

# Treshnish Isles Auk Ringing Group Report 2022



27th June – 2nd July 2022

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November 2022

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## Introduction

Since 1971, Treshnish Isles Auk Ringing Group (TIARG) has monitored the breeding seabird populations of the Treshnish Isles, Argyll (Figure 1), through ringing and census work. 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 (<http://tiarg.org>). This report summarises the results of the Group's 46<sup>th</sup> expedition to the Treshnish Isles, during 27<sup>th</sup> June – 2<sup>nd</sup> July 2022.

The Treshnish Isles are designated as a Special Protection Area (SPA) for internationally important populations of breeding storm petrel *Hydrobates pelagicus* and wintering barnacle geese *Branta leucopsis*. The Treshnish Isles are also noted as nationally important for their seabird breeding colony and breeding population of grey seals *Halichoerus grypus*.

## Survey methods

The 2022 expedition was two days shorter than TIARG's usual visit, due to rough seas on our intended day of arrival (25<sup>th</sup> June). While our delayed arrival did not prevent completion of the seabird census, the weather in the days preceding our visit may have impacted the seabird numbers present on the islands. In addition, our reduced time on the island may have led to reduced detection rates for species that are recorded incidentally.

Unfortunately, TIARG were unable to undertake any bird ringing during the 2022 expedition as, due to a recent outbreak of Highly Pathogenic Avian Influenza (HPAI) in the UK (Scottish Government 2022), NatureScot suspended all ringing activities at seabird colonies in Scotland from the 17<sup>th</sup> June 2022. Therefore, the 2022 expedition largely focussed on the annual seabird census. The seabird census was of particular importance during 2022 to monitor for signs of HPAI on the Treshnish Isles and to assess any potential impacts of the high mortality of auks observed in the UK during the 2021-22 non-breeding season (Fullick *et al.* 2022). In addition to the census, the team were able to record resightings of colour-ringed shag *Gulosus aristotelis* marked in previous years as part of a Retrapping Adults for Survival (RAS) study.

Fieldwork was centred upon Lunga and Sgeir a' Chaisteil, where the annual full seabird census was carried out. TIARG census and ringing data are submitted to the Seabird Monitoring Programme (JNCC) and the National Ringing Database (BTO), respectively. The data supplied are of great conservation value, as they are the sole means of monitoring the seabirds that breed on the Treshnish Isles.

Methods for the annual seabird census on Lunga and Sgeir a' Chaisteil followed those from Seabirds Count (JNCC 2022) and Walsh *et al.* (1995). Counts were summed for each area of Lunga and Sgeir a' Chaisteil (Figure 2). It is noted that our survey timings do not overlap with the preferred survey period stated in Seabirds Count for all species, as TIARG are generally only able to visit the islands for one week per year. Seabird counts from other islands within the archipelago were boat-based, thus may be less accurate than those of the main islands. During 2022, we did not survey (by boat or other means) Bac Mòr, Bac Beag, Cairn na Burgh Mòr or Cairn na Burgh Beag. Storm petrel and Manx shearwater *Puffinus puffinus* are not surveyed as part of our annual census.

Other sightings were recorded incidentally during the seabird census.

## Acknowledgements

Thank you to TIARG members, past and present, for the time and effort they have spent collecting data over the last 50 years. We are extremely grateful for the financial support, access permissions and boat usage for visiting the smaller islands, provided by the Hebridean Trust ([www.hebrideantrust.org](http://www.hebrideantrust.org)). We thank Iain Morrison, Colin Morrison, Fergus Reade, and everyone else at Turus Mara (<http://www.turusmara.com/>) for providing transportation between Mull and Lunga, between the islands of the Treshnish Isles and their continued advice and assistance.



Expedition participants (left to right): Shaun Micklewright, Andrew Carter, Helen Stace, Tim Dixon, Lila Buckingham & Chris Heward (Colin Morrison)

