Treshnish Isles Auk Ringing Group Report for 2004

Compiled by Robin M. Ward

Expedition dates: 19th June – 25th June 2004

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INTRODUCTION

Since 1971, the Treshnish Isles Auk Ringing Group (TIARG) has undertaken to monitor, through ringing and census work, the breeding seabird populations of the Treshnish Isles, Argyll (Walker & Cooper 1996). This report summarises the results of the Group's 26th expedition to the Treshnish Isles during 19th June – 25th June 2004. This year the expedition was cut short by a day due to bad weather.

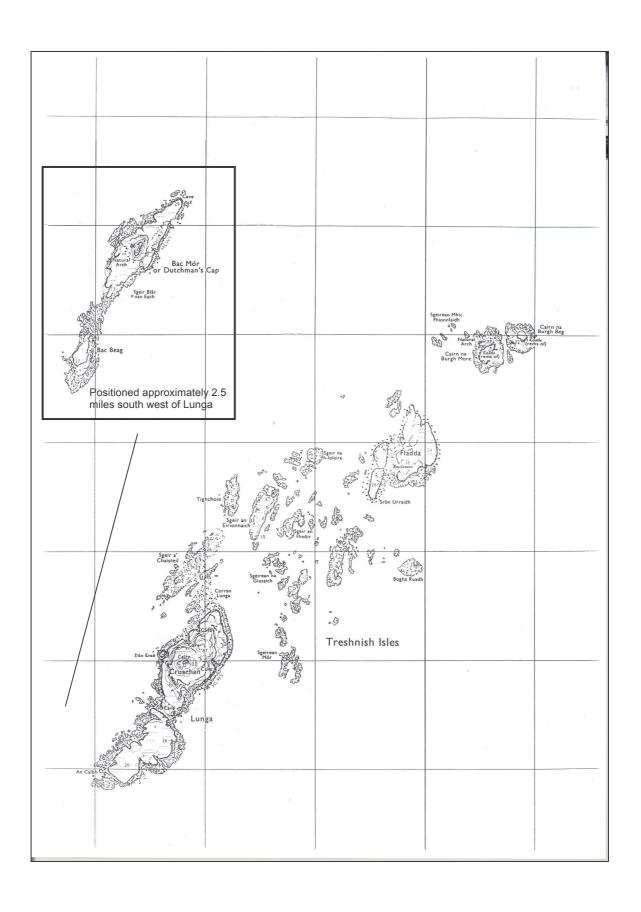
As in previous years, the expedition's base was set up around the ruined village site at the northern end of Lunga. The majority of the week's fieldwork was centred upon Lunga & Sgeir a Chaisteil where the regular annual full seabird census and the systematic ringing of specific seabird colonies was undertaken. A week dominated by windy conditions resulted in very few storm petrels being mist netted but on the other hand was ideal for fleyg netting auks, resulting in larger numbers of Guillemots being ringed. These windy conditions meant it was too dangerous in the boat available to venture to other islands (although we did manage a very brief trip to Fladda). Consequently less additional census and ringing activity was achieved. This year, six permanent and repeatable seabird monitoring plots were set up, and it is our intention to collect data on survival into the future.

All TIARG census and ringing data are fed into two national monitoring programmes, the Seabird Colony Register (J.N.C.C.) and National Ringing Database (British Trust for Ornithology), respectively. The data supplied are of great conservation value as they are the sole means by which the seabird colonies of the Treshnish Isles are currently monitored. The conservation importance of these islands is recognised by their designation as a Special Protection Area by the UK Government for the breeding colonies of seabirds they support. Financial support for the monitoring work TIARG undertook in 2004 was given by the Hebridean Trust (www.hebrideantrust.org).

Highlights of the expedition were an `on island` meet up with Hebridean Trust staff, excellent catches of Guillemot and superb extended views of a female Otter playing with her two well grown cubs off Corran Lunga below the Puffin colony.

Any comments on the report and how future editions can be improved upon for relaying information required by conservation agencies are much welcomed. We are currently in the process of developing our own web site.

MAP OF THE TRESHNISH ISLES



WEATHER

Km/hr	Beaufort wind scale	Wind Force
6-11	2	light breeze
12-19	3	gentle breeze
20-28	4	moderate breeze
29-38	5	fresh breeze
39-49	6	strong breeze
50-61	7	near gale

19th June Westerly Force 5.

Cloudy with sunny intervals.

Occasional, very slight precipitation. Temperature, max 15 C, min 9.5 C.

20th **June** Westerly Force 2 –3, falling calm by evening.

Warm and mainly sunny.

Dry.

Temperature, max 18 C, min 11 C.

21st **June** Northerly Force 2, falling calm by evening.

Warm and sunny.

Dry.

Temperature, max 17 C, min 10 C.

22nd June Northerly Force 1 - 2, freshening north-easterly 4 in evening.

Warm and Sunny - a lovely day.

Dry.

Temperature, max 20 C, min 10 C.

23rd **June** Westerly Force 4, moderating to 1 - 2 by evening.

Cold and complete cloud cover.

Continuous rain, sometimes heavy, for most of the day. Moderating to drizzle by evening. A

miserable day redeemed by the Otters in the evening.

Temperature, max 13 C, min 9 C.

24th **June** South-easterly 3 –4.

Slight cloud early on, then a sunny afternoon.

Rain shortly after dawn.

Temperature, max 17 C, min 10 C.

SYSTEMATIC LIST OF BIRDS FOR 2004

The following systematic list is a brief account of those bird species seen whilst the Treshnish Isles Auk Ringing Group were present on the Treshnish Isles, 19th June – 25th June 2004. Unless specified, no records are available for the Cairn na Burghs and the Dutchmans. The status comments (first paragraph) refer to the species' occurrence during the breeding season as recorded by previous years expeditions.

A detailed breakdown of breeding seabird numbers on Lunga and Chaisteil in 2004 is provided in a subsequent section of the report. For several seabird species (Shag, Kittiwake, auks) the census results for 2004 requires careful interpretation as observations detailed below identify an unusually poor breeding season which for the auks has probably resulted in a higher adult attendance than normal for late June. This would appear not to be a localised event. A poor breeding season was reported widely from other Scottish and northern England colonies and for the majority of seabird species, with the Treshnish Isles colonies apparently faring much better than many further north. The proportion of a species in attendance that were either failed or non-breeders in relation to previous years is not known. To be able to address this question in the future, TIARG has established trial monitoring plots for several species.

For some seabird species, average rates of population change have been calculated by linear regression of the natural logarithms of the breeding numbers year on year. The significance of the slope of the regression, equivalent to the average annual rate of increase or decrease in the population, is then assessed using the t-statistic (Fowler & Cohen 1986).

