairs, a 38% decrease from the eight pairs counted by *Seabird 2000* in 1999.

Great Black-backed Gull *Larus marinus*

A regular breeding species. The Treshnish Isles supported 2.0% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

From colony visits, breeding was confirmed on Lunga (eight pairs), Sgeir an Eirionnaich (estimated six apparently occupied territories; up to 12 adults counted with five young found), Sgeir an Fheòir (five pairs), Sgeir na h-Iolaire (one pair), Fladda (estimated 28 pairs; 56 adults counted when flushed), Bac Mór (14 pairs; a minimum of eight pairs with chicks), Bac Beag (six apparently occupied territories; 12 adults counted when flushed), Cairn na Burgh More (one pair) and Cairn na Burgh Beg (two pairs). No birds were occupying territories on Sgeirean na Guisach or Sgeir a' Chaisteil. The breeding season was considered no more or less advanced than average for this species.

The small numbers of birds now breeding on Lunga follows a marked decline in population during the early 2000's (see section "*Population changes for a selection of breeding species on Lunga, 1994 – 2014*").

The estimated breeding population on the Treshnish Isles was 53 pairs, a 85% reduction from the 342 pairs counted by *Seabird 2000* in 1999.

Herring Gull *Larus argentatus*

A regular breeding species. The Treshnish Isles supported 0.2% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

Breeding was confirmed on Lunga (estimated four pairs, eight adults counted when flushed; two nests) within gully at the south end of Lunga, in area 8. Breeding was also confirmed on Fladda (estimated six apparently occupied territories; up to 15 adults counted), Bac Mór (estimated four pairs, eight adults counted when flushed) and Cairn na Burgh More (estimated six pairs). No birds were found to be occupying territories elsewhere in the Treshnish Isles.

The small number of birds now breeding on Lunga follows a marked decline in population during the late 1990s / early 2000s (see section "*Population changes for a selection of breeding species on Lunga, 1994 – 2016*").

The estimated breeding population on the Treshnish Isles was 19 pairs, a 92% reduction from the 225 pairs counted by *Seabird 2000* in 1999.

Lesser Black-backed Gull *Larus fuscus*

Regular breeding species in small numbers.

One apparently occupied territory was noted within the gully at the south end of Lunga, in area 8. Elsewhere an estimated five pairs (10 birds counted when flushed) were found on Fladda and one pair on Bac Mór during brief visits by TIARG. No birds were found to be occupying territories elsewhere in the Treshnish Isles.

The estimated breeding population on the Treshnish Isles was seven pairs, an 83% reduction from the 40 pairs counted by *Seabird 2000* in 1999.

Common Tern *Sterna hirundo*

Irregular breeding species. The Treshnish Isles supported 0.6% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

The behaviour of two adults on Sgeir an Eirionnaich towards avian predators suggested that they were incubating eggs or had very young chicks on the 29th June. An estimated 50 adults were counted amongst 450 mixed Arctic and Common Terns when flushed at a ternery on Sgeirean na Giusaich. On the assumption that the number of nests counted in the mixed ternery is for each species proportionate to the number of adult birds recorded in the flush count, 16 nests are attributable to Common Tern. No individuals of this species were identified amongst the terns flushed on Sgeir na h-Iolaire.

The estimated breeding population on the Treshnish Isles was 17 pairs, a 180% increase from the 6 pairs counted by *Seabird 2000* in 1999.

Arctic Tern *Sterna paradisaea*

Regular breeding species.

Terneries were present on Sgeir an Eirionnaich, Sgeirean na Giusaich and Sgeir na h-Iolaire. Tabulated below are from each site counts of Arctic/Common Terns nests and the estimated number of Arctic Terns flushed during brief census visits on 28th June. On the assumption that the number of nests counted on Sgeirean na Giusaich in the mixed ternery is for each species proportionate to the number of adult birds recorded in the flush count (a ratio of 1:8 based on 50 Common Terns and 400 Arctic Terns flushed), 127 nests are attributable to Arctic Tern.

The estimated breeding population on the Treshnish Isles was 127 pairs, a 18% reduction from the

154 pairs counted by *Seabird 2000* in 1999. In making such a comparison it should however be noted that in unlike other seabirds, populations of breeding terns can be very mobile, with part or all of a colony shifting location between years to another colony.

Site	Nest counts of Arctic/Common Terns						Estimated no. of Arctic Terns in flush count of ternery
	Empty nest	1 egg	2 eggs	3 eggs	Total no. of nests	Chicks	
Sgeirean na Giusaich	0	41	64	23	143	13	400
Sgeir an Eirionnaich	0	0	7	0	7	0	70
Sgeir na h-Iolaire	4	4	19	5	32	0	120

Great Skua *Stercorarius skua*

A small but regular breeding population has become established since the first confirmed breeding by a pair in 1998.

On Lunga, where up to four birds were noted daily, no breeding territories were found. Breeding was confirmed on Bac Mór (estimated three apparently occupied territories with one egg in a nest and a chick in separate territories) and Fladda (estimated four apparently occupied territories with one nest containing two eggs in one territory).

Birds were seen to predate adult birds of Shag, Common Gull and Great Black-backed Gulls. Attacks were also seen on more than one occasion on moulting Greylag Geese.

Arctic Skua *Stercorarius parasiticus*

Small numbers seen daily, presumably from the breeding grounds on Coll.

Up to three birds, two dark phase and a single light phase, were recorded almost daily from Lunga. On two occasions, the trio of birds were seen from the Village, Lunga, displaying.

Guillemot *Uria aalge*

Common breeding species. The Treshnish Isles supported 0.7% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

Breeding was confirmed only on Lunga and Sgeir a' Chaisteil and Fladda, with the main concentration as usual within the vicinity of Harp Rock where 9,941 adults were estimated. The total for Lunga and Sgeir a' Chaisteil combined was 10,495. The mean count for the past five years is 8,302 birds (range 6,434-10,495). The breeding season was considered no more or less advanced than average for this species.

The estimated breeding population on the Treshnish Isles was 10,495 individuals, a 10% increase from the 9,566 individuals counted by *Seabird 2000* in 1999.

Twenty adult birds known to be brooding chicks were caught at the colony and fitted with a geolocator attached to a ring that was put onto one of the birds' legs. The aim is to catch the same individuals again one or two years later to recover the tag and download data on their daily locations between breeding seasons. From the data, a PhD student (TIARG member Lila Buckingham) will analyse the migration routes and wintering areas used by birds together with those from different breeding colonies around Scotland and north-east England. This study (managed by MacArthur Green, funded by Vattenfall) aims to provide detailed and accurate data on the year-round movements of adult guillemots and razorbills, with particular reference to populations likely to interact at some stage of the year with offshore wind farms in the North Sea.

Razorbill *Alca torda*

Common breeding species. The Treshnish Isles supported 0.8% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

Breeding was confirmed on Lunga, Sgeir a' Chaisteil, Cairn na Burgh Beg and Fladda. The main concentration was typically located within the vicinity of Harp Rock. A total of 580 birds was counted on Lunga and Sgeir a' Chaisteil, in addition to the birds associated with 17 chicks located amongst accessible boulder colonies. The breeding season was considered no more or less advanced than average for this species.

The estimated breeding population on the Treshnish Isles was 673 individuals, a 45% reduction from the 1,232 individuals counted by *Seabird 2000* in 1999. Counts of apparently occupied nests have been converted into an approximate estimate of the number of individuals to be seen at a colony at any one time by dividing by a correction factor 0.67 to allow for the presence of non-breeders and the attendance of

breeding birds. This correction factor has been shown to be generally representative in Britain (Harris *et al.* 2015).

Twenty adult birds known to be brooding chicks, where caught at the colonies at Harp Rock and the Boulder Beach, Lunga, and were fitted with a geolocator attached to a ring that was put onto one of the birds' legs (see Guillemot for further details).

Black Guillemot *Cephus grylle*

Regular breeding species in small numbers. The Treshnish Isles supported 0.4% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

Adults were seen around Sgeir an Eirionnaich (one bird), Fladda (21), Bac Mór (eight), Bac Beag (five), Cairn na Burgh More (ten) and Lunga (eight). Breeding was confirmed on Lunga, Bac Mór and Fladda where birds were noted exiting nest sites.

The estimated breeding population on the Treshnish Isles was 54 individuals, a 33% reduction from the 70 individuals counted by *Seabird 2000* in 1999 (when a correction factor was used by TIARG of one bird counted equated to one breeding pair).

Puffin *Fratercula arctica*

Common breeding species. The Treshnish Isles supported 0.3% of the Great Britain population as estimated by *Seabird 2000* (1998 – 2002).

Breeding adults occupied burrows on Lunga, Sgeir a' Chaisteil, Bac Mór, Cairn na Burgh Beg and Fladda. Four adults were also seen in suitable breeding habitat on an inaccessible cliff on Bac Beag. The estimated breeding population on Lunga and Sgeir a' Chaisteil was 2,441 apparently occupied burrows (AOBs). For counts of birds, one bird is taken to represent one AOB (Mitchell *et al.* 2004). Numbers have since 2004 fluctuated between 2,423 and 3,349 AOBs with the exception of the comparatively low estimates of the two years 2010-2011; 1,705 and 1,611 AOBs respectively. One breeding plumaged adult was seen to unusually have no breeding plumage eye ornaments.

The estimated breeding population on the Treshnish Isles was 2,583 AOBs, a 45% increase from the 1,788 AOBs counted by *Seabird 2000* in 1999.

Rock Dove *Columba livia*

Regular breeding species in very small numbers.

Birds were seen daily on Lunga, principally along the east coast, the largest groups being of three adults with two fledged young. The young had fledged from a cave in Shag Alley where there were two other nests, containing two chicks and two eggs respectively. An abandoned nest with two eggs was found in the Blowhole (Area 7). During brief visits to the other islands, birds were seen on Cairn na Burgh More (three birds), and singles at birds), Cairn na Burgh Beg, Fladda and Bac Mór

Swift *Apus apus*

Irregular visitor

Between one and eight birds were seen or heard on three dates over Lunga.

Peregrine *Falco peregrinus*

Seen most years with breeding known to occur on adjacent coasts.

A single male bird in wing moult, was seen over Harp Rock, Lunga, on 28th June.

Hooded Crow *Corvus cornix*

A regular breeding bird in small numbers.

The species was seen daily either on or flying between Lunga and Sgeir a' Chaisteil, with no more than three adults noted at any one time. Sightings would suggest the presence of no more than single pairs on Sgeir a' Chaisteil and the south end of Lunga.

Elsewhere during brief visits to adjacent islands, one bird was seen on Bac Beg, two adults with two fledged young on Cairn na Burgh Beg and 2 birds on Fladda. A corpse was also found on Fladda; cause of death unknown.

Raven *Corvus corax*

At least one pair breeds in most years.

Up to seven individuals were seen on occasions frequenting Lunga. At least two birds were moulting adults that were accompanied at times by what were thought to be five juveniles due to the absence of wing moult or abraded flight feathers.

Elsewhere during brief visits to adjacent islands, four presumed juvenile birds (absence of wing

moult) were seen on Cairn na Burgh Beg.

Skylark *Alauda arvensis*

A regular breeding species in small numbers.