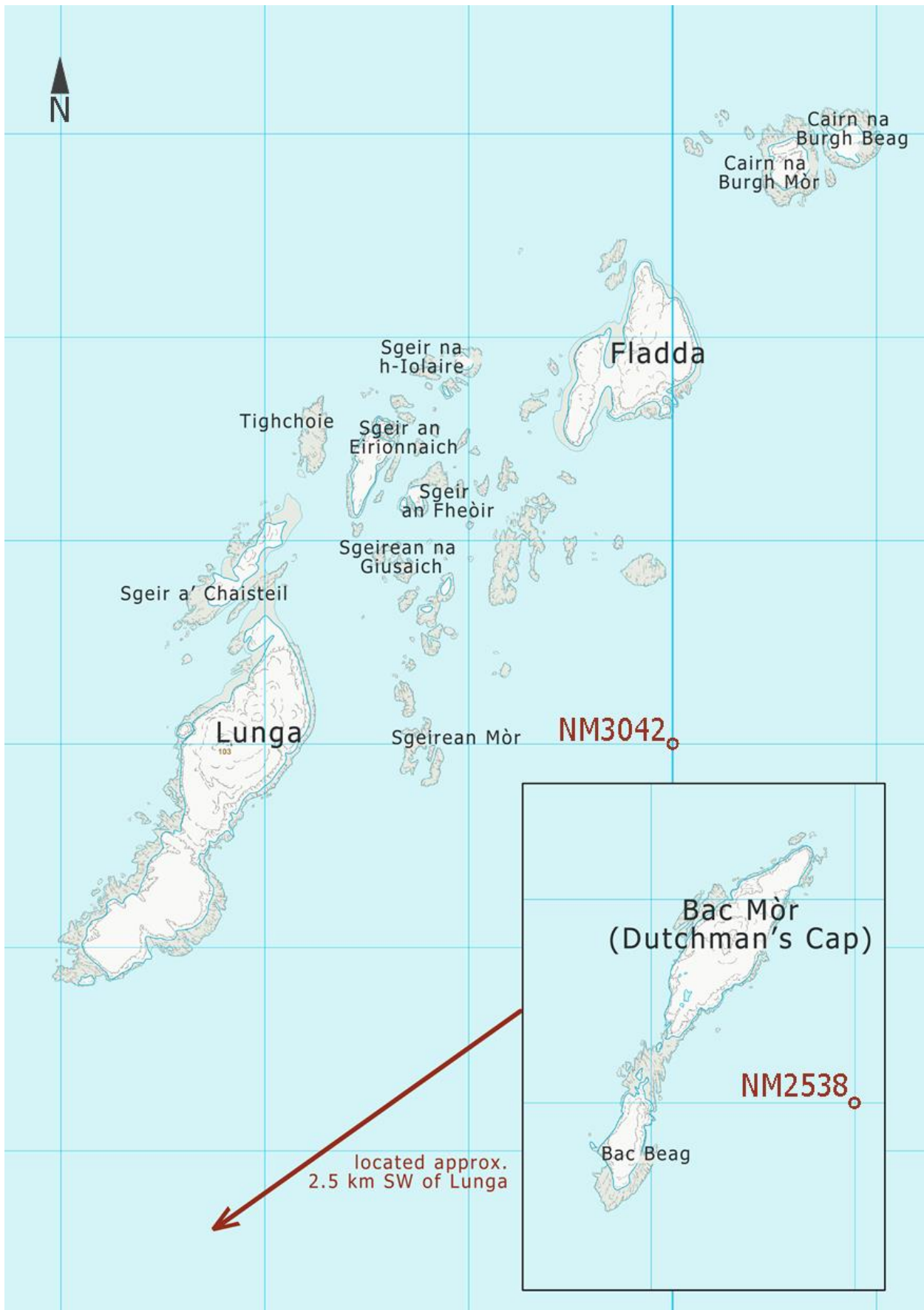


Figure 1. Map of the Treshnish Isles. (Grid squares = 1 km).





Figure 2. Map of census zones on Lunga and Sgeir a' Chaisteil. (Grid squares = 1 km).

## Annual seabird census

This section highlights the results of our annual seabird census. Summarised census data are provided in Tables 2 and 3, with recent abundance trends for Lunga provided in Figure 3. Other seabirds, such as storm petrel and Manx shearwater, which are not comprehensively surveyed as part of the annual census, feature in the systematic species list from page 12.

### **Kittiwake** *Rissa tridactyla*

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

There were 963 apparently occupied nests on Lunga, where the main colony is located at Harp Rock. Recent trends indicate that the number of kittiwakes breeding on Lunga declined between 2000 – 2013 (Figure 3a). Since 2013, numbers have increased to approximately the same level as counted during 2000 (Figure 3a). In addition to breeding birds, on the 29<sup>th</sup> June 2022, 320 individuals were dispersed between roosts on Sgeir an Eirionnaich and the intertidal rocks off Sgeir a' Chaisteil.



Kittiwake with chick (Andrew Carter)

### **Common gull** *Larus canus*

*Regularly breeding on Fladda, in small numbers only.*

As in previous years, no records of breeding on Lunga or Sgeir a' Chaisteil during 2022. On the 28<sup>th</sup> June, three adult common gulls were seen around 'Dirty Inlet' and the puffin lawns (area 12). On the 1<sup>st</sup> July, two common gulls were seen Sgeir a' Chaisteil and ten were seen on the low-lying basalt outcrop on the south-east coast of Fladda, where breeding has been confirmed in previous years.



**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).*

There were seven apparently occupied great black-backed gull territories on Lunga during 2022 (Table 2). The low numbers of great black-backed gulls observed breeding on Lunga follows a marked decline in population since the early 2000s (Figure 3b). Outside of the census area, breeding was recorded on Sgeir an Eirionnaich (at least twelve pairs and chicks seen), Fladda (at least eight pairs and chicks seen), Sgeir an Fheòir (at least five pairs). These smaller islands were not landed on, so these estimates are likely to be a conservative estimate.

**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).*

Two occupied territories (two separate broods of chicks, three adults and one freshly dead adult) were counted in Area 8 on Lunga during 2022 (Table 2). The low numbers of herring gulls now breeding on Lunga follows a marked decline in population since the early 2000s (Figure 3c). There were up to 20 adult non-breeders seen loafing on Corran Lunga and up to six pairs seen flying over Fladda, but no birds were observed occupying territories elsewhere on Sgeir an Fheòir, Sgeirean na Guisaich or Sgeir na h-lolaire.

**Lesser black-backed gull** *Larus fuscus*

*Previously a regular breeding species.*

No breeding records on Lunga or Sgeir a' Chaisteil. Up to nine adults were observed loafing on Corran Lunga/Boulder Beach (Figure 2) and are likely to be failed or non-breeders.

**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).*

No records in 2022.

**Arctic tern** *Sterna paradisaea*

*A regular breeding species, but intermittently absent.*

No records in 2022.

**Great skua** *Stercorarius skua*

*A regular breeding population has been established since at least 1998 (first confirmed breeding record on Fladda, AOTs since 1996).*

There were three apparently occupied territories on Lunga during 2022 (Table 2), one on the flat lowland to the south of Tarbet, the other two on South End (Figure 2). Sightings from Lunga would suggest Fladda supports at least two apparently occupied territories.

**Common guillemot** *Uria aalge*

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

A total of 15391 individual adult common guillemots were counted on Lunga and Sgeir a' Chaisteil during 2022 (Table 2). Recent trends indicate that the number of common guillemots breeding on Lunga has been increasing since around 2015 (Figure 3d).

**Razorbill** *Alca torda*

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

702 adult razorbills were counted on Lunga and Sgeir a' Chaisteil during 2022 (Table 2). Recent trends indicate that razorbill numbers decreased suddenly between 2008 and 2009, but have been increasing relatively steadily since then (Figure 3e).



Razorbill (Andrew Carter)

**Black guillemot** *Cepphus 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).*

Four adult birds were observed on the water surrounding Lunga and Sgeir a' Chaisteil during 2022 (Table 2), one of which (in Area 8; Figure 2) was observed carrying fish to a potential nest site. Adult birds were also observed on Fheòir (1 individual), Fladda (6 individuals) and Sgeirean na Giusaich (2 individuals).

