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POPULATION TRENDS OF GULLS AND OTHER SEABIRDS
ON THE ISLE OF MAY IN 1991

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SUMMARY

1. The number of herring gull nests (1447) decreased for the fourth year running. Numbers of lesser black-backed gull nests (788) have increased slightly.
2. Adult survival of the herring gull is now lower than in the 1960s and 1970s.
3. Breeding success of herring gulls was extremely high (1.88 young fledged per pair) whereas that of the lesser black-backed gull (0.98) was about average.
4. Many kittiwakes did not build nests and the whole island count (6535 nests) was 20% lower than 1990.
5. There was no significant change in numbers of guillemot (16834 birds) or razorbill (1633 birds).
6. Despite breeding being very late, the count of shag nests (1487) was 7% up on that in 1990.
7. The count of eider nests (592) was 30% down on the highest ever count in 1990.
8. Thirty-two pairs of oystercatchers bred but reared a total of only 8 young. Adult survival was 82%.

INTRODUCTION

1.1 Following a request from the Isle of May Bird Observatory in the early 1970s, NCC put considerable effort into reducing the numbers of herring gulls Larus argentatus and lesser black-backed gulls L. fuscus breeding on the Isle of May NNR, Fife during the 1970s and the 1980s. The British populations of both species are now declining and there is a need to obtain up-to-date information on adult survival rates and breeding output and to continue making annual assessments of the numbers of breeding gulls on the Isle of May. Such long-term data are essential for the sensible management of the National Nature Reserve.

In 1989 NCC gave ITE a contract to (1) make annual counts of the gull nests, (2) estimate the annual survival of adult herring and lesser black-backed gulls, (3) ensure that adequate samples of young of both species were ringed, and (4) estimate breeding output.

1.2 Cliff-nesting seabirds (guillemot Uria aalge, razorbill Alca torda, Shag Phalacrocorax aristotelis, and kittiwake Rissa tridactyla) form an important part of the nature conservation interest of the island. Changes in the numbers of seabirds are good indicators of the health of the marine environment and the populations of the Isle of May are well documented. Continuing annual estimates of the total breeding populations together with sample monitoring counts are required.

Although there are few critical data, the numbers of eiders Somateria mollissima and oystercatchers Haematopus ostralegus are thought to have declined when gull numbers were at their highest. Now that gull numbers have been reduced, eiders and oystercatchers appear to have increased. The Isle of May is receiving increasing numbers of human visitors which might have an adverse influence on these birds. Annual counts of the breeding populations are required for monitoring purposes. Measurement of breeding success is required to relate to population levels.

In 1991 a new contract for an expanded programme of work was agreed which required the following.

1.2.1 Herring and lesser black-backed gulls

- a) Organize whole island count of nesting gulls to establish population trends.
- b) Report on annual changes in numbers.
- c) Determine breeding success.
- d) Ensure that adequate numbers of young gulls are ringed.
- e) Report annually on the state of the populations.
- f) Determine adult survival rates of both species.

1.2.2 Cliff nesting seabirds

- a) Make total island annual counts.
- b) Make annual monitoring counts on fixed sample plots.

1.2.3 Eider - Make whole island nest count annually.

1.2.4 Oystercatcher

- a) Determine annual breeding population.
- b) Determine breeding output.
- c) Determine annual adult survival.

1.2.5 Set up and up-date annually a data base of counts of all species.

1.2.6 Collate counts and assess changes in numbers.

1.2.7 Publish the results of NCCS-funded work.

1.2.8 Publicise NCCS' commitment to seabird conservation and long-term population studies.

1.3 The puffin is excluded as this is the subject of an on-going study funded by BP and NERC.

1.4 Data on breeding success and the food of chicks are covered by a separate contract and these results are presented in a separate report to JNCC.

1.5 The second author was a NCC summer warden on the Isle of May with responsibility for carrying out much of this work.

1.6 Various people helped with the counts and they are acknowledged in the notes to the tables. For ease of comparison, the layout of the report follows past reports and layouts and numbering of the individual tables follow previous Summer Wardens' Annual reports.

2.1 Herring *Larus argentatus* and lesser black-backed gulls *Larus *Larus argentatus fuscus**

2.1.1 Gull nest count

The count was carried out on 28-30 May 1991 by a team of people systematically searching the island and recording and marking all clutches and well-formed but empty nests (Table 1). The efficiency of counting was assessed by a single observer visiting an area immediately after the nests there had been counted and recording the proportion of nests and clutches which has been marked during the count (Table 2).

A total of 1957 nests and clutches were marked and the overall calculated total taking account of those missed was 2235. This total was very similar to the 1989 count (2272) and the 1990 count (2169). However, subtotals for various sections of the colony showed some substantial increases and declines in different parts of the colony (Table 5). Also the changes in the numbers of the two species were very different. The largest increases were in the main lesser black-backed gull strongholds of North Plateau, Lady's Bed and the Kettle, the larger decreases in areas dominated by herring gulls.

The proportions of herring and lesser black-backed gulls nesting in each area were assessed by counts of individual gulls visible from from vantage points after they had been disturbed (Table 3). About 40% of the individual gulls estimated to be present on the island were checked. Assuming that these herring:lesser black-backed gull ratios were representative, there were 1447 herring gull nests and 788 lesser black-backed gull nests on the island. The comparable 1990 totals were 1551 and 618 which suggests a decrease of 6% in the herring gull numbers and an increase of 28% in the lesser black-backed gull population.

Despite the cessation of culling there has been a gradual reduction in numbers of herring gull nests in recent years with 1711 in 1988, 1629 in 1989, 1551 in 1990 and 1447 in 1991. In contrast the lesser black-backed gull is increasing with 563 nests in 1988, 643 in 1989, 618 in 1990 and 788 in 1991, but numbers are still well below those in the early 1980s (Table 19).

2.1.2 Colour-ringing

Incubating adults were caught with walk-in traps. Each gull was given a unique colour-combination which always included a green ring with a large engraved M (as a colony specific ring). Each gull had its overall head and bill-length measured which enabled it to be sexed after the cumulative frequency distribution curve had been plotted (see Coulson *et al.* Ibis, 125 (1983); 549-557). The head and bill lengths separating the larger males from the smaller females for herring and lesser black-backed gulls were 120 and 116 mm, respectively.