Up to five singing males were on Lunga. Single singing males were present on the slope of Cruachan above Shag Alley, at the Village and south of Tarbet in Area 6. A further two singing birds were noted in Area 7. Two birds were flushed in Area 6 and another in Area 7 on 30th June. A single bird was heard to call when over flying the Village, Lunga, on 25th June.

Elsewhere during brief visits to the Treshnish Isles other islands, the species was not recorded.

Swallow *Hirundo rustica*

Irregular visitor

Single birds were noted over the Village and South End, Lunga, on the 27th June. Elsewhere a bird was seen over Fladda on 29th June.

Sedge Warbler *Acrocephalus schoenobaenus*

A scarce but almost annual visitor.

One bird carrying food was seen in the reedbed at the south end of Lunga on 25th June.

Whitethroat *Sylvia communis*

Rare visitor.

One bird was located alarming between South and North Haven, Fladda.

Wren *Troglodytes troglodytes*

A regular breeding species, quite common where habitat is suitable.

As in previous years, the vast majority of records were confined to the northern half of Lunga, predominantly amongst the boulder scree and bracken-covered slopes from Cruachan down to the sea and on Corran Lunga. Food carrying, alarms, a nest and recently fledged young confirmed breeding on Lunga. There was a minimum of 7 territories recorded between the Village and Harp Rock.

Elsewhere during brief visits to the Treshnish Isles other islands, the species was recorded on Fladda and Bac Mór (3 birds).

Treecreeper *Certhia familiaris*

Rare visitor

During a brief visit to Bac Mór on 28th June, a bird was seen foraging over lichen covered cliff. This is the first sighting recorded by TIARG of this unexpected species on these treeless islands.

Starling *Sturnus vulgaris*

A regular breeding species in small numbers.

Small flocks of up to 65 birds were noted daily on Lunga, comprising mostly of juveniles. Breeding was confirmed with a nest noted in Area 6a.

Elsewhere during brief visits to the other islands, the species was recorded on Fladda (four birds), Cairn na Burgh Beg (one) and Bac Mór (three). An active nest was located on Cairn na Burgh More.

Song Thrush *Turdus philomelos*

Rare visitor

One bird was seen in the Village, Lunga, on 24th June.

Wheatear *Oenanthe oenanthe*

A regular breeding species in small numbers.

Widespread breeding species on Lunga with adults and fledged young observed across all count areas.

Elsewhere during brief visits to the Treshnish Isles other islands, birds were seen on Bac Mór (3 birds), Bac Beag (2), Sgeir an Eirionnaich (2) and Fladda.

Dunnock *Prunella modularis*

Irregular breeding species.

A singing male was heard daily near the Village.

Pied Wagtail *Motacilla alba yarrelli*

A regular breeding species in very small numbers.

One pair of adults were regularly seen in the vicinity of the Village, Lunga. Nearby, two adults and five juveniles were seen at the Puffin Terraces, Lunga, on 29th June. In the vicinity of Harp Rock, up to two juveniles and an adult were seen on occasions. Single record occurrences elsewhere on Lunga included an adult at Shag Alley and a single bird on Corran Lunga.

Elsewhere during brief visits to the other islands, the only record was of a juvenile seen between the Havens on Fladda.

Meadow Pipit *Anthus pratensis*

A regular breeding species in small numbers.

Widespread breeding species on Lunga with no estimate of territories made, though less numerous than Rock Pipit *Anthus petrosus*. Food carrying, alarms and recently fledged young confirmed breeding on Lunga.

Elsewhere during brief visits to the Treshnish Isles other islands, the only records were of presumed breeders on Fladda and Bac Mór (14 birds).

Rock Pipit *Anthus petrosus*

A regular breeding species in small numbers.

Breeding birds were common along the coast of Lunga and on Sgeir a' Chaisteil. Food carrying, alarms and recently fledged young confirmed breeding on Lunga and Sgeir a' Chaisteil.

Elsewhere during brief visits to the other islands the species was recorded on Fladda, Sgeir an Eirionnaich (four birds with one carrying food), Sgeir na h-lolaire (two), Cairn na Burgh Beag (ten), Bac Beg (one) and Bac Mór (13).

Twite *Linaria flavirostris*

Regular breeding species in small numbers

Small parties of up to three birds, including two adults with a juvenile, were noted daily around the northern half of Lunga.

Elsewhere during brief visits to the other islands, the species was recorded on Fladda (including a single flock of 10+ birds), Cairn na Burgh Beag (seven), Bac Beg (one) and Bac Mór (parties of two and six birds).

Linnet *Linaria cannabina*

Rare visitor

A male was seen at the Well, Lunga, on 27th June.



A juvenile Wheatear (Andrew Carter)

Systematic list of mammals for 2018

Otter *Lutra lutra*

Evidence of presence regularly noted.

However, in this year, no evidence of this species was noted on Lunga or during brief visits to any of the other Treshnish Isles during the expedition.

American Mink *Neovison vison*

No known occurrences.

No evidence of this species was noted on Lunga or during brief visits to any of the other Treshnish Isles during the expedition.

House Mouse *Mus musculus*

Resident, apparently in small numbers.

Individual animals were seen on several occasions at the expedition base in the Village, at the north end of Lunga.

Chocolate wax monitoring blocks are a method with which to attract and record the distinctive bite marks of different rodent groups e.g. mice and rats (Varnham 2008). Pairs of chocolate wax monitoring blocks, "chew sticks", were laid for two successive days overnight at four locations at the east end of the settlement at the southern foot of Cruachan, Lunga (amongst the remaining wall foundations of a house), and east of this settlement at ten locations with a field boundary wall. Chew sticks were later laid for two successive days overnight at ten locations within the southern end of the seabird boulder colony in Area 10. The chew sticks were then inspected for rodent teeth marks. The chocolate wax monitoring blocks were made following the method of Varnham (2008). No rodents were detected at any of the localities that chew sticks were deployed.

No evidence of this species was noted during brief visits to any of the other Treshnish Isles.

Brown Rat *Rattus norvegicus*

No known occurrences.

No evidence of this species was noted on Lunga or during brief visits to any of the other Treshnish Isles during the expedition.

Rabbit *Oryctolagus cuniculus*

Resident, numbers much reduced in recent years.

No systematic monitoring took place. Casual observations on Lunga suggest a marked reduction in the number of animals on Lunga compared with the most recent years. No more than six animals were recorded daily from widespread localities. One black individual was seen north of Tarbet, Lunga.

No evidence was noted of animals on any of the other islands of the Treshnish Isles during the brief visits by TIARG.

Grey Seal *Halichoerus grypus*

A regular breeding species, contributing just under 3% of the annual UK pup production. Numbers are regularly monitored by the Sea Mammal Research Unit (NERC, St Andrews). The conservation importance of these islands as a breeding colony is recognised by their designation by the UK Government as a Special Area of Conservation.

A maximum of 156 animals were visible from Lunga hauled out on intertidal reefs to the north and east at low tide. At the south end of Tarbet off Area 5, up to 13 animals were hauled out on intertidal rock on 24th June. Elsewhere 32 animals were seen during brief visits to Bac Beg, seven at Bac Mór, 27 at the Cairn na Burghs and 12 at Fladda.

Harbour Porpoise *Phocoena phocoena*

Rare visitor.

Two animals were seen off the west coast of Lunga on 25th June. Two separate groups of two adults and a calf, and five more animals were watched in quick succession when TIARG were crossing between Lunga and Bac Mór on 28th June.

Pipistrelle Bat *Pipistrellus pipistrellus* (45 kHz)

Previously regarded a rare visitor. True status uncertain.

Single animals of this species, now recorded annually since 2011, were noted over the Village on two nights. The identity was confirmed by the use of a bat detector.

Systematic list of lepidoptera for 2018

Common Blue *Polyommatus icarus*

Regular breeder

Up to 50+ were recorded daily on Lunga. Elsewhere during brief visits to the other islands, the species was recorded on Fladda (15 on 29th June), Sgeir an Eirionnaich, Cairn na Burgh More, Cairn na Burgh Beag, Bac Beg and Bac Mór.

Red Admiral *Vanessa atalanta*

Migrant

One or two individuals were recorded at the Village, Lunga, on three dates. Elsewhere during brief visits to the other islands, the species was recorded on Fladda (five), and singles on Sgeir an Fheadir, Sgeir na h-Iolaire, Sgeir an Eirionnaich, Cairn na Burgh More and Cairn na Burgh Beag.

Painted Lady *Vanessa cardui*

Regular migrant

Up to six individuals were recorded on Lunga on four dates. Elsewhere the species was seen during brief visits to Sgeir an Eirionnaich, Cairn na Burgh Beag and Bac Mór.

Green-veined White *Pieris napi*

Possible breeder

A single was seen at the Village, Lunga on 27th June.

Dark Green Fritillary *Argynnis aglaja*

Accidental

A single was seen at Corran Lunga, Lunga on 24th June.

Ringlet *Aphantopus hyperantus*

Possible breeder

Up to two individuals were seen on four dates on Lunga.

Meadow Brown *Maniola jurtina*

Possible breeder

Up to five individuals were seen on five dates on Lunga. A single was seen on Fladda during a brief visit on 29th June.

Wall Brown *Lasiommata megera*

Accidental

One was seen along the west coast south of Harp Rock, Lunga (area 12) on 24th June.

Map-winged Swift *Hepialus fusconebulosa*

One caught near the Village, Lunga, and another at the Village in a moth trap on 24th June, and two more in the moth trap on the 26th June.

Six-spot Burnet *Zygaena filipendulae*

Commonly sighted across Lunga, particularly south of Harp Rock. 7+ sighted on 26th June.

Hummingbird Hawkmoth *Macroglossum stellatarum*

One on Bac Mòr on 28th June.

Garden Tiger *Arctia caia*

One seen on the 24th June on the walk down to Boulder Beach, Lunga.

Buff Ermine *Spilosoma luteum*

Caught in a moth trap on 26th June near the Village, Lunga.

White Ermine *Spilosoma lubricipeda*

One at the Village, Lunga, on 27th June.

Northern Dart *Xestia alpicola*

Caught in moth trap at the Village, Lunga, on 26th June.

Bright-line Brown-eye *Lacanobia oleracea*

Caught in moth trap at the Village, Lunga, on 25th June.

Small Angle Shades *Euplexia lucipara*

Caught in moth trap at the Village, Lunga, on 24th June.

Dusky Brocade *Apamea remissa*

Caught in moth trap at the Village, Lunga, on 25th June.

Silver Y *Autographa gamma*

Multiple sightings on Lunga: 24th June on the walk down to Boulder Beach and 5+ around the Village on 26th June. Also present on Bac Beag on 28th June.

Nettle-tap *Anthophila fabriciana*

One at the Village, Lunga, on 26th June.

Other notable wildlife records

Oyster Plant *Mertensia maritima*

Localised species on Lunga.

At Tarbet (west) the species continues to be well established with no marked difference in abundance and extent to that of recent years.

Red-tailed Bumblebee *Bombus lapidarius*

A queen seen at the Village, Lunga, on 28th June.

White-tailed Bumblebee *Bombus lucorum*

Seen on the Cairn na Burgh's.

Grey Earthworm *Aporrectodea caliginosa*

One seen on Lunga.

Ground Beetle sp. *Abax parallelepipedus*

Plentiful on Lunga.