**Puffin** *Fratercula arctica*

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

4917 apparently occupied burrows were counted on Lunga and Sgeir a' Chaisteil during 2022 (Table 2). Recent trends indicate that this species has been increasing since the early 2000s, and is now almost five times greater than the lowest count recorded in 2003 (Figure 3f).

**Fulmar** *Fulmarus glacialis*

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

The breeding population for Lunga and Sgeir a' Chaisteil was estimated at 261 pairs, based upon apparently occupied sites (AOS). Recent trends indicate that the numbers of fulmars breeding on the Treshnish Isles have been declining since the early 1990s (Figure 3g). At least six fulmar AOSs were present on Fladda, seen during a round trip of the island via dinghy.

**Shag** *Gulosus aristotelis*

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

There were 266 apparently occupied nests counted on Lunga and 7 on Sgeir a' Chaisteil. It is likely that this count is an underestimate of the 2022 breeding population, as it appeared that many shags had already finished breeding by the time of the census. This was apparent from both the number of empty nests that appeared to have been recently vacated and the presence of multiple juvenile individuals within and around the colony. It is therefore difficult to put the 2022 count into context with other recent counts, but prior to 2022 shag numbers appeared to be increasing on the Treshnish Isles (Figure 3h). Breeding was also confirmed on Fladda, but the population on this island was not counted during 2022. Although TIARG did not undertake any bird handling activities during 2022, several colour-ringed individuals were re-sighted, contributing to our long-term RAS dataset (Table 3).

**Table 1.** Annual total number of shag re-sightings/retraps since the start of the RAS in 2006.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
No. of re-encounters		32	12	80	14	56	54	81	59
Year	2015	2016	2017	2018	2019	2020	2021	2022	
No. of re-encounters	62	92	103	80	85	32	84	26	



A colour-ringed shag (Andrew Carter)

**Table 2.** Breeding seabird numbers for each census zone of Lunga and Sgeir a' Chaisteil. For the locations of census zones refer to Figure 2.

Species	Count unit	Census zone														Total
		2	3	4	5	6	6a	7	8	10	11	12	12a	13	14	
<b>Kittiwake</b>	AON	0	0	0	0	0	0	0	0	4	878	81	0	0	0	<b>963</b>
<b>Great black-backed gull</b>	AOT	0	0	0	0	4	0	5	5	0	0	0	0	0	0	<b>14</b>
<b>Herring gull</b>	AOT	0	0	0	0	0	0	0	2	0	0	0	0	0	0	<b>2</b>
<b>Great skua</b>	AOT	0	0	0	0	1	0	1	0	0	0	0	0	0	1	<b>3</b>
<b>Common guillemot</b>	Ind	0	0	0	39	0	0	0	0	183	14790	222	32	125	0	<b>15391</b>
<b>Razorbill</b>	Ind	52	68	10	104	0	1	0	25	71	184	151	27	9	0	<b>702</b>
<b>Black guillemot</b>	Ind	1	0	0	0	0	1	0	2	0	0	0	0	0	0	<b>4</b>
<b>Puffin</b>	AOB	23	119	22	34	0	5	0	0	333	564	3141	180	496	0	<b>4917</b>
<b>Fulmar</b>	AON	34	15	0	26	0	20	0	12	11	11	87	7	38	0	<b>261</b>
<b>Shag</b>	AON	26	72	1	43	0	3	0	50	30	19	18	4	7	0	<b>273</b>

Key to abbreviations: AON/AOT/AOB = apparently occupied nest/territory/burrow; Ind = individuals on land.

**Table 3.** Breeding seabird census data for the Lunga, Sgeir a' Chaisteil and islets.

	Count unit	Lunga	Sgeir a' Chaisteil	Sgeirean na Giusaich	Sgeir an Fheòir	Sgeir an Eirionnaich	Sgeir na h-Iolaire	Cairn na Burgh Mòr	Fladda
<b>Kittiwake</b>	AON	963	0	0	0	0	0	nc	0
<b>Great black-backed gull</b>	AOT	14	0	0	>5 pairs*	>12 pairs*	0	nc	>10 pairs*
<b>Herring gull</b>	AOT	2	0	0	0	0	0	nc	>6 pairs*
<b>Great skua</b>	AOT	3	0	0	0	0	0	nc	>2 pairs*
<b>Common guillemot</b>	Ind	15266	125	0	0	0	0	nc	nc
<b>Razorbill</b>	Ind	693	9	0	0	0	0	nc	nc
<b>Black guillemot</b>	Ind	4	0	2	1	0	0	nc	6
<b>Puffin</b>	AOB	4421	496	0	0	0	0	nc	nc
<b>Storm petrel</b>	Not censused	breeding							
<b>Fulmar</b>	AON	223	38	0	0	0	0	nc	6
<b>Manx shearwater</b>	Not censused	breeding							
<b>Shag</b>	AON	266	7	0	0	0	0	nc	nc

Key to abbreviations: AON/AOT/AOB = apparently occupied nest/territory/burrow; Ind = individuals on land; nc = no count; breeding = breeding confirmed

\*In 2022, only Lunga and Sgeir a' Chaisteil were landed on. Counts for other islands were conducted via the dinghy, or by counting flushed birds from Lunga. As such they should be considered minimum estimates.