Of 164 herring gulls and 141 lesser black-backed gulls with colour-rings in 1990, 124 (75.6%) and 116 (82.3%) were resighted in 1991. The true survival rates will be higher than this as some individuals will have been still alive and have either been over-looked or moved elsewhere. Therefore, these figures should not be used without reference to M P Harris. An Isle of May adult lesser black-backed gull seen on Craigleith in May 1990 (but not recorded on the Isle of May that year) was breeding again on the Isle of May in 1991. In all, 10 herring gulls and 10 lesser black-backed gulls ringed in 1989 and not seen in 1990 were resighted in 1991. Including these increased the 1989-90 survival rates of the two species to 86.7% and 88.6%, respectively. In 1991, 20 additional herring gulls and 28 additional lesser black-backed gulls were colour-ringed.

Most previous studies including those on the Isle of May in the 1960s and 1970s have found adult survival of the herring gull to be 90% or more for these species. The present findings suggest that adult survival of Isle of May herring gulls has been substantially reduced. There are few previous data on the survival of lesser black-backed gulls.

2.1.3 Young gulls ringed and breeding output

Totals of 1907 young herring and 546 young lesser black-backed gulls were ringed (Table 8). Virtually all of these were well-grown and most are thought to have fledged. A survey of c. 22% of the total of fledged or nearly fledged young present found that c. 70% had been ringed (Table 9). This compared with 67% and 71% in 1989 and 1990. Assuming that this figure was representative of both species, 2709 young herring and 776 young lesser black-backed gulls or 1.88 and 0.98/nest, respectively. These figures compared with almost exactly one young fledged/pair by both species in 1989 and 1.23 and 0.54 for herring and lesser black-backed gulls in 1990. The reason for the lower success of lesser black-backed gulls is unclear. Young of this species which often hide in thick vegetation may be harder to find than those of the herring gull but this error is considered unlikely to be sufficient to explain the observed differences.

2.2 Kittiwake Rissa tridactyla

Many pairs did not build nests in 1991 and the whole island count of 6535 nests was 20% lower than that recorded in 1990 was the lowest since 1986 (Tables 10 & 19). Breeding was late and more synchronised than usual. Counts of the monitoring plots were 22% lower than in 1990 (Table 11).

2.3 Guillemot Uria aalge

Nine counts of the monitoring plots were made before the first major 'fledging' night on 19th June. Although the mean total was 7% up on that for 1990 the difference was not statistically significant (Tables 12 & 13).

There was only a trivial difference (+56 birds) between the total island count in 1990 and 1991 but, after conversion of each individual area count to pairs using a correction factor obtained from the daily checks at the Cornerstone study area, the number of pairs breeding appeared to have declined by 10% (12632 in 1990 to 11440 in 1991) (Table 10). This suggests that either (a) more immatures were present or (b) breeding adults were spending more of their off-duty time ashore in 1991 than they had in 1990. Checks during the middle of the day during 4-24 June 1991 to determine whether a chick with attended by one of both adults found that on average, 24% had 2 adults present. The corresponding figure for 1990 was 12%, thus it appeared as though adults were indeed spending more time at the colony in 1991 than they had in 1990.

The general picture is of little change in total numbers following a decline 1983-88 (Table 19). Other work suggests that this stabilization is due to a high survival of chicks reared in 1986 compared with the survival of earlier cohorts. These 1986 young are now just starting to enter the breeding population.

2.4 Razorbill *Alca torda*

As is usual with this species the monitoring counts were very erratic with the daily total varying 387-596 (Table 14). The 2% increase between 1990 and 1991 was not statistically significant (Table 15). The whole island count of birds was 31% down on the 1990 count but after conversion to pairs (same method as for guillemot), the difference was only -5% (Table 10).

There appears to have been little overall change in the population in recent years (1987-91) as 1989 had the highest count and 1991 the lowest (Table 19).

2.5 Shag *Phalacrocorax aristotelis*

The count of 1487 nests was 7% up on that of 1990 (Table 10) despite laying being extremely late. More birds with traces of immature plumage held sites than had done so in recent years, but few of these bred successfully.

2.6 Eider *Somateria mollissima*

413 nests were recorded during the whole island between 28-30 May (excluding the Beacon tern area). A subsequent visit to the tern area located an additional 34 eider nests. Counting efficiency was estimated at 75.5% (71 out of 94 nests marked inconspicuously prior to the main count) suggesting a total of about 592 nests. The accuracy of such one-off counts is unknown but the general impression of fieldworkers was of a marked reduction compared with the highest ever count of 841 in 1990 (Table 19).

Clutch-sizes of nests where birds were inadvertently flushed were c/0 (2), c/1 (13), c/2 (20), c/3 (18), c/4 (26) and c/5 (4).

2.7 Oystercatcher Haematopus ostralegus

Thirty-one pairs were proved to breed, and one pair almost certainly did so. In addition, one pair held a territory but was considered not to have laid. The 1991 total of 32 breeding pairs was four fewer than that for 1990.

One pair reared two young and six pairs reared one young. Thus breeding success was low at 0.25 chicks fledged per pair. Details of breeding are given in Table 17 and the distribution of pairs in Map 1. Breeding oystercatchers have been caught in nest-traps for many years. Survival between 1990 and 1991 was 82% (46/56 birds) which is about average. Twelve new adults were colour-ringed in 1991 and one more was individually identifiable because it had a deformed leg. Nest 12 and 13 were occupied by a trio of adults. Only three breeding adults remained unringed at the end of the season.

2.8 General breeding success Additional studies, which are the subject of a separate report to JNCC, under contract HF3-03-430, show that 1991 was a good breeding season for shags (despite laying being very late), an average season for terns (but markedly better than previous years), fulmar, razorbill and guillemot, below average for puffin (mainly because some chicks died in early July) and very poor for kittiwake.