Fulmar Fulmarus glacialis

A common breeding species

Breeding was confirmed on Fladda, Lunga and Sgeir a Chaisteil. Over the long term, 1994-2004, the average rate of change in the numbers of breeding birds on Lunga is calculated at -3.6% per annum, this trend being significant (P<0.05). For a similar period, 1993-2002, Mavor *et al.* (2004) reports no significant trend in the cumulative Fulmar population of colonies monitored in this region, S.W. Scotland. The breeding population for Lunga and Sgeir a Chaisteil in 2004 was estimated at 547 pairs based upon apparently occupied sites (AOS), a 4.6% increase from 2003 with the suggestion that the long-term decline in population has now ceased. Much of the change in numbers between 2003 and 2004 can be attributed to substantial increases in numbers within sector 8 (69 AOS; over 75% of that recorded in the past two years) and Sgeir a Chaisteil (87 AOS) where the previous year's decline was almost redressed.

Manx Shearwater Puffinus puffinus

A regular breeding species

Presumed breeding birds were seen at night on Lunga. During the evenings at Harp Rock, usually small numbers of birds were noted flying past distantly offshore though on 19th June a count of 200 was made.

Storm Petrel Hydrobates pelagicus

A common breeding species

Many birds were heard churring from burrows on Fladda and Lunga. Mist netting on one night at the Village provided a total of 138 birds. Further attempts to mist net on Lunga were thwarted by the wind.

Gannet Sula bassana

Regularly seen offshore

A exceptional strong passage of birds offshore was noted off Lunga on the morning of the 24th June when127 birds were counted north in two hours, amongst which were only 22 adults. By 12.30 this passage ceased with 15 birds loafing off the west coast. On other days between 4 and 35 individuals were noted offshore, most adults.

Shag Phalacrocorax aristotelis

A common breeding species

Breeding was confirmed on Fladda, Lunga, Sgeir a Chaisteil and Sgeir an Eirionnaich. The breeding population for Lunga and Sgeir a Chaisteil was 319 and 23 pairs respectively, based upon a nest count. When combined, the number counted has increased by 5% from that in 2003, continuing the trend of an overall population increase noted since 1994. During this period the average rate of change in the

number of breeding birds on Lunga is calculated at 6.0% per annum, this trend being highly significant (P<0.01). In consequence the population on Lunga has more than doubled over the same period and at an annual rate of increase suggested to be above that measured for the various regions of Scotland up to 2002 (Mavor *et al.* 2004). Within the S.W.Scotland region that encompasses the Treshnish Isles, Maver *et al.* (2004) reports no overall significant trend in the dynamics of the cumulative breeding Shag populations of those colonies monitored; these include Lunga and Sgeir a Chaisteil (Mavor *et al.* 2004). To the north and including the nearby colony of Eigg, long-term declines continued into the 2003 breeding season in N.W. Scotland and this also occurred further north still, in Shetland (Mavor *et al.* 2004).

Underlying the overall increase in population on Lunga has been some re-distribution in breeding numbers between the different count sectors as in previous years. The most notable decline has been the loss in 2004 of breeding birds within sector 4 where numbers in recent years fluctuated between 8 and 25 pairs. Sectors 2 & 8 have returned to supporting numbers at or above the numbers held in the late 1990s whilst the substantial increase in population within area 12 noted in 2003 was maintained in 2004.

Of particular note in 2004 was that away from the north-west coast of Lunga the majority of breeding Shags were incubating eggs or brooding very young chicks with few nests containing the well developed chicks most would be expected to hold by the end of June.

At least one breeding pair was noted on Sgeir an Eirionnaich. No counts were made on Fladda where the breeding population is at least in high double figures.

Greylag Goose Anser anser

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

The late summer moult flock in June held at least 316 birds, typically most residing around the islands of Sgeir an Eirionnaich, Fladda and Sgeir an Fheòir. Extensive areas of vegetation heavily grazed and trampled by geese were located once again on Sgeir an Eirionnaich and at the south end of Lunga where six adults were noted on 20th.

Year	1998	1999	2000	2001	2002	2003	2004
Peak count	25	160	240	268	79	101	316

Shelduck Tadorna tadorna

Rare visitor

A lone female roosted on the Boulder Beach, Lunga, on the morning of 25th June. This record follows successful breeding by a pair on Corran Lunga in 2003 with the only previously documented record of the species by TIARG being that of a pair regularly seen in June 1976.

Eider Somateria mollissima

Regularly breeds in small numbers

Three broods were noted around Lunga comprising of 4 ducks with a single duckling in area 6, and single broods of 2 and 4 at Corran Lunga. The latter brood may have been the offspring of an incubating female noted several days earlier on Corran Lunga. Elsewhere two recently used nests were located on Sgeir an Eirionnaich, with further two on Sgeir an Fheòir plus one active nest, whilst during a brief visit to Fladda three ducks and a duckling were encountered.

The waters between Fladda and Lunga supported the usual late summer moult flock of birds, typically male-biased; 54 were counted on 21stJune. Elsewhere up to 4 females were noted at Sgeir a Chaisteil.

Buzzard Buteo buteo

Until recently, one pair bred in most years

At least one moulting adult and a juvenile were noted daily around Lunga, with prey when identified, usually being Rabbit.

Peregrine Falco peregrinus

Seen most years with breeding known to occur on adjacent coasts

An adult male was noted along the north west coast on 21st June. What was presumably the same adult male was later seen on the 24th over Sgeir a Chaisteil attempting to predate a Kittiwake.

Corncrake Crex crex

Probably a regular breeder in small numbers

Two, possibly three, calling males were noted during the week. A single bird was heard calling on several occasions from the cliff top Bracken immediately south of Shearwater Gully. Another bird was

regularly heard from the Village calling to the north; that may have been the bird calling from Sgeir a Chaisteil, a new locality for the species. Certainly one observer, hearing a bird from the village, was misled into thinking it was calling from the Puffin Lawn above 12a, then when followed, that it was on Corran Lunga, until eventually tracked down to over the water on Sgeir a Chaisteil. On this occasion, as with most nights, the breeze had a northerly component. No birds were heard to be occupying the area traditionally held in recent years to the east of the village on Lunga.

Oystercatcher Haematopus ostralegus

Regularly breeds in small numbers

12 breeding pairs were found to be holding territories on Lunga's beaches and rocky outcrops (1 in Tarbet east, 3 in area 8, 3 at Corran Lunga, 1 on the Landing Beach, 3 in area 5 and 1 at Tarbet west) with broods noted at Corran Lunga (two of 3), the Landing Beach (1 young) and a clutch of 3 eggs in area 5. Elsewhere 6 breeding pairs held territory on Sgeir a Chaisteil of which two had broods of 3, and two pairs were on Sgeir an Fheòir. Small flocks of presumed failed breeders/immatures were evident typically on Lunga in area 6a and Sgeir an Eirionnaich with up to 7 and 12 birds noted respectively.