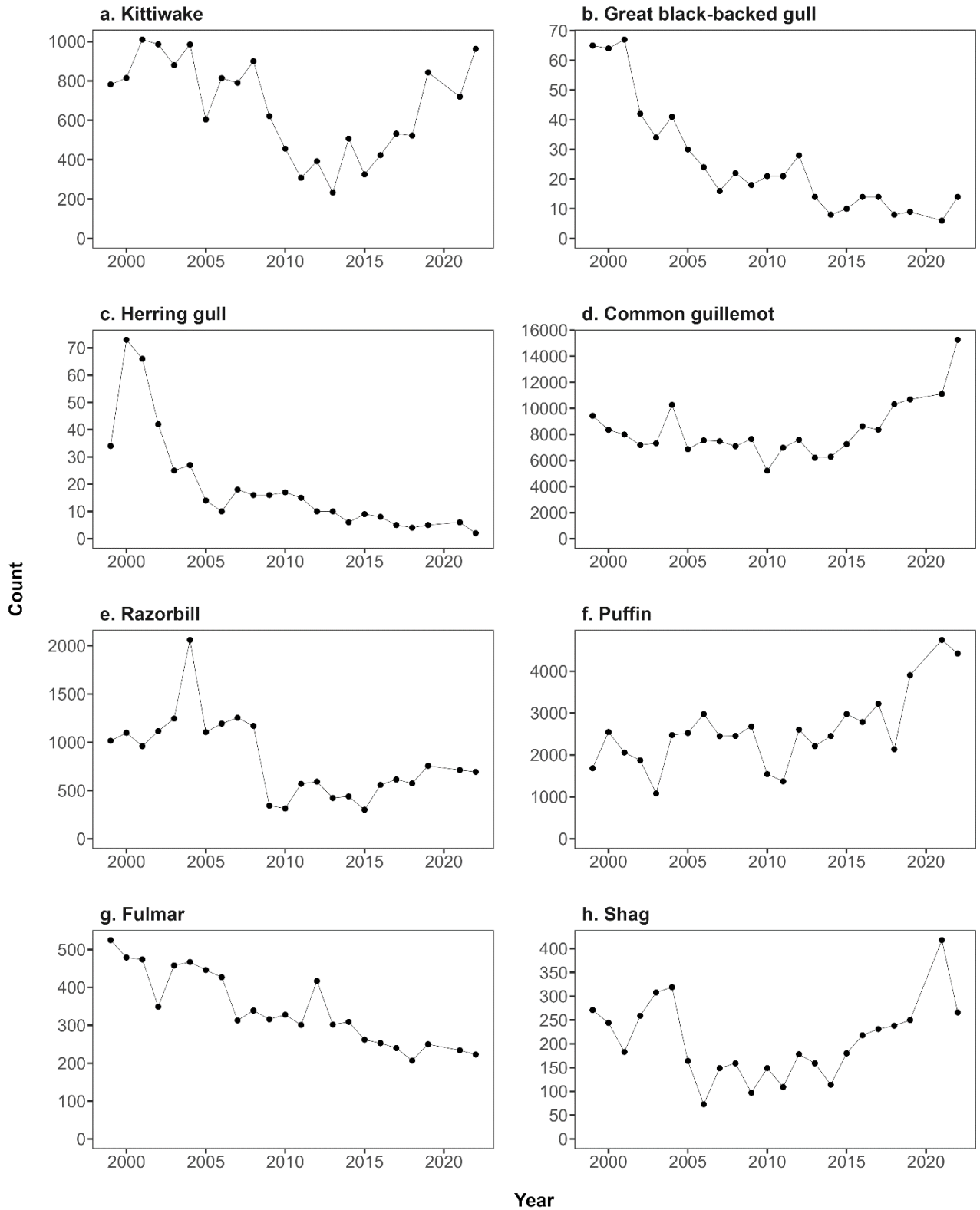


Figure 3. Counts for seabird species breeding on Lunga 1999 – 2022. For count units see Table 2.

## Systematic species lists

### Birds

The following systematic list describes all bird species not counted as part of the annual seabird census, incidental sightings of which were recorded throughout the period 27th June – 2nd July 2022. Species' statuses are based on the number of breeding records/sightings recorded in the last 25 years. Based on the RBBP definitions, regularly breeding species are those for which breeding was confirmed or strongly suspected in any five consecutive years since 1998. For non-breeders, species are considered a regular visitor if recorded in 15 or more years since 1998, and an occasional visitor if recorded in five or more. If few than five records, a species is considered a 'rare visitor' and the years of previous records are stated.

#### **Canada goose** *Branta canadensis*

*An occasional visitor with one breeding record in 2018. No sightings 1998 - 2016.*

No records in 2022.

#### **Greylag goose** *Anser anser*

*A regularly occurring species, with occasional breeding records (confirmed breeding records in 11 years between 1998-2022).*

A maximum count of approximately 50 moulting individuals was recorded on 29<sup>th</sup> June, in the waters around Sgeir an Eirionnaich. A pair with unfledged young was seen on the southwest coast (Area 8). Tabulated below are the annual peak counts of the moult flock centred north of Lunga.

**Table 4.** Greylag goose counts on the Treshnish Isles 1998 – 2022.

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Peak count	25	160	240	268	79	101	316	90	164	77	80	225	160
Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Peak count	140	50	140	196	272	70	98	198	200+	no count	202	50	

#### **Common shelduck** *Tadorna tadorna*

*An occasional breeding species.*

No records in 2022.

#### **Common eider** *Somateria mollissima*

*A regularly breeding species.*

On 27<sup>th</sup> June, nine females were seen simultaneously in the 'Dirty Inlet' south of Corran Lunga (Figure 2). Five of these were accompanied by broods of three, two, two, two and one ducklings. Two females, with broods of four and two, were seen to the west of Tarbet. An empty but fresh nest was found on Sgeir a' Chaisteil.

Counts of non-breeding individuals reached up to 12 individuals (eight female, four male) between Corran Lunga and Sgeir a' Chaisteil on 28<sup>th</sup> June, and 16 individuals on the sea between Fladda and Sgeirean na Giusaich.

**Table 5.** Common eider counts on the Treshnish Isles 1998 – 2022.

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Peak count	23	11	112	26	54	42	80	8	52	13	80	35
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Peak count	14	7	11	9	6	2	21	6	no count	17	16	

**Rock dove** *Columba livia*

*A regular breeding species.*

On Lunga, breeding was confirmed by the presence of a nest with young at Shag Alley. On 30<sup>th</sup> June, a group of eight were seen in Area 3 and a group of nine in Area 8.