THE FUTURE

3.1 The arrangements whereby one of the summer wardens worked under the direction of the contractor for much of the breeding season was very successful and should be continued.

3.2 It is relatively easy to mark large samples of birds for the estimation of survival rates but much greater effort is needed to ensure adequate levels of resighting for survival estimates. Changes of only a few percent in the survival rates of these long-lived species have a highly significant effect in demographic terms. In 1990 and 1991 we both spent many hours each day looking for colour-rings.

3.3 Data collection on gull numbers, breeding output and adult survival is proceeding well. Large numbers of young gulls have been ringed and these should provide an estimate of survival to breeding age. Within a year or two a detailed analysis will be made of the population dynamics of the Isle of May gulls since culling ceased.

3.4 Accurate knowledge of population structure and dynamics is essential in assessing the interactions of seabirds and their prey. This knowledge can only come from long-term studies. Very few such studies are now being started which increases substantially the value of ongoing ones making it imperative that those on the Isle of May continue. NCCS should continue to play its part, and its monetary and logistic support are gratefully acknowledged.

3.5 The financial input to the Isle of May studies comes from NCCS, JNCC, BP Exploration (for puffins) and NERC. Hopefully this funding will continue and the Isle of May seabirds get the attention they deserve.

3.6 In 1991 several foreign fishing boats were reported fishing for sandeels at the Cockenzie and Marr Banks, northeast of the Isle of May. Some Isle of May auks and kittiwakes will almost certainly feed in this area. Although there is no direct evidence that an industrial fishery for sandeels affect food availability for seabirds, any future development of this fishery must be of interest to those concerned with Isle of May seabirds.

4 PUBLICATIONS ON ISLE OF MAY SEABIRDS

The following have either been published since the last contract report or are in press.

- Harris, M.P. & Wanless, S. 1991. Population studies and conservation of Puffins Fratercula arctica. In 'Bird Population Studies' (eds. Perrins, Lebreton & Hiron). Oxford Univ. Press. pp. 230-248.
- Harris, M.P. 1991. Population changes in British Common Murres and Common Puffins 1969-1988 in Studies of high-latitude seabirds. Occ. paper Canad. Wildl. Serv., Ottawa, pp. 52-61.
- Wanless, S., Burger, A.E. & Harris, M.P. 1991. Diving depths of Shags Phalacrocorax aristotelis breeding on the Isle of May. Ibis 133: 37-42.
- Wanless, S. Harris, M.P. & Morris, J.A. 1991. Foraging range and feeding locations used by Shags Phalacrocorax aristotelis during chick-rearing. Ibis 133: 30-36.
- Harris, M.P., Towll, H., Russell, A.F. and Wanless, S. 1990. Maximum depths attained by four species of seabirds breeding on the Isle of May, Scotland. Scottish Birds 16: 29-28.
- Wanless, S. & Harris, M.P. in press. Activity budgets, diet and breeding success of Kittiwakes Rissa tridactyla on the Isle of May. Bird Study.
- Harris, M.P. & Wanless, S. in press. The importance of the lesser sandeel Ammodytes marinus in the diet of the Shag Phalacrocorax aristotelis. Ornis Scandinavica.
- Harris, M.P. & Bailey, R.S. in press. Mortality rates of puffin and guillemot and fish numbers in the North Sea. Biological Conservation.
- Hislop, J.R.G., Harris, M.P. & Smith, J.G.M. 1991. Variation in the calorific value and total energy content of the lesser sandeel (Ammodytes marinus) and other fish preyed on by seabirds. J. Zool., Lond. 224: 501-517.
- Harris, M.P., Webb, A. & Tasker, M.L. 1991. Growth of young guillemots Uria aagle after leaving the colony. Seabird.

Table 1. Counts and contents of herring and lesser black-backed gull nests, 28-30 May 1991

	Empty nest	Eggs			Unknown contents	Total	Counting efficiency (%)	Total nests present
		1	2	3				
Mars Rock	1	3	2	4	2	12	87	14
North Ness/rocks	8	11	37	113	0	169	87	194
North Horn-Iron Bridge	7	3	13	45	3	71	87	82
Iron Bridge-Altarstanes	0	0	0	7	0	7	87	8
East Rona	24	30	61	211	1	327	91	359
Tarbet	7	3	10	72	3	95	81	117
Low Light-Tarbet	7	4	9	43	0	63	82	77
Low Light rocks	2	4	4	17	17	44	82	54
Cleaver	0	0	0	0	6	6	100	6
Lady's Bed Stacks	0	0	0	0	4	4	100	4
South Ness Rocks	0	0	4	11	0	15	86	17
Ardcarran rocks	0	0	0	0	10	10	86	12
Kirkhaven rocks	0	0	0	1	0	1	100	1
Pillow	0	0	0	0	2	2	100	2
Burrian	3	9	25	78	5	120	95	126
Altarstanes-Horse Hole	0	0	1	5	5	11	87	13
Colm's Hole	0	0	0	0	21	21	100	21
Kettle to Colm's Hole	31	11	38	143	0	223	96	248
South Horn cliffs	0	2	0	0	1	3	100	3
South Horn	0	3	2	5	1	11	88	12
Lady's Bed	14	8	14	63	1	100	88	125
Ardcarran-Kirkhaven	5	7	23	62	24	121	88	137
Three Tarn Nick-Horse Hole	42	14	45	130	1	232	76	305
Horse Hole	0	0	1	5	5	11	88	12
Clett	0	0	1	0	0	1	100	1
Middens	0	0	1	10	0	11	100	11
South Lochside	0	0	0	0	3	3	100	3
Cornerstone-Pilgrims	0	0	0	0	2	2	100	2
South Plateau Cliffs	0	0	0	0	19	19	100	19
South Plateau	2	1	1	8	0	12	56	20
North Lochside	0	0	0	0	3	3	100	3
Three Tarn Nick-Lochside	0	0	0	0	14	14	-	14
Maidens Inner	4	10	26	59	6	105	100	105
Maidens Outer	7	6	16	45	11	85	100	85
Maidens Sea Rocks	3	2	3	15	0	23	100	23
Totals	167	131	337	1152	170	1957		2235

Counts were made by D. Hale, A. Duncan, J. Bancroft, P. Kinnear, C. Wernham, J. Graves and the authors.