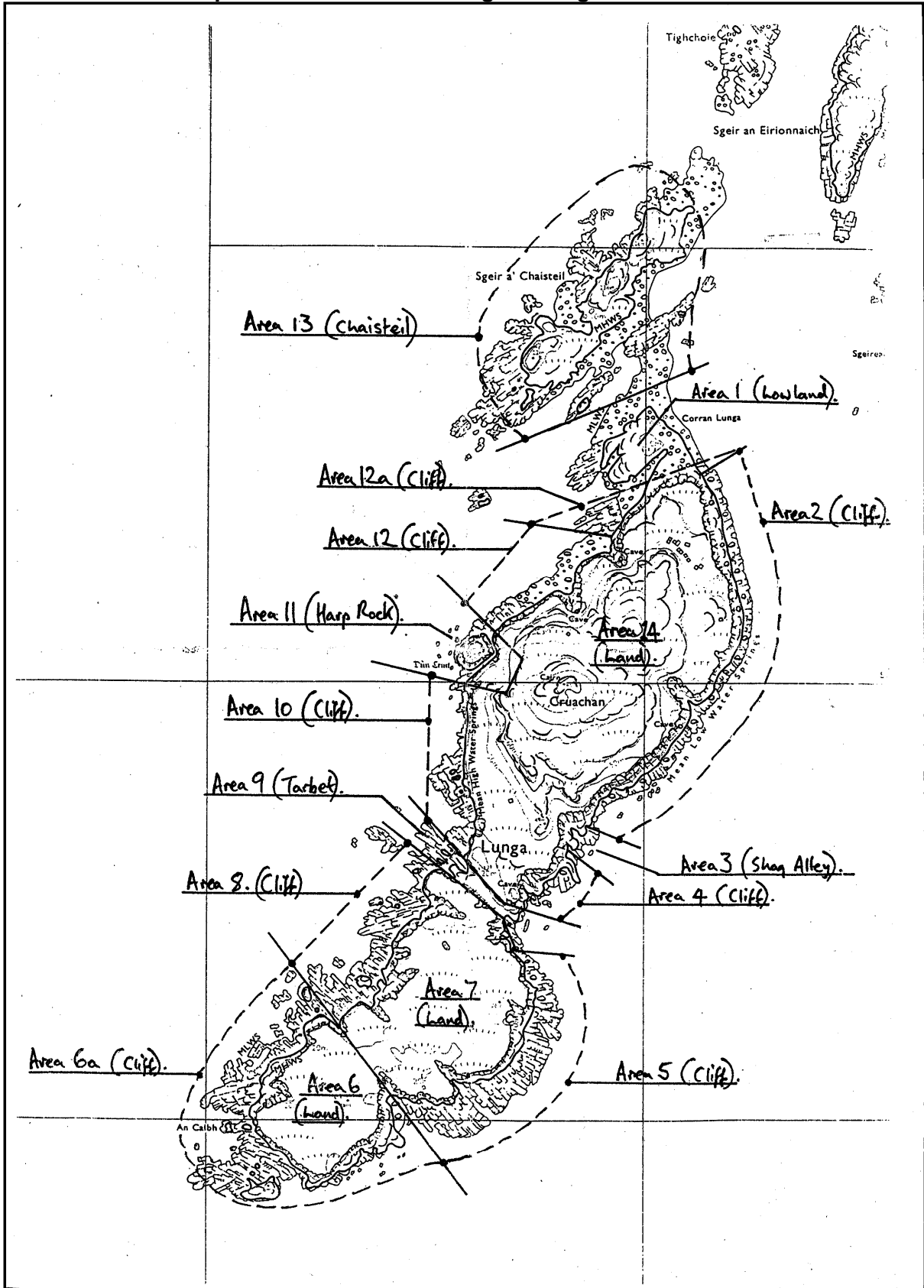
Diving Beetle sp. *Agabus bipustulatus*

Plentiful in pools at Tarbet, Lunga. Identified from an individual found on 26th June.



Six-spot Burnet Moths (Andrew Carter)

Map of census zones – Lunga and Sgeir a' Chaisteil



Breeding seabird census data for the Treshnish Isles in 2018

Sector	Count unit	Lunga	Sgeir a' Chaisteil	Sgeirean na Giusaich	Sgeir an Fheoir	Sgeir an Eirionnaich	Sgeir na h-Iolaire	Fladda	Cairn na Burgh More	Cairn na Burgh Beg	Bac Mór	Bac Beag	Grand total: Treshnish Isles
Fulmar	AOS	207	38					8	12	7	52	11	335
Manx Shearwater	AOS	1,992											1,992
Storm Petrel	AOS	3,251	262					5,151	*	*	*	*	8,664+
Shag	AON	238	6					1,083			13	2	1,342
Great Skua	AOT							4			3		7
Lesser B-b Gull	AOT	1**						5**			1		7
Herring Gull	AOT	4**						6**	5		4**		19
Great B-b Gull	AOT	8			5**	6**	1	10**	1	2	14**	6**	53
Common Gull	AOT							5					5
Kittiwake	AON	522											522
Common Tern	IND			50 ^{\$\$}		2 ^{\$\$}							52
Arctic Tern	IND			400 ^{\$\$}		70 ^{\$\$}	120 ^{\$\$}						590
Arctic/Common Tern	AON			143		7	32						182
Razorbill	IND	549	31					65		2			647
Razorbill	AON	17											17
Razorbill	SEA	70						25					70
Guillemot	IND	10,316	179										10,495
Guillemot	SEA	402						1					403
Black Guillemot	IND	9				1		21	10		8	5	54
Puffin	SEA	817						17					834
Puffin	IND	289									74	4	367
Puffin	AOB	1,850	302					1		47	16		2,216

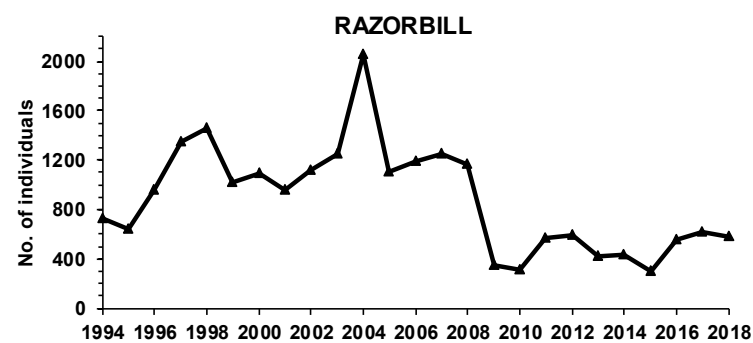
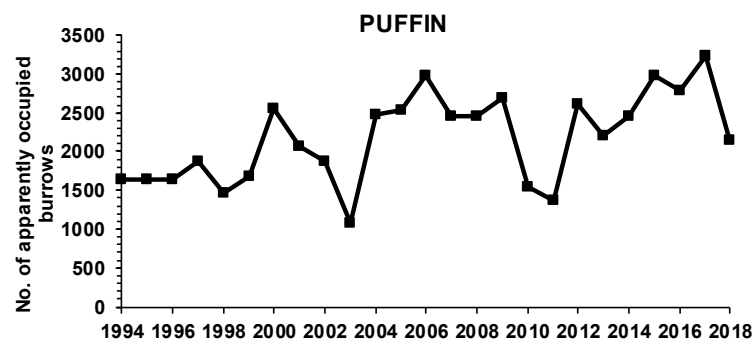
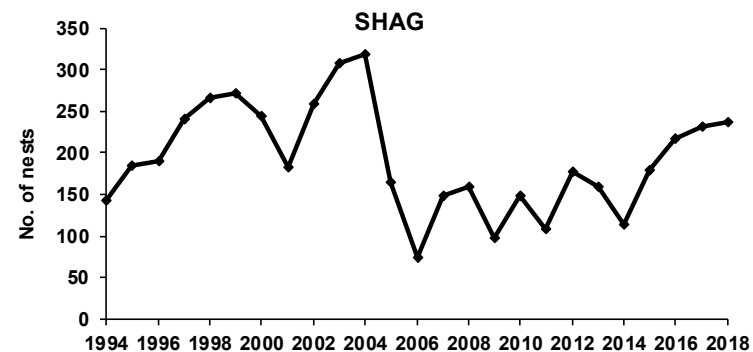
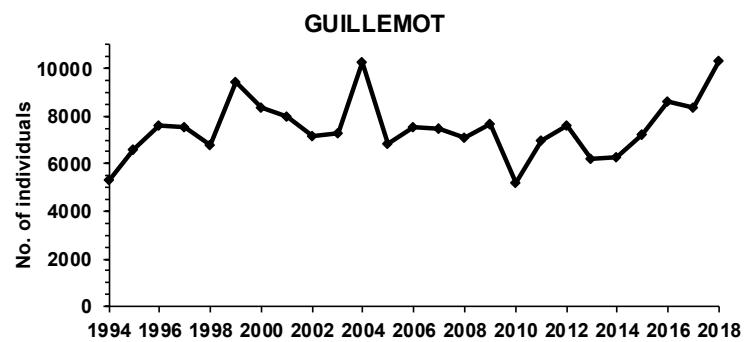
Key to count unit codes: AON/AOT/AOB/AOS = apparently occupied nest/territory/burrow/site IND = Individuals on land
SEA = individuals on sea within 200m of colony PRS = Pairs nc = no count + = breeders present
**Estimated from flush counts with the number of adults divided by two
^{\$\$} Flush counts of adults made during count of nests

Breeding seabird numbers for each census zone of Lunga and Sgeir a' Chaisteil in 2018