Ringed Plover Charadrius hiaticula

One or two pairs breed

The behaviour towards intruders of one pair on the Landing Beach suggested they were incubating eggs. A second pair was typically on territory at Corran Lunga. Observations suggested at least one pair were attempting to breed on Sgeir a Chaisteil. The distribution of these breeding pairs was much as noted in recent years.

Snipe Gallinago gallinago

Regularly breeds in small numbers

Dry ground conditions, this particularly noticeable across the sphagnum areas of the south end of Lunga, were considered to be the principal reason for the small numbers of birds recorded. Only two male birds were apparently on territory as discerned from drumming birds, at Lunga's north end, at and to the east of the Village. One bird was however heard chipping over the Puffin colony, north-west of the Village. North of Tarbet additional territories were suggested from single displaying males noted on the 20th June between Shag Alley - Shearwater Gully and immediately south of the Well. At the south end of Lunga, one bird with 2 day old chicks were located just above Tarbet in area 7. Otherwise singles were flushed on only two dates in area 6, with no drumming heard during several visits made to the south end in day time.

No birds were noted during the brief visits made to Fladda, Sgeir an Fheòir, Sgeir an Eirionnaich or Sgeir a Chaisteil.

Redshank Tringa totanus

Rare visitor

A single bird was seen at the south end of Lunga on 25th June. A calling bird was later heard on the night of 23rd from the Well.

Common Sandpiper Actitis hypoleucos

One pair occasionally breeds

One pair was daily in attendance alarming and thus suggestive of breeding on Corran Lunga. Elsewhere on Lunga a single bird was noted on 20th June at Tarbet with no further sightings from this locality on subsequent visits. On the other islands visited, one pair were found breeding on Sgeir an Fheòir and a single bird on Fladda where breeding is regularly suspected.

Turnstone Areneria intepres

Rare visitor

A single first-summer bird was seen during a brief visit to Sgeir an Eirionnaich on 25th June.

Arctic Skua Stercorarius parasiticus

Small numbers seen daily presumably from the breeding grounds on Coll where numbers in recent years have declined (Mavor *et al.* 2004)

Up to 8 birds at any one time were seen daily, generally offshore from the Harp Rock - Sgeir a Chaisteil coast. Dark phase birds were typically more common with no more than two light phase birds being seen at any one time. During a period of marked Gannet movement off the west coast of Lunga on the 24th June, a total of 4 dark & 2 light phase birds were noted in 2 hours heading north.

Great Skua Stercorarius skua

A regular and increasing breeding population has become established since confirmation of breeding by a pair in 1998.

No evidence of breeding was established for a pair of (unringed) birds that regularly occupied the high ground south of the Tarbet (area 6), a locality where breeding has previously been proven. When disturbed both birds would vacate the area, often not returning within half an hour.

A brief visit to single breeding territories situated on the west and east coast of Fladda was unable to confirm successful breeding. However successful breeding can not be discounted as both pairs on territory kept their distance from the intruders as in previous years when such behaviour made locating the young that much more difficult.

Up to three birds, often displaying in flight, were noted on several occasions over Lunga's west and north coasts.

Common Gull Larus canus

In recent years has become established as a regular breeding species in small numbers

An estimated 17 breeding pairs (33 adults noted on site) were localised on the low-lying basalt rock outcrop of Fladda's south-east coast in a colony where breeding has been noted annually since 1998. The number of estimated pairs in this colony has increased by 55% from that in 2003, continuing the trend of increase since 1998. Between one and two birds were occasionally seen or heard from the north end of Lunga.

Lesser Black-backed Gull Larus fuscus

Regular breeding species in small numbers

Breeding was suspected on Lunga (area 8) with 1 pair within the west coast Herring Gull colony. Since the start of annual seabird censuses of Lunga and Sgeir a Chaisteil in 1994, the species breeding population has fluctuated between 1 and 9 pairs with no significant trend (1994-2004). Elsewhere two or more pairs were noted in the gullery on Cairn na Burgh Beg by the expedition when passing en route to Lunga on the 19th June. Four adults were also noted amongst a much larger Great Black-backed Gull roost on the north end of Sgeir a Chaisteil on 25th June.

Herring Gull Larus argentatus

A common breeding species

Breeding was confirmed on Lunga (27 pairs), Sgeir a Chaisteil (6 pairs), Sgeir an Eirionnaich (1 pair), Fladda (15+ pairs), Sgeir na H-lolaire (between 8-25 pairs), Sgeir an Fheòir (6 pairs) and Cairn na Burg More (21 pairs). No birds were occupying territories on Sgeirean na Guisaich or apparently Cairn na Burg Beg. It is increasingly evident that the numbers of breeding birds on Lunga and the intervening islands between there and Fladda, have been in decline since the late 1990s. The average rate of change in the numbers of breeding birds on Lunga for the period 1994 – 2004, is calculated at -10.2% per annum, this trend being highly significant (P<0.01). In Scotland and specifically the Argyll & Bute region, the breeding population has declined between the two most recent national seabird censuses (1986 Seabird Colony Register and 1999-2001 Seabird 2000), though the situation at a colony level has been variable within the region with some stable (Mitchell et al. 2004). A complete census of the Treshnish Isles is required to assess whether the decline for which there is no obvious explanation, is real or merely a re-distribution of birds between the different islands.

Great Black-backed Gull Larus marinus

A regular breeding species

Breeding was confirmed on Fladda (45+ pairs, most in north-east gullery), Lunga (41 pairs), Sgeir a Chaisteil (1 pair). Scanned from adjacent land or a boat, breeding was also considered to have occurred on Sgeir an Eirionnaich (27+ pairs; 54 adults), Sgeirean na Guisaich (north 1 pair, south 1 pairs), and Sgeir an Fheòir (7 pairs with 3+ broods) amongst those islands between Fladda and Lunga. During the period 1994-2004 the population of Lunga has fluctuated widely (34-67 pairs, no significant trend) with the 21% (7 pairs) increase in this population between 2003 and 2004 following on from two years of decline (67 to 34 pairs).

An atypical gathering of 79 birds, that included 5 immatures, were noted roosting on the north-east tip of Sgeir a Chaisteil on the 25th June.

Kittiwake Rissa tridactyla

A localised breeding species

Breeding was confirmed on Fladda and Lunga where the main colony is situated around Harp Rock. The numbers of apparently occupied nests on Lunga totalled 985, a 12% increase from 2003 and reversing

the decline of that year. Up until then the population had undergone an increase following a period of stability at c.725 pairs during the mid 1990s. The average rate of change in the numbers of breeding birds on Lunga for the period 1994 – 2004 is calculated at 3.8% per annum, this trend being highly significant (P<0.01). This is comparable to the overall trend reported for the seabird colonies monitored over a similar period (1991 - 2003) in S.W.Scotland (Maver et al. 2004); these include Lunga and Sgeir a Chaisteil.