**Water rail** *Rallus aquaticus*

*Regularly occurring since 2014, no records before this.*

Throughout the week, at least two individual males were heard calling around the village at the north end of Lunga. On the 30<sup>th</sup> June, a pair of water rails was seen on crossing a track close to the village.

**Corncrake** *Crex crex*

*A regularly occurring species (absent in only two of the last 25 years). Probably a regular breeder but difficult to confirm.*

Male corncrake were heard calling at several locations along the north coast (Areas 12 and 2). On 30<sup>th</sup> June, two males were heard simultaneously from different locations.

**Eurasian oystercatcher** *Haematopus ostralegus*

*A regular breeding species.*

Pairs of oystercatcher were seen on Corran Lunga, Tarbet, Area 8 and Area 5, totalling a minimum of five apparently breeding pairs on Lunga, two of which were confirmed as having chicks. Pairs were also seen on Sgeir a' Chaisteil (2), Sgeir an Fheòir (1), Fladda (2), and Sgeirean na Giusaich (2). A non-breeding flock of up to 31 individuals were seen on the boulder beach/Corran Lunga throughout the week.

**Golden plover** *Pluvialis apricaria*

*A rare visitor, only previously recorded in 2008, and 2013.*

A single call heard over Lunga at night, 29<sup>th</sup> June.

**Ringed plover** *Charadrius hiaticula*

*A regular breeding species.*

A pair was seen on Corran Lunga on the 26<sup>th</sup> June and 1<sup>st</sup> July. On 1<sup>st</sup> July, an additional pair was seen on Sgeir a' Chaisteil, one of which performed a broken wing display suggesting the presence of a brood. A third, separate bird was seen on Sgeir a' Chaisteil on the same day.

**Curlew** *Numenius arquatus*

*A regular visitor, records in 20 of the last 25 years.*

Two curlew were seen on the wave-cut platform of Area 5 on 30<sup>th</sup> June, and a single bird was recorded on Fladda on 1<sup>st</sup> July.

**Snipe** *Gallinago gallinago*

*A regular breeding species.*

Up to three birds heard drumming/chipping over the village, with additional records of a single bird chipping over the south end of Lunga, a pair flushed from the gully in Area 8, and single birds flushed from paths in Area 12, Area 2 and Area 14.

**Common sandpiper** *Actitis hypoleucos*

*A regular breeding species.*

Several records throughout the week, consisting of one calling on the boulder beach on 27<sup>th</sup> and 28<sup>th</sup> June, one on Corran Lunga on 29<sup>th</sup> June and 1<sup>st</sup> July, and two separate individuals on Sgeir a' Chaisteil. No clear evidence of breeding was recorded.

**Arctic skua** *Stercorarius parasiticus*

*Regularly occurring, offshore individuals likely originating from breeding grounds on Coll.*

Individual dark phase birds were seen off Lunga's west coast on the 27<sup>th</sup> June and daily between 29<sup>th</sup> June - 1<sup>st</sup> July.

**Storm petrel** *Hydrobates pelagicus*

*A regularly 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.*

Storm petrels were seen and heard at night around the village and on the boulder beach, indicating the likely presence of breeding.

**Manx shearwater** *Puffinus puffinus*

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

Presumed breeding birds were seen and heard at night on Lunga, and predated remains found in the great skua territory in Area 14. Small numbers of birds were seen daily, feeding or passing offshore of Lunga.

**Gannet** *Morus bassanus*

*A regularly occurring species, offshore.*

Very small numbers of adult birds were observed incidentally: one on the 28<sup>th</sup> June over Lunga; two over Sgeir an Eirionnaich on the 29<sup>th</sup> June; and one on the 1<sup>st</sup> July passing the east coast of Lunga.



Adult cormorant with two shags, north coast of Fladda (Andrew Carter)

**Cormorant** *Phalacrocorax carbo*

*A rare visitor, four past records since 1998 (2002, 2006, 2013, 2014)*

On 27<sup>th</sup> June, a single adult cormorant was seen on one of the skerries to the north of Fladda. A second sighting was recorded on 1<sup>st</sup> July, of an adult perched on the skerry to the west of Corran Lunga.

**White-tailed eagle** *Haliaeetus albicilla*

*A rare visitor, two previous records since 1998 (2016, 2021). Reintroduced to Rum in 1975 and breeding on Mull since 1985.*

On the 29<sup>th</sup> June, an adult eagle was seen perched on Sgeir an Fheòir. On the 30<sup>th</sup> June, an unaged eagle was seen flying over the Treshnish Isles toward Rùm. On 1<sup>st</sup> July, two different individuals were seen, one flying from Rùm, the other from Mull. Later on the same day, an eagle was seen near Harp Rock, carrying a dogfish.

**Buzzard** *Buteo buteo*

*An occasionally breeding and regularly occurring species.*

No records in 2022.

**Peregrine** *Falco peregrinus*

*A regularly occurring species, with three previous records of breeding associated with Bac Mòr.*

A nest with three chicks (approximately 30 – 35 days old) was found on 1<sup>st</sup> July.

**Hooded crow** *Corvus cornix*

*A regular breeding species.*

The species was seen most days on Lunga, the largest group consisting of four birds seen over the village and east side (Area 2).

**Raven** *Corvus corax*

*A regular breeding species.*

Records of two birds without primary moult on 29<sup>th</sup> Jun, and two birds with primary on 30<sup>th</sup> June, suggest four individuals were present overall, probably two adults and two juveniles.

**Skylark** *Alauda arvensis*

*A regular breeding species.*

On 1<sup>st</sup> July, a maximum count of six singing male skylarks was recorded on the areas south of Cruachan's summit (Areas 3, 6 and 7).

**Willow warbler** *Phylloscopus trochilus*

*A rare visitor with only four previous records (2006, 2011, 2019, 2021)*

A single bird was heard briefly calling at the Village, Lunga, on 27<sup>th</sup> June. This sighting represents the fifth record by TIARG of the species on the Treshnish Isles.