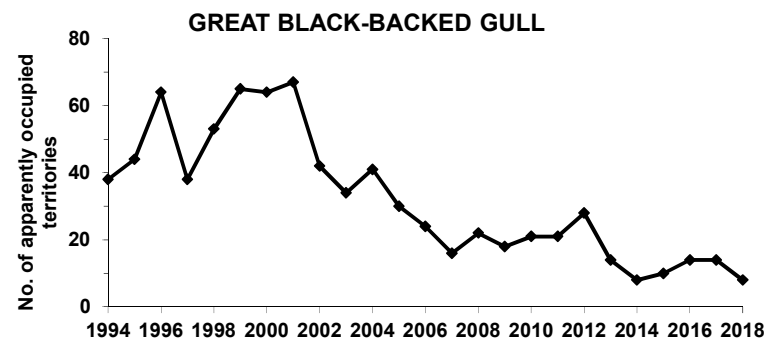
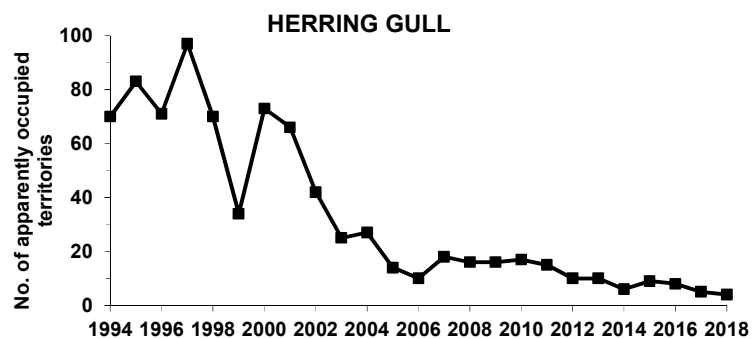
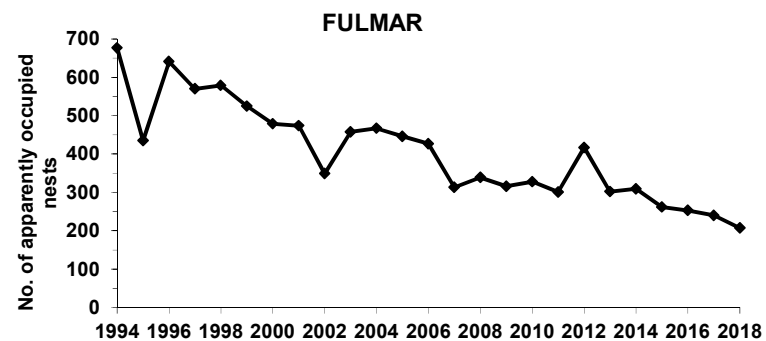
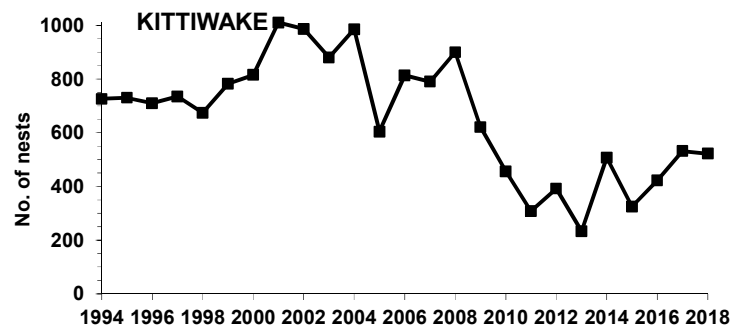
Sector	Count Unit	Count Sectors on Lunga (1 – 12a) and Sgeir a' Chaisteil (13)														Lunga & Chaisteil	
		1	2	3	4	5	6	6a	7	8	9	10	11	12	12a	13	Totals
Fulmar	AOS		34	8	2	31		12		18		11	12	79	0	38	245
Shag	AON		16	40	1	39		3		21		12	24	58	4	6	244
Great Skua	AON																0
Lesser B-b Gull	AOT									1							1
Herring Gull	AOT									4							4
Great B-b Gull	AOT	1			1		2		3			1					8
Kittiwake	AON												491*	31			522
Razorbill	IND		26	19	20	34		19		37		41	255	93	5	31	580
Razorbill	AON					10		1		6							17
Razorbill	SEA					4				12				54			70
Guillemot	IND					17		1				102	9,941	255		179	10,495
Guillemot	SEA					2								400			402
Black Guillemot	IND					1		5		3							9
Puffin	SEA		65	310	30	1								411			817
Puffin	IND		10	22	25									242			289
Puffin	AOB				36							136	674		1,004	302	2,152

Key to count unit codes: AON/AOT/AOB = apparently occupied nest/territory/burrow IND = Individuals on land
SEA = individuals on sea within 200m of colony PRS = Pairs nc = no count + = breeders present
* 78 birds were only visible when counted from the sea (35 AON) and a wave cut platform (43 AON). These were not in previous years accessible to view to include in the annual count unless otherwise stated.

Population changes for a selection of breeding species on Lunga, 1994 – 2018



Population changes for a selection of breeding species on Lunga, 1994 – 2018 (con't)



Treshnish ringing totals for 23 – 30th June 2018

Site	Species	New birds			Recaptures		Total
		Adult	Juvenile	Pulli	Retraps	Controls	
Lunga	Manx Shearwater	2			3		5
	Storm Petrel	426			110	16	552
	Shag	24		101	80		205
	Oystercatcher			1			1
	Ringed Plover			1			1
	Herring Gull			1			1
	Kittiwake	11			9		20
	Guillemot	327			43	1	371
	Razorbill	65			12	1	78
	Puffin	141			21	1	163
	Wheatear	3					3
	Rock Pipit	2					2
	Wren	2					2
Bac Mor	Greylag Goose					1	1
	Great Skua			1			1
Fladda	Herring Gull			1			1
Giusaich	Arctic Tern			10			10
Sgeir an Eirionnaich	Great Black-backed Gull			2			2
	Arctic Tern			1			1
Treshnish Isles	Grand total for 2018	1,003		119	278	20	1,420

*64 of 80 Shag 'retraps' were colour-ringed birds of which the majority were sighted and not captured.

Note: All rings used in 2018 were registered to *Treshnish Auk Ringing Group*.



Manx Shearwater (Andrew Carter)

Census of shags on Fladda, Treshnish Isles

Chris Heward¹

1. Introduction

A complete census of breeding shags *Phalacrocorax aristotelis* was conducted on Fladda on 29th June 2018. This is two to three weeks later than the early June census period recommended by Walsh *et al.* (1995) but coincided with the wider seabird censuses that are conducted by TIARG each year. This means that our breeding population estimates ought to be considered minima but are likely to provide greater consistency with those of previous and future surveys.

2. Colonies

Fladda was divided into nine sectors using natural breaks that separate large aggregations of nesting shags. Figure 1 illustrates the approximate boundaries of these sectors.

3. Survey method and recommendations

The island was surveyed by a team of four people in around six hours. Each shag colony was censused in four 'parallel' transects with the uppermost surveyor following the base of the cliff, the lowermost surveyor just above the High Water Spring (HWS) level and the two remaining surveyors evenly spaced between them. All apparently occupied nests (AONs) were counted. The most efficient way of doing this was for the team to count aloud whilst walking through the colony; each surveyor calling out their contributions to the colony total as encountered. The lowermost surveyor recorded the group count as it progressed. With the start of each new colony the count began again at zero.

Walking four concurrent transects parallel with the tideline reduces the amount of lateral movement required from surveyors and helps prevent double counting. Even with this relatively efficient method, the survey is physically demanding and ought to not be attempted with a team / teams smaller than four people.

A small number of nests on the northern cliffs of Fladda cannot be accessed on foot. These were censused by boat.

4. Results

The numbers of AONs in each section are recorded in Table 1. The total number of AONs on Fladda was 1,081. This is approximately five times greater than the number of nests recorded on Lunga. It is also nearly five times larger than the last complete count of Fladda conducted as part of *Seabird 2000* (AONs = 222) (TIARG 1999). Estimating the proportion of the UK population currently breeding on the Treshnish Isles is hindered by the lack of a recent national estimate but given the 1998-2002 estimate of 26,600 AONs (Mitchell *et al.* 2004) and the negative population trend recorded since 2000 (JNCC 2016), it is likely to be greater than 5%. It is likely that the Treshnish Isles now supports one of the largest, if not the largest, population of shags in the UK (see table 1 in JNCC 2016).

Nest stages ranged from unhatched eggs to well-developed chicks close to fledging. We found a small number of empty, soiled nests that probably suggest some chicks had already fledged prior to the survey (these nests are not included in our totals). This is supported by observations made during the late May 2018 expedition to survey Manx Shearwaters on Lunga when well grown young were noted.

Although most nests were sited under or between large boulders, as is typically seen on Lunga, we observed a greater variety of nest sites on Fladda. In very dense colonies, some nests were built in exposed locations on top of flat boulders and at the base of the cliffs Shags were found nesting amongst dense brambles and ivy. Densities were greatest below the western cliffs of Fladda and the boulders surrounding North and South Havens.

¹ cjheward@googlemail.com

Table 1. Number of apparently occupied shag nests for each sector

Sector number	Sector name	Total no. of AONs
A	South Haven W	331
B	Facing Lunga	136
C	Facing Eirionnaich	136
D	Dead End	54
E	North Haven W	50
F	North Haven E	174
G	South Haven E + around the corner	111
H	Common Gullery	48
I	Facing Ulva	39
-	North Coast (surveyed by boat)	2
TOTAL		1081

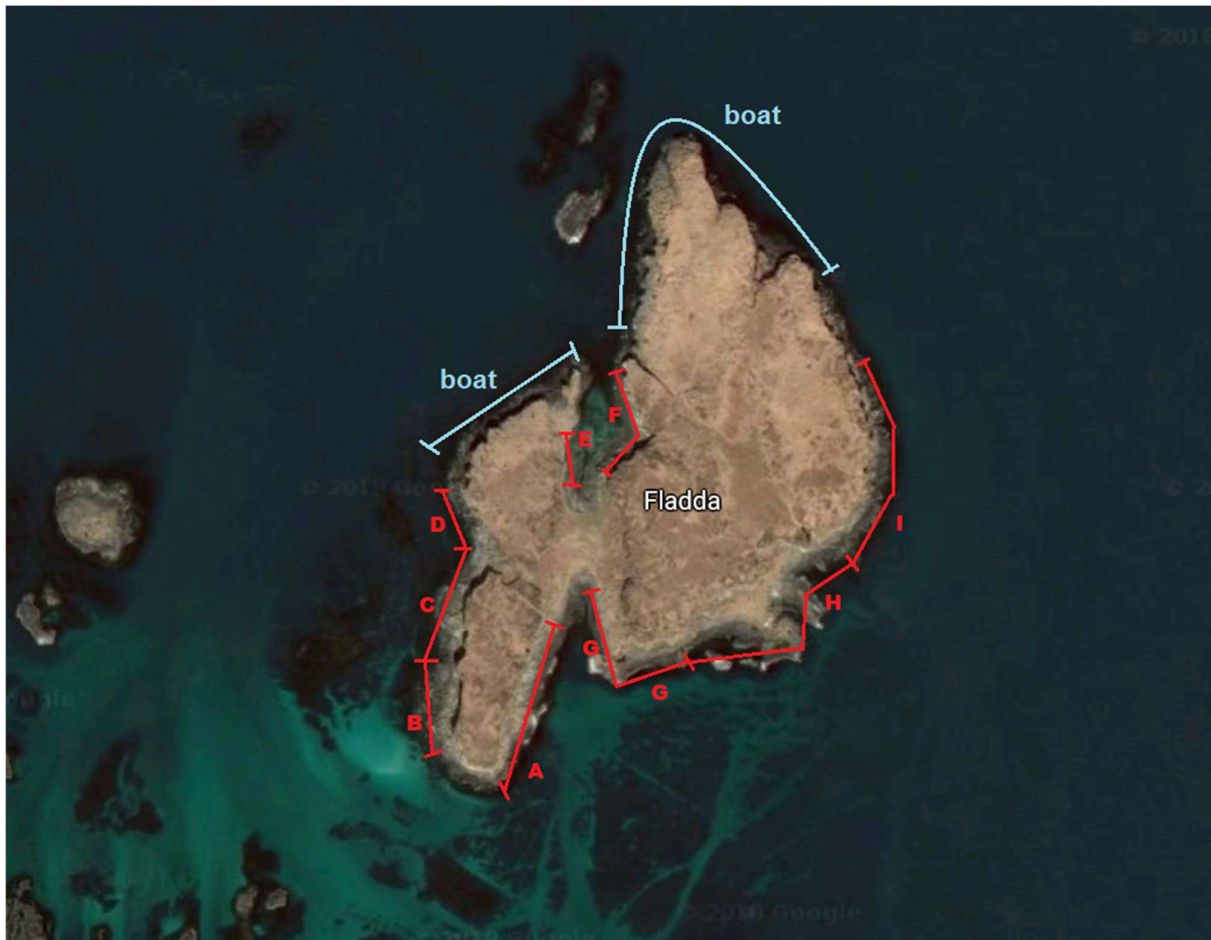


Figure 1. The ten sectors used to survey breeding shags on Fladda. Letters correspond to those provided in Table 1 and were counted on foot with the blue lined sectors surveyed by boat.