In common with several other breeding seabirds on Lunga, the majority of breeding pairs were still incubating eggs and not brooding young as would be expected in late June.

Typically a flock of up to 835 adults and including the occasional 1st summer bird, was noted daily on rocks between Lunga and Sgeir a Chaisteil.

Common Tern Sterna hirundo

Irregular breeding species

In marked contrast to recent years, a brief visit by two expedition members found only small numbers of this species (approximately 10% of birds; 20+ pairs) occupying the ternery on the islet immediately adjacent to Sgeir an Eirionnaich.

Arctic Tern Sterna paradisaea

Irregular breeding species

For the second year, a ternery was centred upon an islet adjacent to, rather than on as in the previous two years, Sgeir an Eirionnaich. When flushed during a visit to Sgeir an Eirionnaich, approximately 90% of birds in attendance at the colony, an estimated 360 birds, were of this species. Only one pair were found nesting on Sgeir an Eirionnaich.

Guillemot Uria aalge

Common breeding species

Breeding was confirmed on Lunga and Sgeir a Chaisteil, the main concentration typically located within the vicinity of Harp Rock with 8980 adult birds estimated. Birds were also considered to breeding on Fladda as confirmed in previous years.

The numbers of individuals counted on Lunga and Sgeir a Chaisteil totalled 10,385, a 42% increase from 2003. This marked increase was noted across all those sectors of Lunga that regularly support birds as well as on Sgeir a Chaisteil. High adult attendance may explain this apparent increase in population size as the majority of those adults confirmed to be breeding were still incubating eggs with few brooding well developed young as would be expected for the majority of breeders in late June. Furthermore, very few adults returning from the sea were observed to be carrying fish, this the consequence of much fewer young requiring feeding but also a likely factor driving the poor breeding success.

The average annual rate of change for the population of Lunga is calculated at 2.9% p.a. for the period 1994-2004; the trend is not significant.

Razorbill Alca torda

Common breeding species

Breeding was confirmed on Lunga and Sgeir a Chaisteil. Birds were also seen at suitable breeding sites on Fladda.

The number of individuals counted on Lunga and Sgeir a Chaisteil totalled 2064, a 66% increase from 2003 with much of this increase at and adjacent to Harp Rock. In common with Guillemot, comparatively fewer adults were observed returning to the colony carrying fish than would be expected for late June. As most Razorbills nest within inaccessible crevices, it was not possible to ascertain whether the majority of birds were incubating or brooding. Amongst the few small boulder colonies accessible, young were heard, and when seen, these were small.

The marked increased in the presence of adults should bring caution when considering the average annual rate of change for Lunga's population that is calculated at 6.9% p.a. for the period 1994 – 2004, whereas up to 2003 there was no significant trend. Within the past decade, however there was apparently a real significant period of increase (+24% p.a. 1994-1998; P<0.05) to a count of 1400 individuals followed by counts fluctuating between approximately 950 and 1200 birds thereafter (1999-2003; no significant trend).

Black Guillemot Cepphus grylle

Regular breeding species in small numbers

Adult birds were seen around Fladda (7 birds) Sgeir an Eirionnaich - Sgeir an Fheòir sea area (38). Carn na Burg More (6) and Lunga's south end (14).

Puffin Fratercula arctica

Common breeding species

Breeding adults were occupying burrows on Lunga and Sgeir a Chaisteil. Birds were also seen on suitable breeding sites at Fladda.

A 98% increase in the estimated breeding population on Lunga between 2003 and 2004 returns the population to a size comparable to most years since 1994. Previous to a marked reduction in 2003, the mean estimated number of breeding pairs of Puffin for Lunga since 1994 was 1776 pairs (range 1,631 – 2,549, n=9) with that in 2004 estimated at 1,850 pairs. The species is however difficult to census accurately, especially when other burrowing species are present in the vicinity of the colonies i.e. Rabbits and Manx Shearwaters, or adults are counted due to burrows being hidden by vegetation or the viewing perspective.

In common with Guillemot and Razorbill, comparatively fewer Puffins were seen to arrive at the colonies carrying fish than would be expected in late June.

Rock Dove Columba livia

Regular breeding species in very small numbers

A minimum of three birds were present at the south end of Lunga with one pair using a cave in sector 5. Elsewhere, single pairs were seen around the cliffs in area 10 and 12a on single dates. No evidence of breeding was found.

Swift Apus apus

Irregular visitor

A single bird was noted over the Village, Lunga, on the 22nd June.

Skylark Alauda arvensis

Regular breeding species in small numbers

The presence of at least four singing males on Lunga in 2004 is encouraging in that it follows a period of population decline since the 1990s that culminated in only one singing bird in 2003. Territories were over the north slope of Cruachan immediately above the Village, on the saddle of Cruachan above Shearwater Gully, in sector 6 and in sector 7. No birds were noted during a brief visit to Fladda.

Swallow Hirundo rustica

An irregular visitor

A single bird was noted over the Village, Lunga, on the 21^{nst}June.

Meadow Pipit Anthus pratensis

Regular breeding species in small numbers

Widespread breeding species on Lunga and Fladda with no estimation of territories made though probably less numerous than Rock Pipit *Anthus petrosus*.

Rock Pipit Anthus petrosus

Regular breeding species in small numbers

Common breeding species along the coast of Lunga, with birds also noted on Fladda, Sgeir an Eirionnaich and Sgeir a Chaisteil.

Pied Wagtail Motacilla alba yarrelli

Irregular breeding species

At least one pair is thought to have bred on Lunga with an adult female and dependent juvenile noted on one date south of Harp Rock (sector 10). What was perhaps a separate female with young was noted carrying food at Shearwater Gully on the same date (20th June) and later in the week. A singing male and juvenile were also seen on separate occasions to the north at the Village. Elsewhere on Lunga, single adults were noted from around Tarbet, Harp Rock and Corran Lunga. A single bird was noted during a visit to Sgeir a Chaisteil.

Wren Troglodytes troglodytes

Regular breeding species, guite common where habitat suitable.

As in previous years, the vast majority of records of the species 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. Casual observations identified a minimum of twelve territories on Lunga and three on Sgeir a Chaisteil. One pair was found nesting within the Village at the north end of Lunga, whilst recently fledged broods were found near to Harp Rock and north of Shag Alley. Mist netting at the Village

caught the breeding adult female (with brood patch) and two juveniles.

During a brief visit to Fladda, two singing males were noted on the low lying "waist".