Table 2. Counting efficiency of gull nests during the whole island nest count, 28-30 May 1991.

	No. marked	No. unmarked	% marked
North Ness-North Horn	33	5	87
Tarbet-Low Light	23	5	82
Tarbet	34	8	81
Rona	85	8	91
Burrian	35	2	95
Kettle	43	5	90
Ardcarran-Ladies Bed	44	6	88
North Plateau	42	13	76
South Plateau	5	4	56
Total	344	56	86

Checks were made by D. Halley

Table 3. Counts of individual herring and lesser-black backed gulls on 27 May 1991.

	Number counted			%	
	HG	LB	Total	HG	LBBG
North Ness	84	50	134	63	37
North Ness-Horn	95	69	164	58	42
North Horn-Bridge (West Rona)	19	10	29	66	34
Bridge-Altarstanes	22	0	22	100	0
Rona east	283	195	478	59	41
Tarbet	74	5	79	93	7
Tarbet-Low Light	15	5	20	75	25
Low Light	33	3	36	92	8
Altarstanes-Horse Hole	18	2	20	90	10
Burrian	67	29	96	70	30
Colm's Hole	28	0	28	100	0
Kettle (Colm's-K'haven)	99	108	207	48	52
South Horn	5	11	16	31	69
Lady's Bed	40	22	62	65	35
Ardcarran	34	18	52	65	35
Ardcarran/Kirkhaven	22	25	47	47	53
North Plateau (Nth)	91	205	296	31	69
South Plateau	6	11	17	35	65
North Plateau (Sth)	2	3	5	40	60
Other areas					
Mill Door North	HG	14	Greenface	HG	13
Loch Side-North	HG	10	South	HG	1

Table 4. Calculated gull nest totals in 1991.

	Nest estimate	% Herring Gulls	Herring Gull nests	Lesser Black-backed Gull nests
Mars Rock	14	100	14	0
North Ness/rocks	194	63	122	72
North Horn-Iron Bridge	82	66	54	28
Iron Bridge-Altarstanes	8	100	8	0
East Rona	359	59	219	140
Tarbet	117	93	109	8
Low Light-Tarbet	77	75	58	19
Low Light rocks	54	92	50	4
Cleaver	6	100	6	0
Lady's Bed Stacks	4	100	4	0
South Ness Rocks	17	100	17	0
Ardcarran rocks	12	92	11	1
Kirkhaven rocks	1	100	1	0
Pillow	2	100	2	0
Burrian	126	70	88	38
Altarstanes-Horse Hole	13	90	12	1
Colm's Hole	21	100	21	0
Kettle to Colm's Hole	248	48	119	129
South Horn cliffs	3	100	3	0
South Horn	12	31	4	8
Lady's Bed	125	65	81	44
Ardcarran-Kirkhaven	137	47	64	73
Three Tarn Nick-Horse Hole	305	31	95	210
Horse Hole	12	100	12	0
Clett	1	100	1	0
Middens	11	100	11	0
South Lochside	3	100	3	0
Cornerstone-Pilgrims	2	100	2	0
South Plateau cliffs	19	100	19	0
South Plateau	20	35	7	13
North Lochside	3	100	3	0
Three Tarn Nick-Lochside	14	100	14	0
Maidens Inner	105	100	105	0
Maidens Outer	85	100	85	0
Maidens Sea Rocks	23	100	23	0
Total	2235		1447	788

Table 5. Changes in estimated numbers of gull nests in 1990-91.
Small areas are excluded.

	1990 estimate	1991 estimate	% change
Kettle-Colm's Hole	198	248	+25
Colm's Hole	50	21	-58
Burrian	145	126	-13
Low Light Rocks	61	54	+11
Tarbet-Low Light	88	77	-12
Tarbet	150	117	-22
Rona-east	365	359	-2
North Ness/Mars Rocks	219	208	-5
North Plateau	199	305	+53
South Plateau/cliffs	19	39	+105
Lady's Bed/South Ness	116	146	+26
Maidens (all)	261	213	-18
Lochside-Three Tarn Cliffs	16	14	-13
Ardcarran/Kirkhaven	139	150	+8
Total (incl. other areas)	2169	2235	+3%

Table 6. Details of breeding herring gulls colour-ringed on the Isle of May in 1989, 1990 and 1991.

Colour rings: All below joint, M = Green engraved with a white M

BTO ring above joint on left leg

Sex: by bill and head length

Locality code (under year)

M - Maidens	TAR = Tarbet
A - Ardcarron	CH = Colms Hole
K - Kettle	R/Ron = Rona
LB - Ladies Bed	NH = North Horn
NP - North Plateau	DED = Found dead later in the season