5. References

JNCC. 2016. European Shag Status and Trends. JNCC, Peterborough. Available online: <http://jncc.defra.gov.uk/page-2877> [Accessed 2 September 2018]

Mitchell, P.I., Newton, S.F., Ratcliffe, N. and Dunn, T.E. (eds.) 2004. *Seabird Populations of Britain and Ireland*. Poyser, London.

TIARG. 1999. *Treshnish Isles Auk Ringing Group Report for 1999*. TIARG, UK.

Walsh, P.M., Halley, D.J., Harris, M.P., del Nevo, A., Sim, I.M.W., & Tasker, M.L. 1995. *Seabird monitoring handbook for Britain and Ireland*. JNCC / RSPB / ITE / Seabird Group, Peterborough.



Colour-ringed Shag '153' (Andrew Carter)

Retrapping adults for survival project

1. Introduction

Breeding adult Storm Petrels and Shags are ringed annually by TIARG in specific sections of the colonies on Lunga. Since 2006 the conservation value of this aspect of TIARG's ringing programme has been much increased by its inclusion into the British Trust for Ornithology's Retrap Adult Survival (RAS) monitoring programme. Adult Shags are now fitted with a uniquely numbered colour ring; many of these birds have been metal ringed already as pulli by TIARG. Over 300 Shags are now individually identifiable in the field without the need for recapture. Adult Storm Petrels continue to be BTO metal ringed only.

2. What is RAS

RAS aims to provide information on adult survival. RAS uses re-sightings of colour-marked individuals and captures of adult birds to calculate what proportion survives each year. The aim of a RAS project is to re-capture (or re-sight, Shag only), within a defined area, a minimum of 30 adult birds ringed in previous years. TIARG tries to avoid big changes in effort between years and keep a record of their catching effort (number of visits made and number of hours spent re-capturing and / or re-sighting). This means that survival can be calculated by the British Trust for Ornithology (BTO) more precisely from the information collected.

3. Study areas and Methods

3.1. Shag RAS

TIARG's Shag RAS study areas extend along Lunga's north-west coast and section of the east coast.

All adults are caught by hand in the colonies and usually at the nest. A single engraved darvic colour-ring is placed on the bird's left leg. The colour-ring is either:

- 1) lime (light green) with a black engraved number between 100 to 299, read from top to bottom and repeated twice on the ring; or
- 2) dark green with a white engraved number between 300 to 499, read from top to bottom and repeated twice on the ring

During the annual one week visit to Lunga by TIARG at the end of June, expedition members record the details of any colour-ringed Shags seen, both during targeted searches of the colonies for marked birds, and at all other times.

3.2. Storm Petrel RAS

TIARG operate two Storm Petrel RASs on the north-east corner of Lunga. All adults are mist netted (without tape lure) in colonies. The study area of one RAS is the Village where a survey visit uses a line of three 18 m four shelf mist nets erected adjacent to the south side of the Cottages. The study area of the second RAS is the Boulder Beach. Here a survey visit comprises of using two or three 18 m nets positioned at the northern end or alternatively one 18 m or two 12 m nets towards the colony's southern end (below the 'latrine').

During the annual one week visit to Lunga by TIARG at the end of June, expedition members attempt one night of mist netting at each of the three netting locations, or more if required to meet the sample of Storm Petrels required.

4. Results

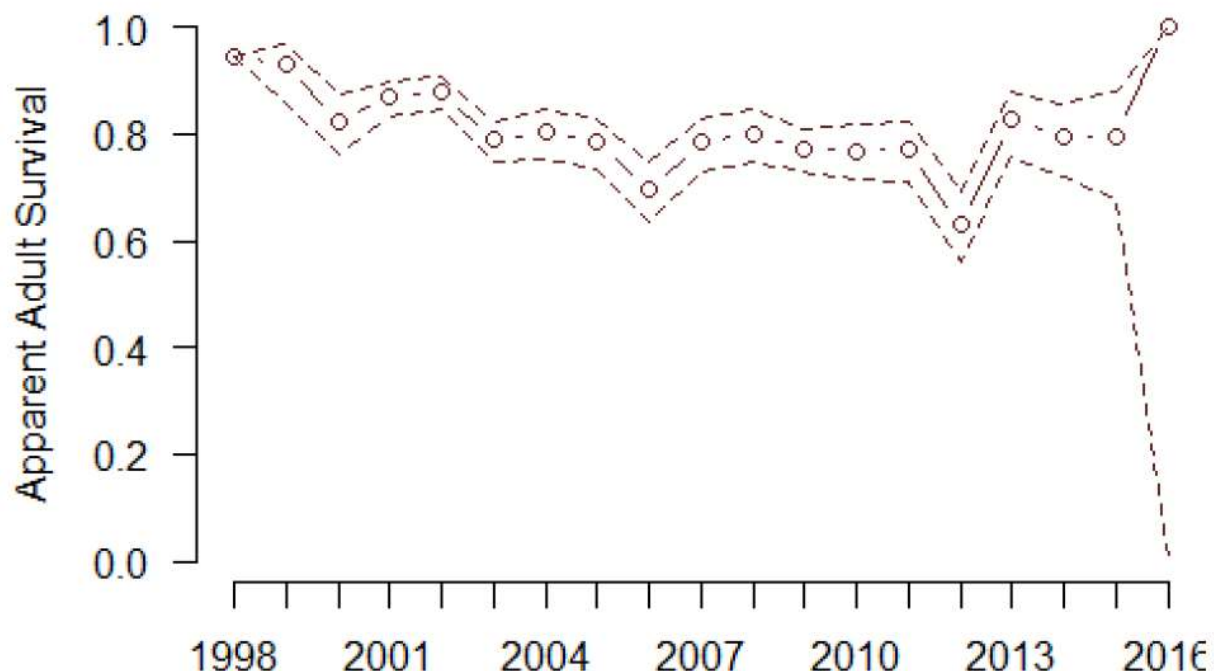
The BTO has provided TIARG with project specific feedback on the results of the three RAS studies up to and including 2016. The results are presented here alongside the latest national trend for comparison. National survival trends are published as part of the BirdTrends report (www.bto.org/birdtrends) and on the RAS website (www.bto.org/ras-results).

4.1. Storm Petrel RAS

4.1.1. National trend

TIARG's RASs are two of three active projects for Storm Petrel in the UK, the other is on Priest Island, Highland. The national trend is generated from two historical and three current projects (Figure 1). The quality of the national trend is considered to be 'Good'. Following a prolonged, gradual decline, Storm Petrel survival rates exhibited a sharp increase in survival between 2013 and 2014 but declined again slightly between 2014 and 2015 before a second marked increase between 2016 and 2017.

Figure 1. The RAS programme national trend in the apparent adult survival of Storm Petrel



On viewing the graphs in this paper, the following three points should be noted:

- That the graphs end at 2016; this is because the RAS programmes calculate survival between years, so the last point is the survival from 2016 to 2017.
- The graphs show "Apparent Adult Survival", defined as the probability that an adult bird alive in the previous year survives and returns to the study area. The analysis accounts for the fact that birds which are present may not be seen every season, but birds permanently emigrating from the study area will be presumed dead, thus the true survival rate may be slightly higher than the figures presented here.
- The dotted lines show the upper and lower 95% Confidence Limits around the average estimate (solid line and points). The closer these lines are to the solid line, the more confidence we have in the accuracy of the survival rates.

4.1.2. Boulder Beach RAS and The Village RAS

The trend in the apparent adult survival at the TIARG's two Storm Petrel RASs are shown in Figures 2 and 3. Interpretation of these trends are provided once in every three years by the British Trust for Ornithology, with the expectation of feedback in 2019.

Figure 2. The trend in the apparent adult survival of Storm Petrel at Boulder Beach RAS study

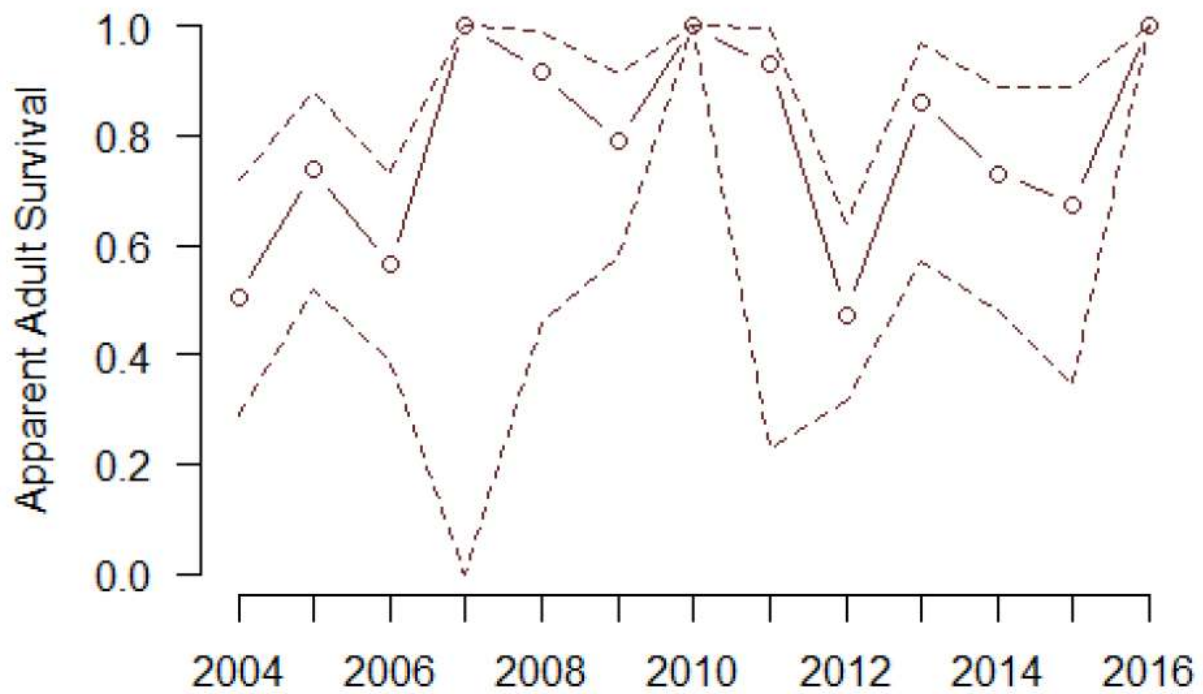
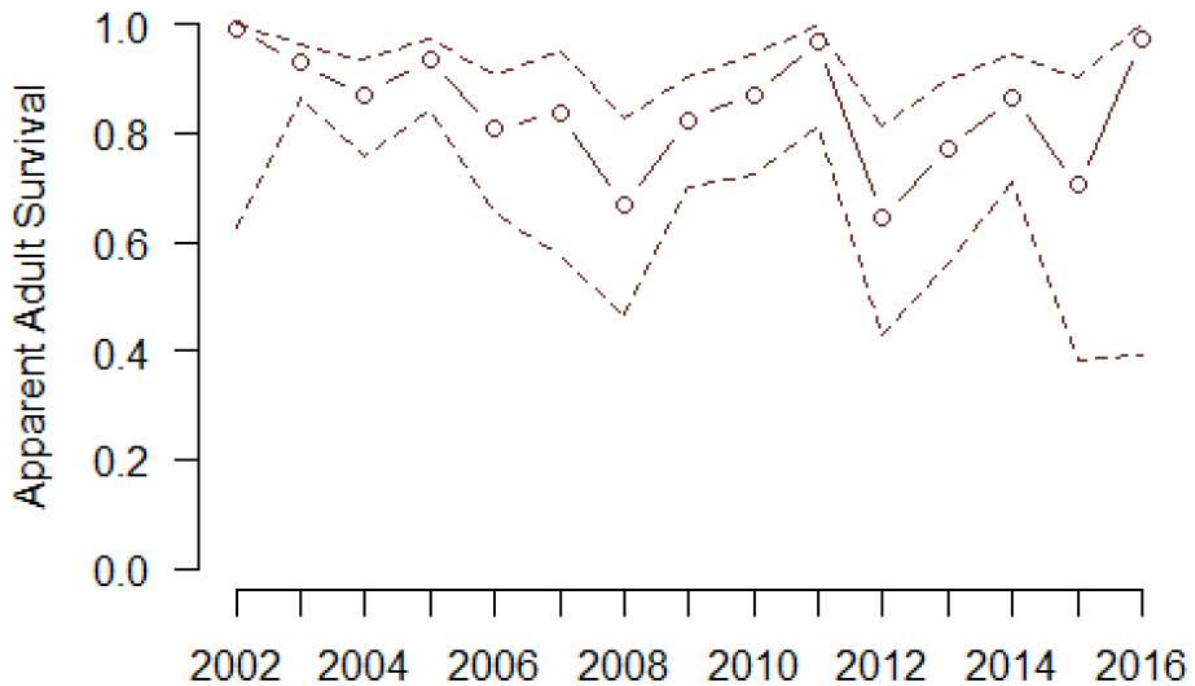