**Sedge warbler** *Acrocephalus schoenobaenus*

*An occasionally occurring species, with breeding confirmed/highly likely in 2006, 2010, 2018.*

No records in 2022.

**Whitethroat** *Sylvia communis*

*An occasionally occurring species.*

No records in 2022.

**Wren** *Troglodytes troglodytes*

*A regular breeding species.*

Seen and heard across the northern half of Lunga throughout the trip. Breeding was confirmed by records of adults carrying food (the village), two family parties with recently fledged young (Harp Rock and on the west slope of Cruachan).

**Starling** *Sturnus vulgaris*

*A regular breeding species.*

A maximum count of 40 individuals was recorded in Stinky Gully, Corran Lunga, some of which were juvenile birds. A single bird was seen on Fladda.



**Song thrush** *Turdus philomelos*

*An occasionally occurring species, with breeding recorded in 2021.*

The only possible evidence of song thrush was the signs of an anvil in the village.

**Blackbird** *Turdus merula*

*An occasionally occurring species, with breeding previously recorded in 2008, 2021.*

A pair of blackbirds was seen around the village most days, including records of a male singing and a female carrying food. Additional records consist of a recently fledged juvenile blackbird beside Harp Rock (28<sup>th</sup> June) and another recent fledgling on the cliffs of Area 8.

**Wheatear** *Oenanthe oenanthe*

*A regular breeding species.*

There were several records from across Lunga over the course of the expedition, particularly around the village, the path to Harp Rock and the puffin terraces (Area 12a). A ringed male was seen on the puffin terraces on the 28<sup>th</sup> June. Records of recently fledged juveniles confirm breeding.



Juvenile wheatear (Andrew Carter)

**Dunnock** *Prunella modularis*

*An occasionally breeding species (previous breeding records in five of the last 25 years).*

On 30<sup>th</sup> June, a single record of a bird carrying a faecal sac on the east side of Cruachan (path towards Shearwater Gully) confirmed breeding in 2022.

**Pied wagtail** *Motacilla alba yarrelli*

*A regular breeding species.*

There were multiple records between the 27<sup>th</sup> and 30<sup>th</sup> June, including a family group consisting of a pair with four recently fledged young around the village, and an immature bird on Corran Lunga. At least one bird was present in the village most days, with additional records of single birds from Shag Alley (Area 3) and Area 2.

**Meadow pipit** *Anthus pratensis*

*A regular breeding species.*

Widespread breeding species on Lunga with no estimate of territories made. Food carrying, faecal sac carrying and recently fledged young, as well as two separate records of freshly dead fledglings, confirmed breeding on Lunga.

**Rock pipit** *Anthus petrosus*

*A regular breeding species.*

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.

**Twite** *Linaria flavirostris*

*A regular breeding species.*

A small group of up to nine individuals, including adults with juveniles, was noted around the northern half of Lunga throughout the week. A group of six individuals was recorded on the southern slope of Cruachan.

**Reed bunting** *Emberiza schoeniclus*

*One previous record in 2015*

On 30<sup>th</sup> June, a single male was seen in the reedbed on the southern end of Lunga.

## Mammals

### **Otter** *Lutra lutra*

*Evidence of presence regularly noted.*

No records in 2022.

### **American mink** *Neovison vison*

*No known occurrences.*

No records in 2022.

### **House mouse** *Mus musculus*

*Resident, population size unknown.*

Monitoring of house mouse occurrence continued in 2022, using the chocolate and wax “chew stick” method described in the TIARG annual report 2021. Four chew sticks were deployed at each of the locations described below and left for three nights before retrieval. Sightings of mice confirmed their presence in the village, and lack of extensive chewing here may be influenced by the availability of other anthropogenic food sources.

**Table 6.** Occurrence of house mice across Lunga

Description	Grid ref.	Evidence of chewing
Building SW of Cruachan	NM 27702 41726	Two blocks extensively chewed
Wall on SE of Cruachan path	NM 27731 41667	One block slightly chewed
Wall above Harp Rock	NM 27678 42039	All blocks chewed, two extensively
Wall above 2 <sup>nd</sup> Gully (Area 12)	NM 27863 42149	Three blocks slightly chewed
The village	NM 28126 42262	One block slightly chewed (but see above)
Building E of village	NM 28131 42268	No chewing

### **Brown rat** *Rattus norvegicus*

*No known occurrences.*

No records in 2022. Monitoring for rats conducted 2021-2022 by RSPB biosecurity team using bait boxes.

### **Rabbit** *Oryctolagus cuniculus*

*Resident, population size unknown.*

There were several records of rabbits in and around the village, puffin lawn and on Corran Lunga consisting of up to two individuals at once.

### **Harbour seal** *Phoca vitulina*

*Irregular visitor*

Four well-grown harbour seal pups were seen on the 27<sup>th</sup> June, on the skerries northwest of Fladda.

### **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.*

Approximately 100 grey seals were observed on 27<sup>th</sup> June from a boat when travelling along the north coast of Fladda and past Sgeir na h-Iolaire and Sgeir an Eironnaich.



**Northern minke whale** *Balaenoptera acutorostrata**Irregular visitor*

The skeletal remains of a cetacean were found in a cove on the south-west of Lunga, most likely belonging to a minke whale. No sightings of live minke whale were recorded during the expedition.