Second column is for October of that year

BIRD RING No.	L.LEG	R.LEG	SEX	1989	1990	1991
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1	GG58238	MMM-RED	RED-WHI	HG	F	M	-	M	-	-	-
2	GG58239	MMM-BLK	RED-WHI	HG	M	M	-	-	-	-	-
3	GG58240	MMM-GRN	RED-WHI	HG	F	M	-	M	-	M	-
4	GG58241	MMM-BLU	RED-WHI	HG	M	M	-	M	-	TAR	-
5	GG58242	MMM-YEL	RED-WHI	HG	M	M	-	M	-	M	-
6	GG58243	MMM-WHI	RED-WHI	HG	M	M	-	Y	-	M	-
7	GG58244	MMM-RED	RED-GRN	HG	F	K	-	K	-	-	-
8	GG58245	MMM-BLK	RED-GRN	HG	F	A	-	A	-	-	-
9	GG58246	MMM-GRN	RED-GRN	HG	F	A	-	A	-	-	-
10	GG58247	MMM-BLU	RED-GRN	HG	F	A	-	A	-	-	-
11	GG58248	MMM-YEL	RED-GRN	HG	F	M	-	A	-	-	-
12	GG58249	MMM-WHI	RED-GRN	HG	F	A	-	A	-	A	-
13	GG58250	MMM-BLK	RED-BLK	HG	M	M	-	-	-	M	-
14	GG58257	MMM-GRN	RED-BLK	HG	M	M	-	A	-	A	-
15	GG58258	MMM-YEL	RED-BLK	HG	F	M	-	A	-	-	-
16	GG58259	MMM-RED	RED-BLK	HG	M	CH	-	CH	-	CH	-
17	GG58260	MMM-YEL	RED-BLK	HG	M	CH	-	-	-	-	-
18	GG58261	MMM-WHI	RED-BLK	HG	F	CH	-	CH	-	CH	-
19	GG58262	MMM-RED	RED-BLU	HG	M	A	-	A	-	-	-
20	GG58263	MMM-BLK	RED-BLU	HG	M	A	-	A	-	A	-
21	GG58264	MMM-GRN	RED-BLU	HG	M	A	-	A	-	A	-
22	GG58265	MMM-BLU	RED-BLU	HG	M	A	-	-	-	-	-
23	GG58266	MMM-YEL	RED-BLU	HG	M	A	-	A	-	A	-
24	GG58267	MMM-WHI	RED-BLU	HG	F	TAR	-	TAR	-	TAR	-
25	GG58268	MMM-RED	RED-YEL	HG	F	TAR	-	TAR	-	-	-
26	GG58269	MMM-BLK	RED-YEL	HG	F	TAR	-	TAR	-	-	-
27	GG58270	MMM-GRN	RED-YEL	HG	M	M	-	-	-	-	-
28	GG58271	MMM-BLU	RED-YEL	HG	F	M	-	-	-	-	-
29	GG58272	MMM-YEL	RED-YEL	HG	F	K	-	K	-	K	-
30	GG58273	MMM-WHI	RED-YEL	HG	F	TAR	-	TAR	-	TAR	-
31	GG58274	MMM-RED	BLK-RED	HG	F	TAR	-	TAR	D	-	-
32	GG58275	MMM-BLK	BLK-RED	HG	F	TAR	-	TAR	-	TAR	-
33	GG58276	MMM-GRN	BLK-RED	HG	F	TAR	-	TAR	-	-	-
34	GG58277	MMM-BLU	BLK-RED	HG	M	K	-	K	-	-	-
35	GG58278	MMM-YEL	BLK-RED	HG	M	K	-	-	-	-	-
36	GG58279	MMM-WHI	BLK-RED	HG	F	K	-	K	-	-	-
37	GG58280	MMM-RED	GRN-RED	HG	F	K	-	K	-	-	-
38	GG58281	MMM-BLK	GRN-RED	HG	F	TAR	-	M	-	TAR	-
39	GG58282	MMM-GRN	GRN-RED	HG	M	K	-	-	-	K	-
40	GG58283	MMM-BLU	GRN-RED	HG	M	A	-	-	-	-	-
41	GG58284	MMM-YEL	GRN-RED	HG	M	A	-	A	-	-	-
42	GG58285	MMM-WHI	GRN-RED	HG	M	A	-	A	-	A	-
43	GG58286	MMM-RED	BLU-RED	HG	F	A	-	NH	-	-	-
44	GG58287	MMM-BLK	BLU-RED	HG	M	M	-	M	-	M	-
45	GG58288	MMM-GRN	BLU-RED	HG	M	M	-	M	-	-	-
46	GG58289	MMM-BLU	BLU-RED	HG	M	M	M	M	-	M	-
47	GG58290	MMM-YEL	BLU-RED	HG	M	M	-	M	-	M	-
48	GG58291	MMM-WHI	BLU-RED	HG	F	M	-	A	-	A	-
49	GG58292	MMM-RED	YEL-RED	HG	M	A	-	A	-	-	-
50	GG58293	MMM-BLK	YEL-RED	HG	F	A	-	A	-	A	-
51	GG58294	MMM-GRN	YEL-RED	HG	F	A	-	A	-	A	-
52	GG58295	MMM-BLU	YEL-RED	HG	M	A	M	A	-	A	-
53	GG58296	MMM-YEL	YEL-RED	HG	M	A	-	-	-	DED	-
54	GG58297	MMM-WHI	YEL-RED	HG	F	A	-	SN	-	NH	-
55	GG58298	MMM-RED	WHI-RED	HG	M	A	-	A	-	A	-
56	GG58299	MMM-BLK	WHI-RED	HG	M	A	-	A	-	A	-
57	GG58300	MMM-GRN	WHI-RED	HG	M	NH	-	NH	-	T	-
58	GG58301	MMM-BLU	WHI-RED	HG	F	TAR	-	TAR	-	TAR	-
59	GG58302	MMM-YEL	WHI-RED	HG	M	NH	-	-	-	NH	-
60	GG58303	MMM-WHI	WHI-RED	HG	F	NH	-	NH	-	NH	D
61	GG58304	MMM-RED	BLK-GRN	HG	F	A	-	-	-	-	-
62	GG58305	MMM-BLK	BLK-GRN	HG	F	A	-	A	-	A	-
63	GG58306	MMM-GRN	BLK-GRN	HG	M	M	-	M	-	-	-
64	GG58307	MMM-BLU	BLK-GRN	HG	F	M	-	LOW	-	-	-
65	GG58308	MMM-YEL	BLK-GRN	HG	M	M	-	M	-	-	-
66	GG58309	MMM-WHI	BLK-GRN	HG	F	M	-	-	-	LOW	-