Wheatear Oenanthe oenanthe

Regular breeding species in small numbers

A minimum of nine families of dependent and presumed locally bred young were noted on Lunga with the two southernmost broods located between area 5 & 6 and at east Tarbet. The remainder of the broods were centred upon the cliff top plateau surrounding Cruachan, with the exception of a single brood on Corran Lunga.

Elsewhere two fledged broods were noted on the low lying "waist" of Fladda during a brief visit on 25th June.

Sedge Warbler Acrocephalus schoenobaenus

Scarce visitor

During one of several visits to the reedbed at the south-east end of Lunga, one bird was briefly heard in song on 24th June. Previous records also refer to a single individual at the same locality during late June in the years 1997, 1998, 1999 and 2002.

Hooded Crow Corvus corone cornix

Regular breeding species in small numbers

The species was noted daily on Lunga, predominantly in those areas from Cruachan summit southwards, involving both moulting adults and non-moulting juveniles. A minimum of 5 birds were involved, including one pair of adults and three juveniles, suggesting at least one pair may have successfully bred on the island. No nest site was found. Three juveniles and one un-aged bird were seen during the brief visit to Fladda on 25th June.

Single birds noted on single adjacent dates near Shag Alley and the Village were seen heavily oiled by, it was presumed, Fulmar.

Raven Corvus corax

At least one pair breeds in most years

Observations suggest that one pair of moulting adults and five juveniles were in residence on Lunga though never recorded as a single family unit. The largest counts were of two adults with two juveniles and, on a separate date around Cruachan, five juveniles and later two adults. Only one adult was recorded on Fladda during a brief visit on 25th June. No nest sites were located.

Starling Sturnus vulgaris

Regular breeding species in small numbers

As the week progressed, the flocks reported increased in size from 18 on 20th June at the south end of Lunga to one of 50 birds at Sgeir an Eirionnaich on 25th June. The flocks were comprised of adults and juveniles, the island's population peaking at the week's end at an estimated 50-100 birds. An occupied nest was located in cliffs at Lunga's south end (area 5), whilst an adult was observed carrying food on to Harp Rock.

Twite Carduelis flavirostris

Regular breeding species in small numbers

A minimum of three families of dependent and presumed locally bred young were noted on Lunga. These centred upon the Village at Lunga's north end, the gully south of Harp Rock and area 6. Elsewhere on Lunga up to three birds were noted at Shearwater Gully including two singing adults, and 1-2 birds at the south end.

During the brief visit to Fladda at least two family parties of 4 and 3 birds were noted.

SYSTEMATIC LIST OF MAMMALS FOR 2004

Otter Lutra lutra

Evidence of presence regularly noted

Following last year's sighting, one female accompanied by two well grown young were watched for over 15 minutes (by all expedition members!), fishing and playing in the water between Lunga and Corran Lunga on the evening of 23rd June.

House Mouse Mus musculus

Resident

At least three animals were seen at the expedition base, the Village, at the north end of Lunga.

Rabbit Oryctolagus cuniculus

Resident, numbers much reduced in recent years.

Though no systematic monitoring of this species occurred, casual observations on Lunga continued to suggest fewer visible animals than in the years immediately prior to 2002. All sightings of black individuals were of singles noted on Lunga.

No animals were seen during brief visits to Fladda.

Grey Seal Halichoerus grypus

Regular breeding species whose numbers are regularly monitored by the Sea Mammal Research Unit (NERC, St Andrews)

Up to 20 animals regularly hauled out on intertidal reefs north and north-east of Lunga. A single animal was also noted off the South end of Lunga.

Minke Whale Balaenoptera acutorostrata

Resident in Hebridean waters

Several distant sightings were made of one or more animals to the west and north of the Treshnish Isles on the 22^{nd} June.

Harbour Porpoise Phocoena phocoena

A resident in West Scottish coastal waters

At least one animal was sighted to the west of Lunga on 22nd June. Upon the expedition's departure on 25th June, at least four animals were seen from the boat at approximately a kilometre or so east of the Treshnish Isles.

SYSTEMATIC LIST OF BUTTERFLIES FOR 2004

Small White Pieris rapae

Presumed migrant

One was seen at the south end of Lunga (area 6) on 21st June.

Common Blue Polyommatus icarus

Regular breeder

Small numbers (les than 10) were seen daily on Lunga until the final day, 25th June, when fine weather coincided with over 30 individuals being noted. A single was noted during a brief visit to Sgeir a Chaisteil on 20th June.

Peacock Inachis io

Presumed migrant

One was seen during the brief visit to Fladda on 25th June.

Red Admiral Vanessa atalanta

Migrant

2-3 were seen on 3 dates on Lunga up until the final day, 25th June, when fine weather coincided with over seven individuals being noted.

Painted Lady Vanessa cardui

Regular migrant

Between 2 and 10 individuals were recorded daily on Lunga, with all from sites lying from Tarbet northwards. Elsewhere 6 individuals were noted on Fladda during the expedition's brief visit on 25th June.

OTHER SPECIES RECORDED SYSTEMATICALLY

Three-spined Stickleback Gasterosteus aculeatus

Unknown

All rain filled pools inspected on Sgeir an Eirionnaich held a population of this fish species.

The Magpie Moth Abraxas grossulariata

Probable resident

Single moths were seen at the Village, Lunga, on Sgeir an Eirionnaich, and on Fladda.

Oyster Plant Mertensia maritima

Localised species known only from "colonies" at Tarbet (west), Lunga and the north end of Sgeir a Chaisteil.

Over 381 plants were identified on the beach at Tarbet (west), Lunga, with much spreading of many well established plants making separation of individuals extremely difficult. 117 plants were counted at the other well established "colony" at the north end of Sgeir a Chaisteil.