Figure 3. The trend in the apparent adult survival of Storm Petrel at the Village RAS study



A summary of the results for the TIARG Storm Petrel RAS studies are presented in Table 1. On viewing the summary results tabulations, the following three points should be noted:

- The 'mean survival rate' is the probability that an individual bird alive in one breeding season will survive to the next averaged across all years and sites; and,
- The 'mean re-encounter rate' is the probability that an individual (which is alive and living in the study area) will be either recaptured or resighted.

Table 1: Summary results for the two Storm Petrel RAS studies

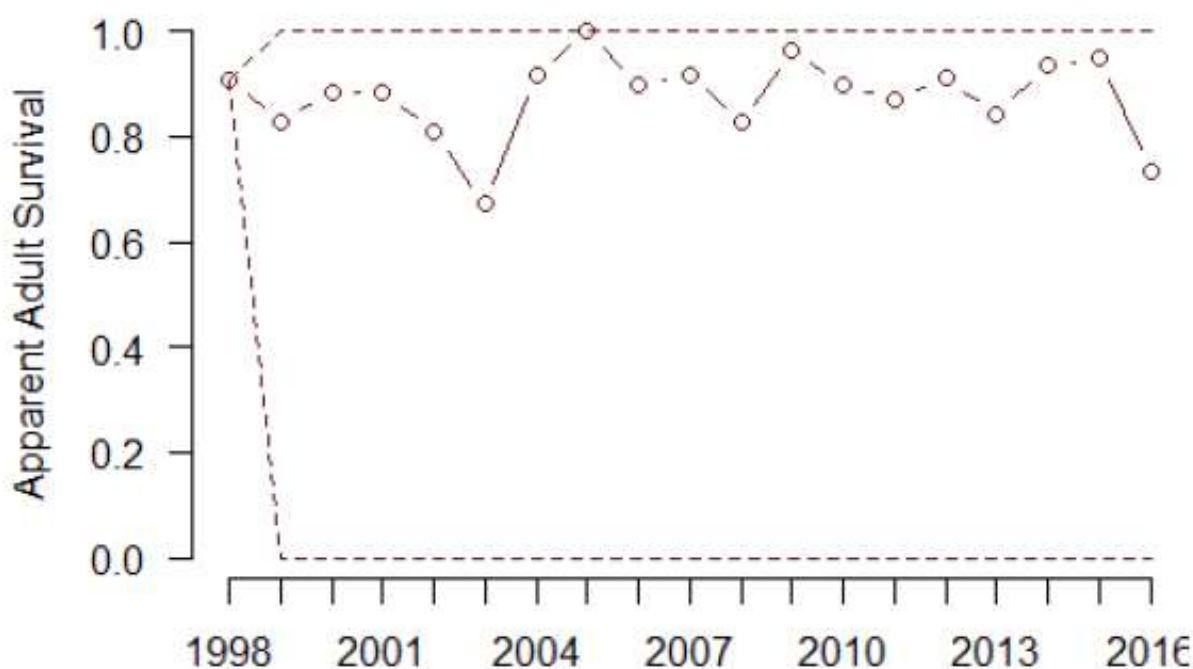
	Boulder Beach RAS	The Village RAS
Estimate of average annual adult survival across all projects	78%	78%
Estimate of average annual adult survival from TIARG project	81%	82%
Estimate of TIARG project's average annual recapture probability	8%	17%

4.2. Shag RAS

4.2.1. National trend

TIARG's RAS is one of two active projects for Shag. The national trend is generated from two historical projects and TIARG's project (and not the other active project as yet). The quality of the national trend is considered to be 'Uncertain'. As one project began the year after the previous two ended, it has been difficult to calculate appropriate confidence limits for the last few years. The long-term trend (1998-2017) is stable.

Figure 4. The RAS programme national trend in the apparent adult survival of Shag



4.2.2. TIARG RAS

The trend in the apparent adult survival at the TIARG's Shag RAS is shown in Figure 5. Interpretation of the trend is provided once in every three years by the British Trust for Ornithology, with the expectation of feedback in 2019.

A summary of the results for the TIARG Shag RAS study are presented in Table 2.

Figure 5. The trend in the apparent adult survival of Shag for the RAS study on Lunga

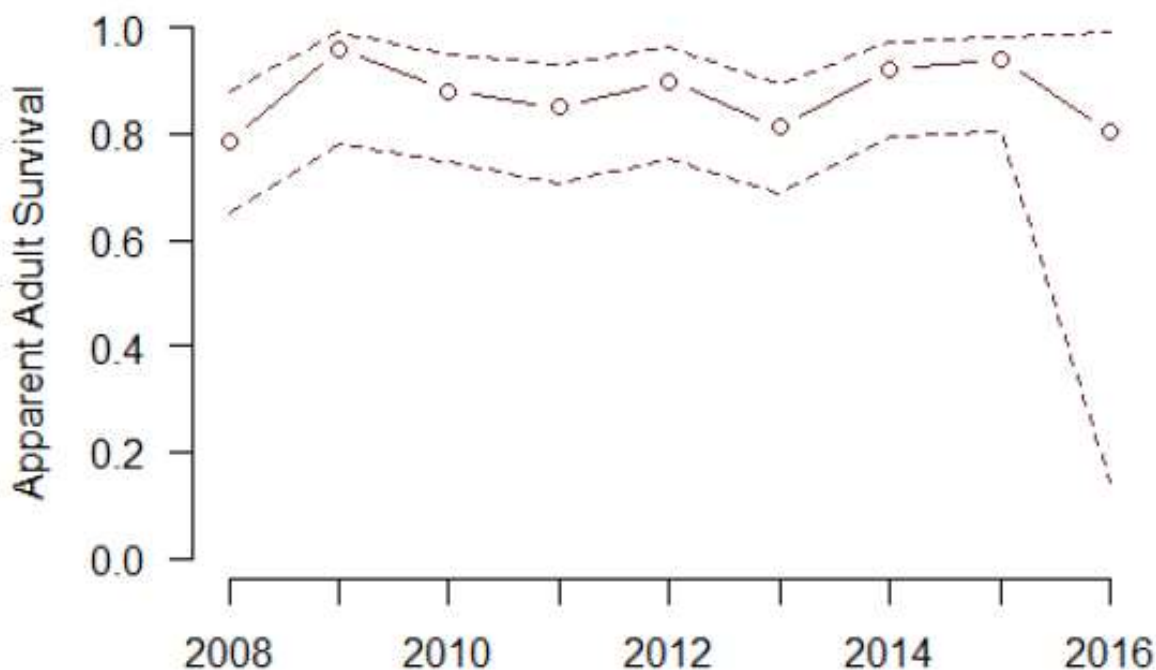


Table 2: Summary results for the Shag RAS studies for the two sexes

	Shag RAS	
	Males	Females
Estimate of average annual adult survival across all projects	78%	81%
Estimate of average annual adult survival from TIARG project	83%	89%
Estimate of TIARG project's average annual recapture probability	63%	55%

5. Acknowledgements

RAS is supported by a partnership between the BTO and the Joint Nature Conservation Committee (JNCC) on behalf of the country agencies (Natural England, Natural Resources Wales, Scottish Natural Heritage and the Department of Agriculture, Environment and Rural Affairs, Northern Ireland). It is also part of the BTO Ringing Scheme which is funded by the BTO/JNCC Partnership, The National Parks and Wildlife Service (Ireland) and the ringers themselves.

Treshnish Isles ringing totals 1971 – 2018

SPECIES	1971	1974	1976	1977	1978	1980	1982	1984	1986	1989	1991	1993	1994	1995	1996	1997	1998	1999	2000
Eider																			
Fulmar	17	6	4		8	21	14	18	7	21	15		4	27	38	7	24	23	12
Manx Shearwater		2	13		4	4	1	8					9	1		2	1	4	4
Storm Petrel		254	22		1	283		203	800	411	975	75	440	536	331	1104	741	732	414
Shag	150	7	10	10	24	80	50	160		40	10		10	59	96	99	150	100	59
Buzzard						1	2												
Corncrake																			
Oystercatcher		1				1	4	2										2	
Ringed Plover																			
Common Sandpiper																	1		
Great Skua																	1		
Kittiwake						1	1	1	2	2	4		6	10	1	50	41	23	13
Common Gull																	4		5
Lesser Black-b Gull																			
Herring Gull	6	1			14	46	35	56	4	4	3		5	24	19	52	73	39	15
Great Black-b. Gull	3	6	3	7	6	22	14	35		22	15		6	25	16	48	19	16	2
Guillemot	32	20	14		66	502	137	364	180	250	306		109	498	349	472	503	507	892
Razorbill	65	72	90		115	266	218	236	151	103	64		81	101	105	98	112	102	133
Black Guillemot																1			
Puffin	70	198	271		203	200	208	182	174	160	114		358	236	301	267	398	274	389
Hooded Crow																			
Willow Warbler														1					
Wren														3					
Starling																			
Stonechat																			
Wheatear			12					1	3						5	24	37	22	50
Pied Wagtail													1	3	2				
Meadow Pipit														4		1			12
Rock Pipit									5	1				2	4	2	4	2	1
Twite																2			
TOTAL	343	567	439	17	441	1427	684	1266	1326	1014	1506	75	1029	1530	1267	2229	2109	1846	2001

NOTES: (1) Data for 1971 - 1995 extracted from Walker & Cooper (1996). This may not include all rings used.
(2) Ringing data for a three-day visit in 1972 are not available.