68	GG58311	MMM-BLK	BLK-BLU	HG	F	K	-	K	-	K	-
69	GG58312	MMM-GRN	BLK-BLU	HG	F	M	-	C	-	CH	-
70	GG58313	MMM-BLU	BLK-BLU	HG	M	M	-	M	M	M	-
71	GG58314	MMM-YEL	BLK-BLU	HG	M	M	-	M	-	M	-
72	GG58315	MMM-WHI	BLK-BLU	HG	M	M	L	M	-	M	-
73	GG58316	MMM-RED	BLK-YEL	HG	F	M	-	M	-	M	-
74	GG58317	MMM-BLK	BLK-YEL	HG	F	M	-	M	-	-	-
75	GG58318	MMM-GRN	BLK-YEL	HG	F	A	-	A	-	M	-
76	GG58319	MMM-BLU	BLK-YEL	HG	M	A	-	-	-	-	-
77	GG58320	MMM-YEL	BLK-YEL	HG	F	TAR	-	TAR	-	TAR	D
78	GG58321	MMM-WHI	BLK-YEL	HG	M	TAR	-	-	-	-	-
79	GG58322	MMM-RED	BLK-WHI	HG	F	TAR	-	TAR	-	TAR	-
80	GG58323	MMM-BLK	BLK-WHI	HG	M	RON	-	RON	-	RON	-
81	GG58324	MMM-GRN	BLK-WHI	HG	F	A	-	-	-	TAR	-
82	GG58325	MMM-BLU	BLK-WHI	HG	F	A	-	-	-	-	-
83	GG58326	MMM-YEL	BLK-WHI	HG	M	A	-	-	-	-	-
84	GG58327	MMM-WHI	BLK-WHI	HG	M	A	-	A	-	A	-
85	GG58328	MMM-RED	BLK-BLK	HG	F	M	-	A	-	A	-
86	GG58329	MMM-BLK	BLK-BLK	HG	M	M	-	M	-	M	-
87	GG58330	MMM-GRN	BLK-BLK	HG	F	M	-	M	D	-	-
88	GG58331	MMM-BLU	BLK-BLK	HG	M	M	-	-	-	-	-
89	GG58332	MMM-YEL	BLK-BLK	HG	F	M	-	M	-	M	-
90	GG58333	MMM-WHI	BLK-BLK	HG	M	A	-	A	-	A	-
91	GG58334	MMM-RED	GRN-BLK	HG	M	RON	-	-	-	RON	-
92	GG58335	MMM-BLK	GRN-BLK	HG	M	CH	-	A	-	-	-
93	GG58336	MMM-GRN	GRN-BLK	HG	F	CH	-	CH	-	CH	-
94	GG58337	MMM-BLU	GRN-BLK	HG	M	CH	-	CH	-	-	-
95	GG58338	MMM-YEL	GRN-BLK	HG	F	M	-	M	-	M	-
96	GG58339	MMM-WHI	GRN-BLK	HG	F	M	M	M	-	M	-
97	GG58340	MMM-RED	BLU-BLK	HG	M	M	-	-	-	-	-
98	GG58341	MMM-BLK	BLU-BLK	HG	F	M	-	M	-	M	-
99	GG58342	MMM-GRN	BLU-BLK	HG	F	M	-	M	-	M	-
100	GG58343	MMM-BLU	BLU-BLK	HG	F	M	-	K	-	-	-
101	GG58344	MMM-YEL	BLU-BLK	HG	M	M	-	M	-	M	-
102	GG58345	MMM-WHI	BLU-BLK	HG	M	M	M	M	M	M	-
103	GG58346	MMM-RED	WHI-BLK	HG	M	M	-	M	-	M	-
104	GG58347	MMM-BLK	WHI-BLK	HG	M	M	-	M	-	M	-
105	GG58348	MMM-GRN	WHI-BLK	HG	M	LB	-	A	-	-	-
106	GG58346	MMM-BLU	WHI-BLK	HG	F	LB	-	LB	-	-	-
107	GG58350	MMM-YEL	WHI-BLK	HG	F	LB	-	LB	-	LB	-
108	GG58401	MMM-WHI	WHI-BLK	HG	F	TAR	-	TAR	-	NH	-
109	GG58402	MMM-RED	GRN-BLU	HG	F	CH	-	CH	-	CH	-
110	GG58403	MMM-BLK	YEL-BLK	HG	F	TAR	-	TAR	-	-	-
111	0000000	MMM-RED	YEL-BLK	HG	M	TAR	-	TAR	-	TAR	-
112	GG58404	MMM-GRN	YEL-BLK	HG	M	NH	-	NH	-	NH	-
113	GG58405	MMM-BLU	YEL-BLK	HG	F	M	-	M	-	-	-
114	GG58406	MMM-YEL	YEL-BLK	HG	M	M	M	M	-	M	-
115	GG58407	BLK-BLU	ZZZ-CYS	HG	M	M	-	M	-	M	-
116	GG58408	MMM-WHI	YEL-BLK	HG	M	M	-	M	-	M	-
117	GG01525	MMM-RED	GRN-GRN	HG	M	M	M	A	-	A	-
118	GG58409	MMM-BLK	GRN-GRN	HG	F	M	-	K	-	M	-
119	GG58410	MMM-GRN	GRN-GRN	HG	M	M	-	M	-	M	-
120	GG58411	MMM-BLU	GRN-GRN	HG	M	M	-	M	-	M	D
121	GG58412	MMM-YEL	GRN-GRN	HG	F	TAR	-	TAR	-	TAR	-
122	GG58413	MMM-WHI	GRN-GRN	HG	F	TAR	-	ARD	-	ARD	-
123	GG58414	MMM-BLK	GRN-BLU	HG	M	CH	-	CH	-	CH	-
124	GG58415	MMM-GRN	GRN-BLU	HG	M	CH	-	-	-	-	-
125	GG58416	MMM-BLU	GRN-BLU	HG	F	CH	-	-	-	CH	-
126	GG58417	MMM-YEL	GRN-BLU	HG	M	LB	-	LB	-	-	-
127	GG58418	MMM-WHI	GRN-BLU	HG	F	LB	-	A	-	LB	-
128	GG58419	MMM-RED	GRN-YEL	HG	F	NH	-	NH	-	NH	-
129	GG58420	MMM-BLK	GRN-YEL	HG	M	LB	-	A	-	LB	-
130	GG58421	MMM-GRN	GRN-YEL	HG	F	LB	-	A	-	A	-
131	GG58422	MMM-BLU	GRN-YEL	HG	M	NH	-	NH	-	NH	-
132	GG58423	MMM-YEL	GRN-YEL	HG	M	LB	-	A	-	LB	-
133	GG58423	MMM-WHI	GRN-YEL	HG	M	LB	-	LB	-	LB	-
134	GG58425	MMM-RED	GRN-WHT	HG	F	LB	-	A	-	-	-