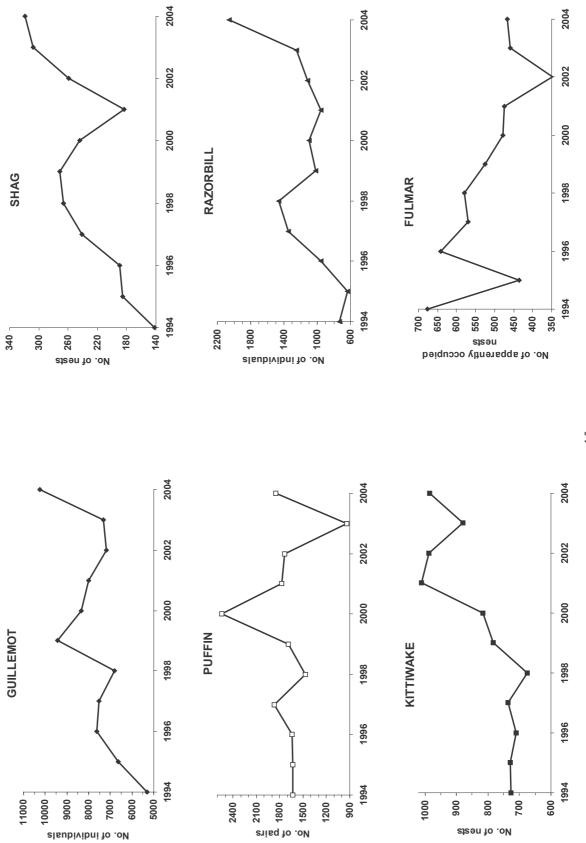
2004 BREEDING SEABIRD CENSUS DATA FOR LUNGA AND SGEIR A CHAISTEIL

Totals for each Sub Colony Zones of Lunga and Sgeir a Chaisteil

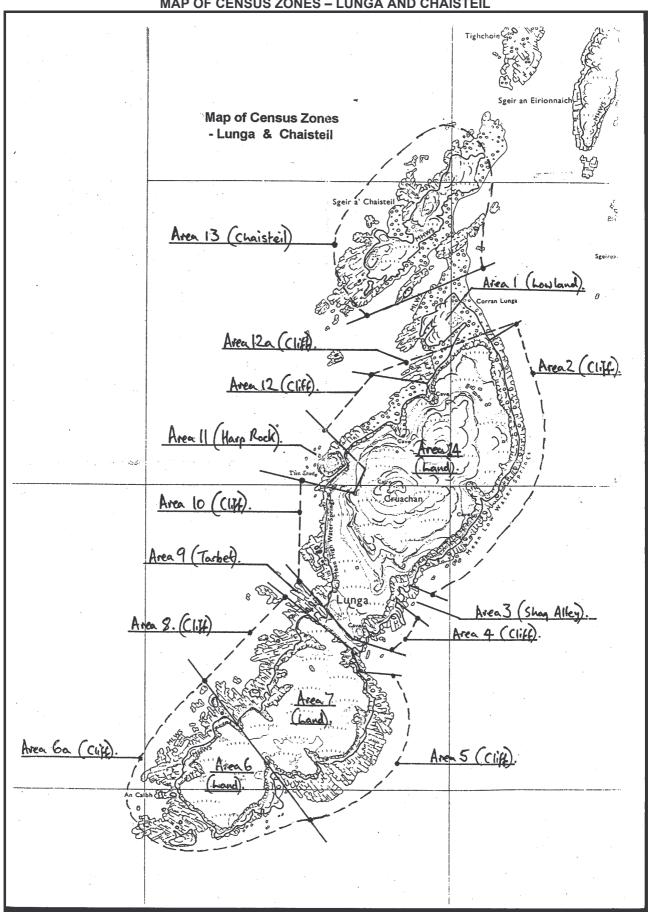
Sector	Count				0	ount Se	ctors on	Count Sectors on Lunga (1 - 12) and Sgeir a Chaisteil (13)	1 - 12) a	and Sgei	r a Chai	steil (13					Lunga & Chaisteil
	nnit	_	2	3	4	2	9	6a	7	8	6	10	11	12	12a	13	Totals
Fulmar	AON		39	4	24	46		49		69	15	33	42	129	10	87	547
Shag	AON		47	09		39		9		51		29	27	09		23	342
Lesser B-b Gull	PRS									_							-
Herring Gull	PRS					_	_		_	17				2	2	9	33
Great B-b Gull	PRS	-			-		56		11			-		_		_	42
Kittiwake	AON											9/	826	89	15		985
Bonxie	AON																0
Razorbill	QN		284	69	22	22		34		34		108	112	288	13	4	2064
Guillemot	QN		15			34		-				885	898	298	75	118	10385
Black Guillemot	PRS							7									7
Puffin	<u>N</u>		420	303	53	2						37		439			1254
Puffin	AOB												340		883	310	1533

Key to count unit codes:

AON = Apparently occupied nest IND = Individuals PRS = Pairs AOB = Apparently occupied burrow







TRESHNISH RINGING TOTALS FOR 2004

Site	Species	Adults	Pulli	Retraps	Controls	Total
Lunga	Fulmar	47		8		55
	Manx Shearwater			1		1
	Storm Petrel	83		48	7	138
	Shag	45	155	14		214
	Herring Gull		11			11
	Great Black-backed Gull		4			4
	Kittiwake	21		16		37
	Guillemot	800		61	5	866
	Razorbill	146	1	26		173
	Puffin	226		9	1	236
	Meadow Pipit	3				3
	Rock Pipit	2				2
	Wren	3				3
	Wheatear	2				2
Sgeir a Chaisteil	Great Black-backed Gull		2			2
Sgeir an Fheòir	Eider	1				1
	Great Black-backed Gull		1			1
Sgeir an Eirionnaich	Great Black-backed Gull		11			11
Treshnish Isles	Grand total for 2004	1379	185	183	13	1760

Note: Rings used in 2004 were registered under *Treshnish Auk Ringing Group* and *Robin M. Ward*. Retraps: No retraps of birds ringed earlier during the 2004 expedition are included.

AN ASSESSMENT OF TIARG'S CONTRIBUTION TO THE BRITISH AND IRISH RINGING SCHEME

The Treshnish Isles Auk Ringing Group (TIARG) has ringed over 26,000 seabirds between the years 1971 - 2004, a substantial proportion of the national ringing total for some species and years. Tabulated below is TIARG's contribution to the National Ringing totals in 2002 (Clark *et al* 2003)*.

	Juv/a	ad ringed 2	.002	Pull	i ringed 20	002	Ringing To	otals to & i	ncl 2002
	UK &	TIARG	% UK	UK &	TIARG	% UK	UK &	TIARG	% UK
	Eire		& Eire	Eire		& Eire	Eire		& Eire
Fulmar	529	22	4.2	1,343	0	0	108,646	313	0.3
Storm Petrel	8,235	15	0.2	48	0	0	394,265	8767	2.2
Shag	250	10	4	4,859	87	1.8	202,014	1248	0.6
Great Skua	61	0	0	1,482	1	0.1	72,513	2	0.003
Common Gull	102	0	0	1,463	11	0.8	79,710	31	0.04
Herring Gull	322	0	0	3,331	11	0.3	301,131	418	0.1
Great black- backed Gull	22	0	0	2,136	5	0.2	70,084	297	0.4
Kittiwake	375	3	0.8	1,265	0	0	123,079	169	0.1
Guillemot	1,312	425	32.4	9,531	0	0	281,082	5738	2.0
Razorbill	510	89	17.5	1,853	21	1.1	99,063	2253	2.3
Puffin	5,753	351	6.1	293	0	0	228,274	4768	2.1

^{* 2002} is the most recent British & Irish annual ringing totals available at the time of publication.