A large number of whale bones found on Lunga's south-west coast (Shaun Micklewright)

## Butterflies and moths

**Table 7.** Butterflies recorded on the Treshnish Isles during the 2022 expedition

Common name	Scientific name	Notes
Meadow brown	<i>Maniola jurtina</i>	An adult, at the village
Common blue	<i>Polyommatus icarus</i>	Several adults, across Lunga and Sgeir a' Chaisteil

**Table 8.** Moths recorded on the Treshnish Isles during the 2022 expedition

Common name	Scientific name	Decimal code (Agassiz <i>et al.</i> 2013)
Map-winged swift	<i>Korscheltellus lupulina</i>	3.002
Sorrel bent-wing	<i>Opostega salaciella</i>	5.001
Common nettle-tap	<i>Anthophila fabriciana</i>	48.001
Marbled conch	<i>Eupoecilia angustana</i>	49.111
Common marble	<i>Celypha lacunana</i>	49.166
Six-spot burnet	<i>Zygaena filipendulae</i>	54.008
Yellow shell	<i>Camptogramma bilineata</i>	70.059
Ruby tiger	<i>Phragmatobia fuliginosa</i>	72.024
Silver Y	<i>Autographa gamma</i>	73.015
Clouded-bordered brindle	<i>Apamea crenata</i>	73.156
Broom moth	<i>Ceramica pisi</i>	73.271
Bright-line Brown-eye	<i>Lacanobia oleracea</i>	73.267

## Bees

**Table 9.** Bees recorded on the Treshnish Isles during the 2022 expedition

Common name	Scientific name
Red-tailed bumblebee	<i>Bombus lapidarius</i>
White-tailed bumblebee	<i>Bombus lucorum</i>
Common carder bee	<i>Bombus pascuorum</i>
Moss carder bee	<i>Bombus muscorum</i>

## Other notable records

### Oyster Plant *Mertensia maritima*

*Localised species on Lunga.*

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



## Highly Pathogenic Avian Influenza

Since November 2021, there has been an outbreak of highly pathogenic avian influenza (HPAI) in the UK across a range of species, including seabirds (Scottish Government 2022). The first reports of cases among seabird breeding colonies in June 2022 originated from Shetland and the east coast (UK Government 2022a). HPAI cases among great skua and gannet dominated initial reports.

On 16<sup>th</sup> June 2022, the Avian Flu Coordination Team at NatureScot made the decision to suspend all ringing research activity within seabird colonies in Scotland, including non-seabird species within seabird colonies. Therefore, in line with government guidance, no ringing was conducted during TIARG's 2022 trip.

To monitor for signs of HPAI on the Treshnish Isles, TIARG noted any signs of HPAI, such as high numbers of dead birds, or individuals showing signs of infection e.g. lethargy, watery eyes, twisting of the head and neck (UK Government 2022b). Disinfectant foot baths were used to clean boots daily and when moving between sub-colonies on Lunga. No obvious signs of HPAI were observed on the Treshnish Isles during our trip. During the expedition period, visitor access was still permitted on Lunga.

Over the summer of 2022, HPAI cases were reported in a wide range of species, including gannet, Manx shearwater, puffin, razorbill, common guillemot, great skua, kittiwake, great black-backed and herring gull, and Arctic tern. From mid-July onwards, HPAI was reported in seabirds on the Western isles, including Islay and the Small Isles, and the first record on Skye confirmed in early July (UK Government 2022a, 2022c, 2022d). Visitor access to Lunga and other seabird colonies was discouraged by NatureScot as of 18/07/2022.



Guillemots at dusk (Andrew Carter)

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## Appendix 1. Ring recoveries since the previous TIARG report

**Table A1.1.** Ring recoveries between July 2021 – June 2022 that were deployed by TIARG on the Treshnish Isles. Ages are coded according to EURING age codes (British Trust for Ornithology).

Species	Ring number	Ringling date	Age at ringling	Finding date	Finding location	Age at finding	Finding method
Shag	1701747	23/06/19	1	17/09/21	Baugh, Isle of Tiree, Argyll and Bute, UK		Dead (not fresh)
Shag	1712356	29/06/21	1	07/06/22	Balephuill, Isle of Tiree, Argyll and Bute, UK		Dead (not fresh)
Shag	1469937	03/07/14	1	05/07/22	Lunga, Treshnish Isles, Argyll and Bute, UK	6	Colour mark recorded
Shag	1491053	27/06/16	1	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Razorbill	M92682	20/05/18	8	21/05/22	Lunga, Treshnish Isles, Argyll and Bute, UK	8	Metal ring read in field
Razorbill	M88249	22/06/04	6	17/04/22	Conwy Morfa, Conwy, UK		Dead (fresh)
Razorbill	M92693	26/06/18	6	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Common guillemot	R73052	28/06/16	6	28/11/21	Hogh Bay, Argyll and Bute, UK		Alive but unwell, subsequently released
Common guillemot	R73039	28/06/16	6	27/04/22	Cul a Gheata, Isle of Ulva, Argyll and Bute, UK		Dead (not fresh)
Puffin	EZ30430	31/05/18	8	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Puffin	EX12610	28/06/14	6	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Puffin	EW50481	27/06/12	6	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Puffin	EW18441	25/06/08	8	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Puffin	EX12797	27/06/15	10	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Puffin	EZ30368	25/06/18	10	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Puffin	EW18070	23/06/07	8	29/06/22	Lunga, Treshnish Isles, Argyll and Bute, UK		Metal ring read in field
Storm petrel	2777388	02/07/21	6	11/07/22	Aird-mhicheil, South Uist, Western Isles, UK	4	Subsequent recapture by ringer
Storm petrel	2560198	24/06/03	6	24/07/21	Murkle Beach, Highland, UK		Dead (not fresh)

**Table A1.2.** Ring recoveries between July 2021 – June 2022 that were recovered by TIARG on the Treshnish Isles. Ages are coded according to EURING age codes (British Trust for Ornithology).