Treshnish ringing totals 1971 – 2018 (continued)

SPECIES	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Eider				1															1
Fulmar	25	22	25	47	14	15	8						1		1		1		425
Manx Shearwater			2		1	1	2		4	9	3	18	3	13	13	5	8	2	135
Storm Petrel	1030	15	360	83	491	962	21	118	403	293	202	212	191	448	978	258	289	426	14102
Shag	37	97	99	200	77	35	141	124	53	116	67	120	115	90	148	165	200	124	3123
Buzzard																			3
Corncrake					1						2								3
Oystercatcher	1						4				2	2	1	2	1	4		1	28
Ringed Plover					1		1											1	3
Common Sandpiper						1	1	1									1		5
Great Skua		1	1		1			2	4		2			2			2	1	17
Kittiwake	11	3	2	21	15	14	16	3	4	3	8			16	12	14	22	11	330
Common Gull	11	11	6		16	8								4	1	1			67
Lesser Black-b Gull								1		2	2				4	1			10
Herring Gull	11	11	8	11	8	1	11	7	20	11	8	7	3	4	3	8	4	2	534
Great Black-b. Gull	27	5	21	18	12	3	4	13	12	15	10	4	1	2	15	11	16	2	456
Common Tern						1													1
Arctic Tern														44	104	16		11	175
Guillemot	312	425	261	800	141	172	123	1	51	53	169	46	8	145	154	161	230	327	8780
Razorbill	31	110	56	147	37	33	34	5	6	7	8	2	2	32	23	17	40	65	2767
Black Guillemot	1																		2
Puffin	214	351	244	226	151	272	195	327	32	38	68	301	71	128	239	260	214	141	7495
Hooded Crow							1												1
Willow Warbler											1								2
Whitethroat											1								1
Sedge Warbler											2								2
Wren	1			2	4	2		2	1	1	2	6		2	1	3		2	32
Starling							3								1				4
Stonechat						2		1											3
Wheatear	24	2	2	2	7	1	2	4	2	4	5	10	4	7	11	3	3	3	250
Dunnock											1		1	1		2			5
Pied Wagtail							4				3	1			4				18
Meadow Pipit	1	4	1	3	5	1		4		1	2	15	3	1	5		1		64
Rock Pipit	2	2	2	2		3	21	10	1	2	4	3	1	2	11	1	4	2	94
Twite		1					1	1	1		3	1							10
TOTAL	1739	1060	1090	1563	982	1527	593	624	594	555	575	748	405	943	1729	930	1035	1122	38948

NOTES: (1) Ringing totals are not included for May and July 2018.

Recent ringing recoveries

STORM PETREL

TIARG have in the past year received details of 15 recoveries of birds ringed within Britain and Ireland in the months July - September and controlled by TIARG on Lunga in June - July 2017. These recoveries are summarised in the table below; all birds were ringed as adults (Euring code 4).

Ringing Site	No. of controls at:	Time interval (years, days)		Distance Km	Direction (degrees)
	Lunga	min	Max		
Fair Isle, Shetland	1		2 yr 305 d	503	350
Porth Iago, Llyn Peninsula, Gwynedd	1		11 yr 366 d	419	345
Bewan, North Ronaldsay, Orkney	2	340 d	348 d	401	217
Twinyess, North Ronaldsay, Orkney	1		8 yr 328 d	396	217
Burghead, Moray	1		337 d	222	233
Eilean nan Ron, Highland	2	1 yr 318 d	3 yr 335 d	262	209
Faraid Head, Highland	2	1 yr 1 d	2 yr 312 d	255	203
Fife Ness, Fife	2	333 d	11yr 346 d	238	276
Eilean An Taighe, Western Isles	2	361 d	7 yr 363 d	156	182
Ballyreagh, Londonderry	2	1 yr 350 d	2 yr 355 d	146	007

RECOVERIES OF OTHER SPECIES

All other recoveries relating to the Treshnish Isles received since the previous TIARG report are listed below.

Shag

1701609 1 29/6/2017 Lunga
 X 09/8/2017 Traigh na Cille, Kilninian, Isle of Mull, Argyll and Bute
 13 km 74 degs 41 days
 Dead on strand line. Eaten.

Shag

1701590 1 29/6/2017 Lunga
 XF 03/1/2018 Isle of Barra, Western Isles
 85 km 311 degs 188 days
 Freshly dead - within a week.

Shag

1483593 8 28/6/2015 Lunga
 S 13/3/2018 Scolpaig, North Uist
 144 km 153 degs 986 days
 Re-sighting of a colour-ringed bird

Shag

1445789 1 25/6/2013 Lunga
 X 25/5/2018 An Snoig, Hynish, Isle of Tiree, Argyll and Bute
 31 km 260 degs 1795 days
 Ring only found.

Great Black-backed Gull

MA15802 1 02/7/2010 Lunga
 X 04/6/2018 Treshnish Isles
 0 km 0 degs 2894 days
 Dead for more than a week, not fresh. Bird found.

Razorbill

M77258 1 30/6/1996 Isle of Canna, near Mallaig, Highland
 R 25/6/2017 Lunga
 64 km 174 degs 7665 days

Puffin

ET80224 8 02/7/1998 Lunga
 XF 27/4/2018 Lunga
 0 km 0 degs 7239 days
 Freshly dead - within about a week. Bird found half eaten.

Puffin

EK29889 4 24/6/1991 Lunga
 X 27/6/2018 Lunga
 0 km 0 degs 9865 days
 Dead for more than a week, leg and ring only found. Possibly taken by bird of prey.

Greylag Goose

5271924 4F 16/11/2017 Cornabus, Islay, Argyll and Bute
 S 07/2/2018 Cornabus, Islay
 S 16/3/2018 Cornabus, Islay
 S 28/6/2018 Bac Mór
 92 km 350 degs 224 days
 Re-sighting by TIARG.

References

Harris, M.P., Heubeck, M., Newell, M.A. and Wanless, S. 2015. The need for year-specific correction factors when converting counts of individual common guillemots *Uria aalge* to breeding pairs. *Bird Study* 62: 276-279.

Gilbert, G. & Helmsley, D., 1996. *A survey of Storm Petrels (Hydrobates pelagicus) on the Treshnish Isles 1996*. Unpublished RSPB report, September 1996.

JNCC. 2016. *Seabird Population Trends and Causes of Change: 1986-2015 Report* (<http://jncc.defra.gov.uk/page-3201>). Joint Nature Conservation Committee. Updated September 2016. Accessed 26/08/18.

Mitchell, P.I., Newton, S.F., Ratcliffe, N. & Dunn, T.E., 2004. *Seabird populations of Britain and Ireland: results of the Seabird 2000 census*. T. & A.D. Poyser, London.

Offer, D., 2000. Manx Shearwater Survey 2000. In Ward, R.M., 2000. *Treshnish Isles Auk Ringing Group Report for 2000*. Treshnish isles Auk Ringing Group.

Ottvall, R., 1999. Female Corncrake (*Crex crex*) singing in the wild. *J. Ornithol.* 140, 453-456.

Ratcliffe, N., Vaughan, D., Whyte, C. & Shepherd, M., 1998. The development of playback census methods for Storm Petrels (*Hydrobates pelagicus*) *Bird Study* 45:302-312.

Robinson, R.A., Leech, D.I. & Clark, J.A. 2016. *The Online Demography Report: Bird ringing and nest recording in Britain & Ireland in 2016*. BTO, Thetford (<http://www.bto.org/ringing-report>, created on 10-August-2017)

Walker, S. & Cooper, D., 1996. *Birds on the Treshnish Isles 1971-1995*. Unpublished report by the Treshnish Isles Auk Ringing Group.

Varham, K., 2008. Preventing rats becoming established on Nightingale Island: Recommendations for monitoring and contingency. In *Report from Rat Eradication Workshop*, Stanley, Falkland Islands, 08/09 September 2008 drafted by Clare Miller (RSPB).

Acknowledgements

Firstly, we would like to express our appreciation to the owners of the Treshnish Isles, THE HEBRIDEAN TRUST (www.hebrideantrust.org) for permission and funding to allow our continuing studies to be made on these fascinating islands.

We thank Iain Morrison and his family, for providing our transportation between Mull and Lunga, between the islands of the Treshnish Isles (<http://www.turusmara.com/>), and are grateful for his continuing advice, co-operation and help.

Any comments on this report, and suggestions for improvements for relaying information required by conservation agencies, are much welcomed.



Razorbill (Andrew Carter)

The Expeditions 1971 – 2018

A list of participants through the years, with brief notes on the work performed

- 1971** Barry Lawson, Peter Deans, John Eatough, Shiela Anderson, Dick Hansford.
Full census and ringing.
This was the first trip and the Treshnish Isles were included in a “mopping up” of islands not fully covered during the 1969/70 “Operation Seafarer” National Seabird Census.

- 1972** Barry Lawson, Geoff Ward, Bevan Craddock.
Part census and ringing
Forced to leave after three days due to bad weather.

- 1973** Barry Lawson, Peter Deans, John Hodson, Geoff Cope.
Trip abandoned – unable to land due to rough seas

- 1974** Barry Lawson, Peter Deans, Geoff Ward, John Hodson, Geoff Cope, Tom Pool.
Census of Lunga and ringing
An RAF Helicopter landed a photographer onto Harp Rock, causing many bird casualties.

- 1976** Barry Lawson, Peter Deans, Geoff Ward, John Hodson, Geoff Cope, Tony Kilgallen.
Full census Lunga – Fladda and ringing.
Very hot summer.

- 1977** Barry Lawson, John Hodson.
Ringing only.
Called in on “Corryvreckan” boat cruise.

- 1978** Barry Lawson, Peter Deans, John Hodson, Simon Walker.
Full census Lunga and Sgeir a’ Chaisteil and ringing.

- 1980** Barry Lawson, Peter Deans, John Hodson, Simon Walker, David Lawson.
Ringing only

- 1981** Geoff Ward, Geoff Cope.
Part census and photography

- 1982** Barry Lawson, Peter Deans, John Hodson, Simon Walker, Andrew Lawson.
Ringing only.

- 1984** Barry Lawson, Peter Deans, John Hodson, Simon Walker.
Ringing only.

- 1986** Barry Lawson, Peter Deans, Geoff Ward, John Hodson, Simon Walker, Andrew Lawson.
Full census with ringing

- 1989** Barry Lawson, Peter Deans, John Hodson, Simon Walker.
Ringing only.

- 1991** Barry Lawson, Peter Deans, Simon Walker, David & Andrew Lawson, Jan Densham.
Ringing only.

- 1993** Roger Broad *et al.* (Scottish Natural Heritage charter)
Full census of The Dutchman’s, Lunga, Sgeir a’ Chaisteil and Fladda.
Chris Redfern *et al.*
Storm Petrel ringing.