TRESHNISH RINGING TOTALS 1971 - 2004

SPECIES	1971	1974	1976	1977	1978	1980	1982	1984	1986	1989	1991	1993
Fulmar	17	6	4		8	21	14	18	7	21	15	
Manx Shearwater		2	13		4	4	1	8				
Storm Petrel		254	22		1	283		203	800	411	975	75
Shag	150	7	10	10	24	80	50	160		40	10	
Buzzard						1	2					
Oystercatcher		1				1	4	2				
Common Sandpiper												
Great Skua												
Common Gull												
Herring Gull	6	1		_	14	46	35	56	4	4	3	
Great Black-b. Gull	3	6	3	7	6	22	14	35		22	15	
Kittiwake						1	1	1	2	2	4	
Guillemot	32	20	14		66	502	137	364	180	250	306	
Razorbill	65	72	90		115	266	218	236	151	103	64	
Black Guillemot	7.0	400	074		000	000	000	400	47.4	400	444	
Puffin	70	198	271		203	200	208	182	174	160	114	
Meadow Pipit									_	4		
Rock Pipit									5	1		
Pied Wagtail												
Wren			40					4	2			
Wheatear Willow Warbler			12					1	3			
Twite												
	242	EEO	420	17	444	1407	604	1066	1226	1014	1506	75
TOTAL	343	558	439	17	441	1427	684	1266	1326	1014	1506	75

SPECIES	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Fulmar	4	27	38	7	24	23	12	25	22	25	47	385
Manx Shearwater	9	1		2	1	4	4			2		55
Storm Petrel	440	536	331	1104	741	732	814	1030	15	360	83	9210
Shag	10	59	96	99	150	100	59	37	97	99	200	1547
Eider											1	1
Buzzard												3
Oystercatcher						2		1				11
Common Sandpiper					1							1
Great Skua					1				1	1		4
Black-headed Gull												
Common Gull					4		5	11	11	6		37
Herring Gull	5	24	19	52	73	39	15	11	11	8	11	437
Great Black-b. Gull	6	25	16	48	19	16	2	27	5	21	18	336
Kittiwake	6	10	1	50	41	23	13	11	3	2	21	192
Guillemot	109	498	349	472	503	507	892	312	425	261	800	6799
Razorbill	81	101	105	98	112	102	133	31	110	56	147	2456
Black Guillemot				1				1				2
Puffin	358	236	301	267	398	274	389	214	351	244	226	5238
Meadow Pipit		4		1			12	1	4	1	3	26
Rock Pipit		2	4	2		2	1	2	2	2	2	25
Pied Wagtail	1	3	2									6
Wren		3						1			2	6
Wheatear			5	24	37	22	50	24	2	2	2	184
Willow Warbler		1										1
Twite				2					1			3
TOTAL	1029	1530	1230	2130	2109	1844	2401	1739	1059	1090	1563	26965

NOTES:

- Data for 1971 1995 extracted from Walker & Cooper (1996).
- Ringing data for a three day visit in 1972 was not available.
 In 2003 wind speed and in particular direction was unfavourable for the fleyging of large numbers of auks usually ringed at Harp Rock. Likewise wind was a factor in the reduced Storm Petrel catch.

RECENT RINGING RECOVERIES

Abbreviations used:

Age 1 - Pullus

4 - Hatched before this calendar year, exact year unknown6 - Hatched before previous calendar year, exact year unknown8 - Hatched more than two calendar years before year of ringing

Manner of recovery

R - Caught and released by a ringer

X - Found dead

XF - Found freshly dead or dying

XL - Found long dead

SR - Sick or injured, released with ring

VV - alive and probably healthy, ring read in field by non-ringer

// - condition on finding wholly unknown

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

Fulmar

FR76734 4 27/6/1989 Lunga

X 05/3/2004 Hornum, Nordfriesische Insein, F.R. Germany

941 km 102 degs 5365 days

Remarks: This is only our second recovery. This individual was from a Fulmar wreck that involved many hundreds of birds found dead along all North Seas coasts in early 2004. Post-mortem work carried out by BTO staff showed that virtually all of these birds were adult females that had died when their guts started to bleed into themselves, a classic sign of acute starvation.

Storm Petrel

D014332 4 14/6/1995 Ponta de Almadena, Faro, Algarve, Portugal

R 24/6/2003 Lunga

2165km 5 degs 2932 days

Remarks: This is our fifth Portuguese recovery, all having originated from Ponta de Almadena.

Storm Petrel

2560208 6 24/6/2003 Lunga

R 12/7/2004 Priest Island, Highland Region

173 km 19 degs 384 days

Remarks: This bird was retrapped in a breeding colony without the use of tape lure

Storm Petrel

E409786 4 28/7/2000 Krakenes Fyr, Vagsoy, Sogn og Fjordane, Norway

R 24/6/2003 Lunga

895 km 227 degs 1061 days

Remarks: This is our sixth Storm Petrel recovery from Norway, and second from this region & site