135	GG58426	MMM-BLK	GRN-WHI	HG	M	LB	-	A	-	NH	D
136	GG58427	MMM-GRN	GRN-WHI	HG	F	K	-	K	-	K	-
137	GG58428	MMM-BLU	GRN-WHI	HG	F	NH	-	NH	-	NH	-
138	GG58429	MMM-YEL	GRN-WHI	HG	M	CH	-	CH	-	CH	-
139	GG58430	MMM-WHI	GRN-WHI	HG	F	CH	-	CH	-	CH	-
140	GG58431	MMM-RED	BLU-GRN	HG	M	NP	-	-	-	-	-
141	GG58432	MMM-BLK	BLU-GRN	HG	M	R	-	R	-	R	-
142	GG58433	MMM-GRN	BLU-GRN	HG	F	R	-	-	-	R	-
143	GG58434	MMM-BLU	BLU-GRN	HG	M	K	-	K	-	K	-
144	GG58435	MMM-YEL	BLU-GRN	HG	F	R	-	-	-	NH	-
145	GG58436	MMM-WHI	BLU-GRN	HG	F	R	-	R	-	R	-
146	GG58437	MMM-RED	YEL-GRN	HG	F	R	-	-	-	NH	-
147	GG58438	MMM-BLK	YEL-GRN	HG	M	NH	-	NH	-	NH	-
148	GG58439	MMM-GRN	YEL-GRN	HG	M	NH	-	NH	-	MH	-
149	GG58440	MMM-BLU	YEL-GRN	HG	M	NH	-	NH	-	NH	-
150	GG58441	MMM-YEL	YEL-GRN	HG	M	NH	-	-	-	-	-
151	GG58442	MMM-WHI	YEL-GRN	HG	F	NH	-	NH	-	NH	-
152	GG58443	MMM-RED	WHI-GRN	HG	F	NH	-	-	-	-	-
153	GG58444	MMM-BLK	WHI-GRN	HG	F	NH	-	NH	D	-	-
154	GG58445	MMM-GRN	WHI-GRN	HG	F	NH	-	NH	-	NH	-
155	GG58446	MMM-BLU	WHI-GRN	HG	F	NH	-	NH	-	-	-
156	GG58447	MMM-YEL	WHI-GRN	HG	M	NH	-	NH	-	NH	-
157	GG58448	MMM-WHI	WHI-GRN	HG	M	NH	-	NH	-	NH	-
158	GG58449	MMM-RED	YEL-WHI	HG	F	NH	-	-	-	NH	-
159	GG65506	MMM-WHI	YEL-WHI	HG	F	-	-	M	-	M	-
160	GG65507	MMM-GRN	YEL-WHI	HG	M	-	-	M	-	M	-
161	GG65508	MMM-BLK	YEL-WHI	HG	M	-	-	M	-	M	-
162	GG65509	MMM-YEL	YEL-WHI	HG	M	-	-	M	-	M	-
163	GG65510	MMM-RED	WHI-BLU	HG	M	-	-	M	-	M	-
164	GG65511	MMM-BLU	YEL-WHI	HG	M	-	-	M	-	-	-
165	GG65512	MMM-WHI	WHI-BLU	HG	M	-	-	M	-	M	-
166	GG65513	MMM-GRN	WHI-BLU	HG	F	-	-	M	-	M	-
167	GG65514	MMM-BLK	WHI-BLU	HG	F	-	-	M	-	-	-
168	GG65515	MMM-BLU	WHI-BLU	HG	F	-	-	M	-	M	-
169	GG65516	MMM-RED	WHI-YEL	HG	M	-	-	M	-	M	-
170	GG65516	MMM-GRN	WHI-YEL	HG	F	-	-	M	-	M	-
171	GG65518	MMM-BLK	WHI-YEL	HG	M	-	-	M	-	M	-
172	GG10995	MMM-WHI	WHI-YEL	HG	M	-	-	M	-	M	-
173	GG65519	MMM-BLU	WHI-YEL	HG	F	-	-	M	-	M	-
174	GG65520	MMM-YEL	WHI-YEL	HG	M	-	-	M	-	-	-
175	GG65521	MMM-RED	BLU-WHI	HG	F	-	-	M	-	M	-
176	GG65522	MMM-WHI	BLU-WHI	HG	?	-	-	M	-	-	-
177	GG65523	MMM-GRN	BLU-WHI	HG	M	-	-	M	-	M	-
178	G65519	MMM-BLU	BLU-WHI	HG	M	-	-	M	-	-	-
179	GG65526	MMM-BLK	BLU-WHI	HG	F	-	-	M	-	M	-
180	GG65527	MMM-RED	YEL-YEL	HG	M	-	-	M	-	M	-
181	GG65531	MMM-YEL	BLU-WHI	HG	F	-	-	ARD	-	M	-
182	GG65534	MMM-RED	BLU-BLU	HG	M	-	-	ARD	-	ARD	-
183	GG65539	MMM-WHI	BLU-BLU	HG	M	-	-	NP	-	NP	-
184	GG07915	MMM-BLK	BLU-BLU	HG	M	-	-	NP	-	NP	-
185	GG65543	MMM-GRN	BLU-BLU	HG	F	-	-	NP	-	NP	-
186	GG65546	MMM-BLU	BLU-BLU	HG	F	-	-	NP	-	NP	-
187	GG65563	MMM-YEL	BLU-BLU	HG	M	-	-	NP	-	NP	-
188	GG65567	MMM-RED	BLU-YEL	HG	F	-	-	NP	-	-	-
189	GG65576	MMM-WHI	BLU-YEL	HG	M	-	-	R	-	R	-
190	GG65577	MMM-GRN	BLU-YEL	HG	M	-	-	R	-	R	-
191	GG65578	MMM-BLK	BLU-YEL	HG	M	-	-	R	-	-	-
192	GG65581	MMM-BLU	BLU-YEL	HG	M	-	-	R	-	R	-
193	GG65583	MMM-YEL	BLU-YEL	HG	F	-	-	R	-	R	-
194	GG65591	MMM-RED	YEL-BLU	HG	F	-	-	R	-	R	-
195	GG65593	MMM-WHI	YEL-BLU	HG	F	-	-	R	-	R	-
196	GG67201	MMM-GRN	YEL-BLU	HG	F	-	-	-	-	M	-
197	GG67202	MMM-BLK	YEL-BLU	HG	M	-	-	-	-	M	-
198	GG67203	MMM-BLU	YEL-BLU	HG	M	-	-	-	-	M	-
199	GG67204	MMM-YEL	YEL-BLU	HG	F	-	-	-	-	M	-
200	GG67205	MMM-WHI	YEL-YEL	HG	F	-	-	-	-	M	-