The Expeditions 1971 – 2018 (continued)

- 1994** Simon Walker, Mike Smith, Dennis Cooper, Jan Densham, Danny Lenain.
Full census Lunga and Sgeir a' Chaisteil and ringing.
Chris Redfern *et al.*
Storm Petrel ringing.
- 1995** Simon Walker, Mike Smith, Dennis Cooper, Jan Densham, Fergus Henderson.
Full census of Lunga and Sgeir a' Chaisteil and ringing.
- 1996** Simon Walker, Mike Smith, Dennis Cooper, Danny Lenain, Robin Ward
Full census of Lunga and Sgeir a' Chaisteil and ringing.
- 1997** Simon Walker, Dennis Cooper, Robin Ward, Damian Offer, Steve Willis, Chris Spray
Full census of Lunga – Fladda and ringing.
- 1998** Simon Walker, John Hodson, Dennis Cooper, Robin Ward, Damian Offer, Steve Willis,
Steve Worwood
Full census of Lunga – Fladda and ringing.
- 1999**
Week 1 Simon Walker, Dennis Cooper, Steve Willis, John Osbourne.
Week 2 Simon Walker, John Hodson, Dennis Cooper, Robin Ward, Damian Offer, Jan
Densham
Full census of the Treshnish Isles for *Seabird 2000* and ringing
- 2000**
Week 1 John Hodson, Dennis Cooper, Damian Offer
Full census of Manx Shearwater on Lunga for *Seabird 2000*. Limited passerine ringing. (May).
Week 2 Simon Walker, John Hodson, Dennis Cooper, Robin Ward, Steve Willis, Andrew Carter,
Steve Woodward
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Tern census for
Seabird 2000. Ringing.
- 2001** Simon Walker, John Hodson, Dennis Cooper, Robin Ward, Damian Offer, Andrew Carter
Completion of census for *Seabird 2000*. Full census of Lunga, Sgeir a' Chaisteil and the islands
between Lunga – Fladda. Ringing.
- 2002** Simon Walker, Robin Ward, Andrew Carter, Phil Bone, Sara Brown, Jackie Hay.
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2003** Simon Walker, John Hodson, Dennis Cooper, Robin Ward, Andrew Carter, Jackie Hay, Matt
Smith.
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2004** Simon Walker, Robin Ward, Andrew Carter, John Calladine, Tim Dixon, Shaun Micklewright,
Tina Wiffen.
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2005** Simon Walker, Robin Ward, Andrew Carter, Shaun Micklewright, Gareth Harris, George
Henderson, Tracé Williams.
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2006** Simon Walker, Dennis Cooper, Robin Ward, Andrew Carter, Shaun Micklewright, John
Calladine, Tim Dixon, George Henderson.
Full census of Lunga, Sgeir a' Chaisteil, Cairn na Burgh More, Cairn na Burgh Beg and the islands
between Lunga – Fladda. Ringing.

The Expeditions 1971 – 2018 (continued)

- 2007** Simon Walker, Robin Ward, Andrew Carter, Shaun Micklewright, George Henderson, Tim Dixon, Tracé Williams.
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2008** Simon Walker, John Hodson, Robin Ward, Andrew Carter, Shaun Micklewright, George Henderson, Tim Dixon, John Calladine.
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2009** John Hodson, Robin Ward, Dennis Cooper, Andrew Carter, Shaun Micklewright, Tim Dixon, Jurjen Annen, Claire Dovey.
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2010** John Hodson, Robin Ward, Andrew Carter, Shaun Micklewright, Tim Dixon, Tracé Williams, Jurjen Annen, Claire Dovey.
Full census of Lunga, Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2011** John Hodson, Robin Ward, Andrew Carter, Shaun Micklewright, Tim Dixon, George Henderson, Jurjen Annen, Claire Dovey.
Full census of Lunga, Sgeir a' Chaisteil, Bac Mór (from boat) and Bac Beag (from boat). Ringing.
- 2012** John Hodson, Robin Ward, Dennis Cooper, Tim Dixon, Steve Willis, Jurjen Annen, Claire Dovey, Richard Barnes, Simon Roberts.
Full census of Lunga and Sgeir a' Chaisteil. Ringing.
- 2013** John Hodson, Robin Ward, Dennis Cooper, Andrew Carter, Tim Dixon, Shaun Micklewright, Jurjen Annen, George Henderson.
Full census of Lunga and Sgeir a' Chaisteil. Ringing.
- 2014** John Hodson, Robin Ward, Andrew Carter, Tim Dixon, Shaun Micklewright, Jurjen Annen, Claire Dovey, Cerian Thomas.
Full census of Lunga and Sgeir a' Chaisteil. Ringing.
- 2015** Robin Ward, Andrew Carter, Tim Dixon, Shaun Micklewright, John Calladine, Stuart Brown, Chris Heward, Daniel Plunkett.
Full census of Lunga and Sgeir a' Chaisteil and the islands between Lunga – Fladda. Ringing.
- 2016** Robin Ward, Andrew Carter, Tim Dixon, Jurjen Annen, Chris Heward, Daniel Plunkett, Matt Smith, Lila Buckingham.
Full census of Lunga, Sgeir a' Chaisteil, Cairn na Burgh More, Cairn na Burgh Beg and the islands between Lunga – Fladda. Ringing.
- 2017** Robin Ward, Andrew Carter, Tim Dixon, Shaun Micklewright, George Henderson, Claire Dovey, Chris Heward, Lila Buckingham.
Full census of Lunga, Sgeir a' Chaisteil, Bac Mór (from boat), Bac Beag (from boat) and the islands between Lunga – Fladda. Ringing.
- 2018**
May Dennis Cooper, Tim Dixon, Jamie Dixon, Ross Johns, Matt Williams (For 24 hours: Robin & Judith Ward).
Full census of Manx Shearwater on Lunga for *Seabirds Count*. Limited ringing. (1 week).
June Robin Ward, Andrew Carter, Tim Dixon, Shaun Micklewright, Jurjen Annen, Chris Heward, Lila Buckingham, Emma Hughes.
Full census of the Treshnish Isles for *Seabirds Count*. Ringing. (1 week)
July Dennis Cooper, Tim Dixon, Chris Heward, Lila Buckingham, Daniel Plunkett, Jamie Dixon, Matt Williams, Nicci Cox, Carole Davis, Jacki Gittins, Thomas Hibbert, Peter Robinson, Chris Smith, Helen Stace.
Full census of Storm Petrel on the Treshnish Isles for *Seabirds Count*. Limited ringing. (2 weeks).

Ring series used on the Treshnish Isles since 1927*

SHAG RINGS	A2 RINGS	E RINGS	F RINGS	G RINGS	H RINGS	RAZORBILL RINGS	GUILLEMOT RINGS	MISC. RINGS
1078761 – 800	2010581 – 583	EF75001 – 500	FA50601 - 700	GH21301 – 350	HT03619	K10701 – 1000	R07001 – 100	1F4094 - 097
1080101 – 110	2101991 – 2000	EG23501 – 700	FB22601 – 700	GN85301 – 400	HT09001 – 004	K13001 – 300	R19401 – 20200	C331894 - 900
1087111 – 120	2121401 – 500	EG23721 – 780	FB23401 – 500	GJ35401 – 500	HT17871 – 890	M36341 – 350	R24001 – 26350	E196501 - 520
1105561 – 570	2167051 – 068	EG23801 – 999	FC52551 – 558	GJ76001 – 800	HT17931 – 940	M46501 – 800	R31601 – 900	JB44316
1123531 – 540	2170201 – 203	EG61000 – 500	FC52571	GJ99081 – 082	HT34021 – 030	M55001 – 500	R51501 – 2000	K039209 - 230
1123541 – 550	2238501 – 600	EG88501 – 9000	FC74501	GK34351 – 354	HT68201 – 210	M72451 – 800	R65501 – 6000	K419290 - 295
1123671 – 690	2261001 – 2350	EH33377 – 380	FH36101 – 200	GK50214 – 220	HT68221 – 226	M85501 – 800	R72501 – 4000	NA84296 - 299
1123961 – 970	2284001 – 5000	EH54501 – 55000	FR13606 – 636	GK50551 – 570	HT80301 – 400	M88001 – 300	T14001 – 5000	KX83101 - 106
1130701 - 800	2309901 – 10000	EH89256	FR14401 – 500	GK62985 – 990	HW05351 – 360	M92501 – 700	R73001 – 4000	KX83116 - 118
1159651 – 700	2311301 – 400	EH89260	FR51201 – 300	GK90821 – 840	HW06951 – 7000		T82001 – 300	RF10011-020
1163701 – 740	2311501 – 2000	EH98001 – 300	FR56351 – 400	GK91471 – 490	HW08994 – 09000		X39501 – 40000	LA59201-300
1168001 – 100	2348001 – 500	EK29501 – 900	FR76701 = 800	GM78756	HW37361		X56501 – 57000	DD90261-270
1170601 – 700	2236801 – 7000	EK72657 – 660	FS21478	GP13416 – 450	HW42996 - 3000		X63001 – 500	CBV601-700
1174201 - 300	2369301 – 400	EK91471 – 490	FS51016 – 500	GP47917	HW68101 – 110		X67501 – 68000	V711401-500
1187901 – 950	2405001 – 6000	EL19801 – 276	FS87001 – 100	GP62201 – 207	HW68161 – 170		X79501 – 80000	TJ18901-9000
1237401 – 450	2430701 – 900	EL52501 – 3000	FV10611 – 620	GP74501 – 75000	HW74971 – 990		X99001 – 500	BT09481-490
1322951 – 960	2436501 – 7000	EN22001 – 500	FV10646 – 650	GR44201 – 250	HW87211 – 225		Y09403 – 405	NV42851-860
1328481 – 490	2444501 – 5000	EP85608 – 612	FV54446 – 460		HW96181 - 200			SR49601-700
1350801 – 900	2446202 – 233	EP85687 – 700	FV62410		HW94907 – 913			A297482-500
1357901 – 8000	2455501 – 6000	ER03701 – 800	FV62416 – 226		MA12551 – 600			B229951-992
1366901 – 7000	2480001 – 500	ER48401 – 404	FV96681 – 684		MA15801 – 900			BV70669
1373751 – 3900	2513501 – 4000	ES64018 – 189	SS96101 – 300	A2 RINGS	MA44251 – 900			SV58551-600
1378401 – 8500	2538001 – 800	ET19501 – 700		(cont)				BV28661-670
1399601 – 700	2542001 – 3000	ET52501 – 3000		2664001 – 5000	SHAG RINGS			SV58601-616
1408301 – 500	2554001 – 500	ET80001 – 500		2679001 – 80000	(cont)			Z155001-100
1414301 – 500	2560001 – 1000	EW18001 – 500		2725001 – 6000	1497001 – 100			EL69255-300
1421701 – 800	2579001-80000	EW50001 – 500		640801 – 640900	1500201 - 300			
1417001 – 7100	2605001 – 5500	EX12501 – 3000		2627701 - 800	1701501 - 2000			
1445601 – 800	2624001 – 5000	EY32001 - 500			1118766 - 789			
1491001 – 100	2650101 – 61000	EZ30001 – 1000						

*All rings series known (to TIARG) to have been used on the Treshnish Isles are documented irrespective of ring ownership.