Storm Petrel

2538450 4 27/6/2000 Fladda

R 01/8/2004 Sheepland Harbour, Ardglass, Co.Down, Northern Ireland

252 km 168 degs 1496 days

Shag

1373760 1 30/6/2000 Lunga

X 12/8/2002 Gunna, Isle of Tiree, Strathclyde

19km 294 degs 773 days

Shag

1378463 1 27/6/2002 Lunga

XF 18/4/2003 Heanish, Tiree, Strathclyde

24km 270 degs 295 days

Remarks: Bird found freshly dead on tideline

Shag

1378463 1 27/6/2002 Lunga

X 3/5/2003 Between Mannal & Hynish, Tiree, Strathclyde

29km 263 degs 310 days

Remarks: Bird found dead on shore

Shag

1399655 1 28/6/2003 Lunga

X 26/1/2004 Loch Kishorn, Ardarroch, Highland Region

112km 27 degs 212 days

Remarks: Bird found dead on loch shore

Shag

1399673 1 28/6/2003 Lunga

X 02/5/2004 Traigh Thodhrasdail, near Kilkenneth, Tiree

34 km 270 degs 309 days

Remarks: Bird found dead on tideline

Great Black backed Gull

HT80365 1 26/6/2003 Lunga

XF 25/1/04 Moleigh, Strathclyde

62 km 101 degs 213 days

Remarks: Freshly dead, found shot at rubbish dump

Guillemot

X99260 6 21/6/1999 Lunga

XF 23/12/2003 Treflez, Finistere, France

887km 171 degs 1646 days

Remarks: Freshly dead, oil victim

Guillemot

R19875 4 27/6/2000 Lunga

R 14/6/2003 Port Ban, Isle of Colonsay, Strathclyde

47km 165 degs 1082 days

Remarks: This bird was also controlled on Colonsay on 11th June 2002

Guillemot

X99377 6 21/06/1999 Lunga

XF 01/01/2004 Wembury, nr Plymouth, Devon

703km 168 degs 1655 days

Remarks: Bird found freshly dead on beach

Guillemot

D014332 4 29/6/89 Lunga

XF 24/6/2003 Armadale Bay, Highland Region

270 km 32 degs 5553 days

Remarks: Bird found freshly dead on beach

Guillemot

R20175 4 29/6/2000 Lunga

XF 30/4/2004 Dunnet Bay, Caithness

298 km 38 degs 1401 days

Guillemot

X99415 6 22/6/1999 Lunga

XF 12/1/2004 Brem-sur-Mer, Vendee, France

1143 km 164 degs 1665 days

Remarks: Freshly dead, oil victim

Guillemot

X79591 6 29/6/1998 Lunga

XL 25/5/2004 near Clachandhu, Mull, Strathclyde

20 km 107 degs 2157 days

Guillemot

R24648 6 27/6/2002 Lunga

XL 07/6/2004 Glenelg, Highland Region

94 km 32 degs 711 days

Remarks: Bird found dead, not fresh on shingle ridge

Guillemot

R24992 6 24/6/2003 Lunga

R 08/6/2004 Port Ban, Isle of Colonsay, Strathclyde

47 km 165 degs 350 days

Remarks: This bird was also retrapped at Port Ban on 14th June 2004

Razorbill

M92502 6 26/6/2000 Lunga

X 21/6/2004 between Cemlyn Bay and Wylfa, Anglesey, Wales

383 km 160 degs 1061 days

REFERENCES

Clark, J.A., Robertson, R.A., Balmer, D.E., Blackburn, J.R., Griffin, B.M., Adams, S.Y., Collier, M.P. & Grantham, M.J. 2003. Bird Ringing in Britain and Ireland in 2002. *Ringing & Migration* 21: 234 - 267.

Mavor, R.A., Parsons, M., Heubeck, M. & Schmitt, S. 2004. *Seabird numbers and breeding success in Britain and Ireland, 2003.* Joint Nature Conservation Committee, Peterborough. (UK Nature Conservation No. 26.)

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

THE EXPEDITIONS 1971 – 2004

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 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, Chaisteil and Fladda.

Chris Redfern et al.

Storm Petrel ringing.

1994 Simon Walker, Mike Smith, Dennis Cooper, Jan Densham, Danny Lenain. Full census Lunga and Chaisteil and ringing.

THE EXPEDITIONS 1971 – 2004 (con't)

- 1995 Simon Walker, Mike Smith, Dennis Cooper, Jan Densham, Fergus Henderson. Full census Lunga and Chaisteil and ringing.
- 1996 Simon Walker, Mike Smith, Dennis Cooper, Danny Lenain, Robin Ward Full census of Lunga and 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, 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, 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, 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, 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, Chaisteil and the islands between Lunga Fladda. Ringing.

RING SERIES USED ON THE TRESHNISH ISLES SINCE 1927*

SHAG RINGS	A2 RINGS	E RINGS	F RINGS	G RINGS	H RINGS	RAZORBILL RINGS	GUILLEMOT	MISC. RINGS
1080101 – 110 20105 1087111 – 120 21019 1105561 – 570 21214 112361 – 550 21670 1123961 – 970 22385 1159651 – 700 22610 1163701 – 740 22840 1168001 – 100 23099 1170601 – 700 23113 1187901 – 950 23115 1237401 – 950 23693 1328481 – 490 24050 1352951 – 960 23693 1328481 – 490 24050 1378751 – 3900 24365 136901 - 7000 24365 1378751 – 3900 24462 1378401 – 8500 24555 1399601 – 700 24800 1408301 – 500 25135 25540 ** Ring series still in use #* Ring series still in use	2010581 – 583 2101991 – 2000 2121401 – 500 2167051 – 068 2170201 – 203 2238501 – 600 2284001 – 500 2309901 – 10000 231501 – 200 2348001 – 500 2348001 – 500 2348001 – 500 244501 – 500 244501 – 6000 2430701 – 900 245501 – 6000 2513501 – 4000 25538001 – 800 2554001 – 500 2554001 – 500 2554001 – 500 2554001 – 500 2554001 – 500 2554001 – 500	1080101 - 110 2010581 - 583 EF75001 - 500 FB22601 - 700*** GH21301 - 350 HT09001 - 004 HT17871 - 890 M45601 - 800 R19401 - 20200 102561 - 700 2121401 - 600 EG23501 - 700 FC52551 - 556 GJ35401 - 500 HT17871 - 890 M45601 - 800 R19401 - 20200 112561 - 550 212001 - 600 EG23801 - 999 FR13606 - 836 GJ35401 - 600 HT17831 - 990 M45601 - 800 R19401 - 20200 112361 - 900 Z23801 - 999 FR13600 - 800 EG23801 - 982 FR134001 - 600 EG38601 - 999 FR13600 - 800 EF14401 - 600 EG8801 - 900 FR14401 - 600 EG8801 - 900 FR14401 - 600 EH5361 - 200 EH5301 - 2	FB22601 – 700** FC52551 – 558 FC52571 – 568 FR13606 – 636 FR14401 – 500 FR56351 – 400** FS51016 – 500 FV10641 – 620 FV10646 – 650 FV10646 – 650 FV54446 – 460 FV54410 – 226 FV54410 – 226 FV62410 FV62	GH21301 - 350 GJ35401 - 500 GJ35401 - 500 GJ99081 - 082 GK34351 - 354 GK50214 - 220 GK50214 - 220 GK50251 - 570 GK62985 - 990 GK90821 - 840 GK91471 - 490 GP74501 - 75000	HT09001 - 004 HT17871 - 890 HT34021 - 030 HT34021 - 210 HT68201 - 210 HT68221 - 226 HW05351 - 360 HW06951 - 7000 HW08994 - 09000 HW088101 - 110 HW68101 - 110 HW68101 - 110 HW87211 - 225 HW94907 - 913 MA12551 - 600**	K10701 – 1000** M46501 – 800 M55001 – 500 M72451 – 800 M85501 – 800 M88501 – 300 M92501 – 700**	R07001 - 100 R19401 - 20200 R24001 - 26350** R31601 - 900 R51501 - 2000 R51501 - 2000 X65501 - 6000* T14001 - 5000 X39501 - 40000 X56501 - 57000 X63001 - 500 X63001 - 500 X63001 - 500 X63001 - 500 X99001 - 500	1F4094 - 097 C331894 - 900 E196501 - 520 JB44316 ('94) K039209 - 230 K419290 - 295 NA84296 - 299 KX83101 - 106 KX83116 - 118
Kilig series yet to be used								