<b>Species</b>	<b>Ring number</b>	<b>Ringling date</b>	<b>Ringling location</b>	<b>Age at ringling</b>	<b>Finding date</b>	<b>Age at finding</b>	<b>Finding method</b>
Storm petrel	2701221	20/08/18	Ballyreagh, Londonderry, NI	4	28/06/21	6	Subsequent capture by ringer
Storm petrel	2714112	06/08/20	Ballyreagh, Portrush, Antrim, NI	4	28/06/21	6	Subsequent capture by ringer
Storm petrel	2732759	31/07/17	Fair Isle, Shetland, UK	4	29/06/21	6	Subsequent capture by ringer
Storm petrel	2759059	15/07/20	North Ronaldsay, Orkney, UK	4	02/07/21	6	Subsequent capture by ringer
Storm petrel	2746296	27/07/19	Skokholm Island, Pembrokeshire, UK	4	02/07/21	6	Subsequent capture by ringer
Storm petrel	2757895	04/08/19	Score, Highland, UK	4	28/06/21	6	Subsequent capture by ringer
Storm petrel	2720103	18/07/15	Sule Skerry, Orkney, UK	4	02/07/21	6	Subsequent capture by ringer
Storm petrel	2714061	25/07/17	Ballyreagh, Londonderry, NI	4	29/06/21	6	Subsequent capture by ringer
Common guillemot	Y17129	25/06/16	Isle of Canna, Highland, UK	1	29/06/21	6	Subsequent capture by ringer
Common guillemot	R91162	09/07/14	Isle of Canna, Highland, UK	1	27/06/21	6	Subsequent capture by ringer
Common guillemot	Y19210	26/06/17	Isle of Canna, Highland, UK	1	02/07/21	6	Subsequent capture by ringer

## Appendix 2. Ring series used on the Treshnish Isles since 1927

Table A2.1. Rings known to have been used on the Treshnish Isles, irrespective of ring ownership.

A2	E	G	K	GUILLEMOT
2010581 – 583	EF75001 – 500	GF10471 – 489	1078761 – 800	R07001 – 100
2101991 – 2000	EG23501 – 700	GH21301 – 350	1080101 – 110	R19401 – 20200
2121401 – 500	EG23721 – 780	GN85301 – 400	1087111 – 120	R24001 – 26350
2167051 – 068	EG23801 – 999	GJ35401 – 500	1105561 – 570	R31601 – 900
2170201 – 203	EG61000 – 500	GJ76001 – 800	1123531 – 540	R51501 – 2000
2238501 – 600	EG88501 – 9000	GJ99081 – 082	1123541 – 550	R65501 – 6000
2261001 – 2350	EH33377 – 380	GK34351 – 354	1123671 – 690	R72501 – 4000
2284001 – 5000	EH54501 – 55000	GK50214 – 220	1123961 – 970	T14001 – 5000
2309901 – 10000	EH89256	GK50551 – 570	1130701 – 800	R73001 – 4000
2311301 – 400	EH89260	GK62985 – 990	1159651 – 700	T82001 – 300
2311501 – 2000	EH98001 – 300	GK90821 – 840	1163701 – 740	X39501 – 40000
2348001 – 500	EK29501 – 900	GK91471 – 490	1168001 – 100	X56501 – 57000
2236801 – 7000	EK72657 – 660	GM78756	1170601 – 700	X63001 – 500
2369301 – 400	EK91471 – 490	GP13416 – 450	1174201 - 300	X67501 – 68000
2405001 – 6000	EL19801 – 276	GP47917	1187901 – 950	X79501 – 80000
2430701 – 900	EL52501 – 3000	GP62201 – 207	1237401 – 450	X99001 – 99500
2436501 – 7000	EN22001 – 500	GP74501 – 75000	1322951 – 960	Y09403 – 09405
2444501 – 5000	EP85608 – 612	GR44201 – 250	1328481 – 490	Y26001 – 26500
2446202 – 233	EP85687 – 700		1350801 – 900	Y32501 – 33000
2455501 – 6000	ER03701 – 800	<b>H</b>	1357901 – 8000	
2480001 – 500	ER48401 – 404	HT03619	1366901 – 7000	<b>MISC</b>
2513501 – 4000	ES64018 – 189	HT09001 – 004	1373751 – 3900	1F4094 - 097
2538001 – 800	ET19501 – 700	HT17871 – 890	1378401 – 8500	C331894 - 900
2542001 – 3000	ET52501 – 3000	HT17931 – 940	1399601 – 700	E196501 - 520
2554001 – 500	ET80001 – 500	HT34021 – 030	1408301 – 500	JB44316
2560001 – 1000	EW18001 – 500	HT68201 – 210	1414301 – 500	K039209 - 230
2579001–80000	EW50001 – 500	HT68221 – 226	1421701 – 800	K419290 - 295
2605001 – 5500	EX12501 – 3000	HT80301 – 400	1417001 – 7100	NA84296 - 299
2624001 – 5000	EY32001 - 500	HW05351 – 360	1445601 – 800	KX83101 - 106
2650101 – 1000	EZ30001 – 1000	HW06951 – 7000	1491001 – 100	KX83116 - 118
2664001 – 5000		HW08994 – 09000	1497001 – 100	RF10011 - 020
2679001 – 80000	<b>F</b>	HW37361	1500201 - 300	LA59201 - 300
2725001 – 6000	FA50601 - 700	HW42996 - 3000	1701501 - 2000	DD90261 - 270
640801 – 640900	FB22601 – 700	HW68101 – 110	1118766 - 789	CBV601 - 700
2627701 - 800	FB23401 – 500	HW68161 – 170	1712301 - 500	V711401 - 500
2777001 – 8000	FC52551 – 558	HW74971 – 990		TJ18901 - 9000
	FC52571	HW87211 – 225	<b>RAZORBILL</b>	BT09481 - 490
	FC74501	HW96181 - 200	K10701 – 1000	NV42851 - 860
	FH36101 – 200	HW94907 – 913	K13001 – 300	SR49601 - 700
	FR13606 – 636	MA12551 – 600	M36341 – 350	A297482 - 500
	FR14401 – 500	MA15801 – 900	M46501 – 800	B229951 - 992
	FR51201 – 300	MA44251 – 900	M55001 – 500	BV70669
	FR56351 – 400		M72451 – 800	SV58551 - 600
	FR76701 = 800		M85501 – 800	BV28661 - 670
	FS21478		M88001 – 300	SV58601 - 616
	FS51016 – 500		M92501 – 700	Z155001 - 100
	FS87001 – 100			EL69255 - 300
	FV10611 – 620			
	FV10646 – 650			
	FV54446 – 460			
	FV62410			
	FV62416 – 226			
	FV96681 – 684			
	SS96101 – 300			