202	GG67207	MMM-YEL	YEL-YEL	HG	F	-	-	-	-	M	-
203	GG67218	MMM-RED	RED-RED	HG	M	-	-	-	-	R	-
204	GG67222	MMM-WHI	RED-RED	HG	F	-	-	-	-	NH	-
205	GG67223	MMM-GRN	RED-RED	HG	F	-	-	-	-	R	-
206	GG67225	MMM-BLK	RED-RED	HG	F	-	-	-	-	NH	-
207	GG67227	MMM-BLU	RED-RED	HG	F	-	-	-	-	TAR	-
208	GG67230	MMM-YEL	RED-RED	HG	F	-	-	-	-	TAR	-
209	GG67239	MMM-RED	WHI-WHI	HG	F	-	-	-	-	NP	-
210	GG67240	MMM-WHI	WHI-WHI	HG	M	-	-	-	-	NP	-
211	GG67241	MMM-GRN	WHI-WHI	HG	F	-	-	-	-	NP	-
212	GG67245	MMM-BLK	WHI-WHI	HG	M	-	-	-	-	NP	-
213	GG67246	MMM-BLU	WHI-WHI	HG	M	-	-	-	-	TAR	-
214	GG67247	MMM-YEL	WHI-WHI	HG	F	-	-	-	-	TAR	-
215	GG67248	MMM-RED	RED-ORN	HG	F	-	-	-	-	TAR	-

Table 7. Details of breeding lesser black-backed gulls colour-ringed and resighted on the Isle of May in 1989, 1990 and 1991.

Colour rings: All below joint, M = Green engraved with a white M

BTO ring above joint on left leg

Sex: by bill and head length

Locality code (under year)

Second column is for October of that year

M - Maidens	TAR = Tarbet
A - Ardcarron	CH = Colms Hole
K - Kettle	R/Ron = Rona
LB - Ladies Bed	NH = North Horn
NP - North Plateau	DED = Found dead later in the season

BIRD RING No.	L.LEG	R.LEG	SEX	1989	1990	1991
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1	GG58351	MMM-RED	BLU-RED	LBBG	F	NH	-	NH	-	NH	-
2	GG58352	MMM-BLK	BLU-RED	LBBG	M	R	-	R	-	NH	-
3	GG58353	MMM-GRN	BLU-RED	LBBG	M	LB	-	A	-	LB	-
4	GG58354	MMM-BLU	BLU-RED	LBBG	M	LB	-	A	-	LB	-
5	GG58355	MMM-WHI	BLU-RED	LBBG	F	R	-	-	-	-	-
6	GG58356	MMM-RED	BLU-GRN	LBBG	M	NH	-	NH	-	NH	-
7	GG58357	MMM-RED	BLU-BLK	LBBG	M	LB	-	A	-	A	-
8	GG58358	MMM-BLK	BLU-BLK	LBBG	M	NH	-	RON	-	NH	-
9	GG58359	MMM-GRN	BLU-BLK	LBBG	F	NH	-	NH	-	NH	-
10	GG58360	MMM-BLK	BLU-GRN	LBBG	F	LB	-	RON	-	LB	-
11	GG58361	MMM-BLU	BLU-BLK	LBBG	F	NH	-	NH	-	-	-
12	GG58362	MMM-WHI	BLU-BLK	LBBG	F	K	-	K	-	K	-
13	GG58363	MMM-GRN	BLU-GRN	LBBG	F	LB	-	A	-	NH	-
14	GG58364	MMM-BLU	BLU-GRN	LBBG	F	LB	-	LB	-	-	-
15	GG58365	MMM-WHI	BLU-GRN	LBBG	F	NP	-	NP	-	-	-
16	GG58666	MMM-RED	BLU-BLU	LBBG	M	NP	-	NP	-	NP	-
17	GG58367	MMM-BLK	BLU-BLU	LBBG	M	NP	-	NP	-	NP	-
18	GG58368	MMM-GRN	BLU-BLU	LBBG	M	K	-	NH	-	K	-
19	GG58369	MMM-BLU	BLU-BLU	LBBG	F	NP	-	A	-	-	-
20	GG58370	MMM-WHI	BLU-BLU	LBBG	M	NK	-	NP	-	NP	-
21	GG58371	MMM-RED	BLU-WHI	LBBG	F	NP	-	NP	-	NP	-
22	GG58372	MMM-BLK	BLU-WHI	LBBG	M	NP	-	-	-	-	-
23	GG58373	MMM-GRN	BLU-WHI	LBBG	F	NP	-	NP	-	NP	-
24	GG58374	MMM-BLU	BLU-WHI	LBBG	M	NP	-	NP	-	NP	-
25	GG58375	MMM-WHI	BLU-WHI	LBBG	M	LB	-	A	-	A	-
26	GG58376	MMM-RED	RED-BLU	LBBG	F	LB	-	LB	-	LB	-
27	GG58377	MMM-BLK	RED-BLU	LBBG	M	LB	-	LB	-	LB	-
28	GG58378	MMM-GRN	RED-BLU	LBBG	M	LB	-	A	-	LB	-
29	GG58379	MMM-BLU	RED-BLU	LBBG	F	NP	-	-	-	NP	-
30	GG58380	MMM-WHI	RED-BLU	LBBG	F	NP	D	-	-	-	-
31	GG58381	MMM-RED	BLK-BLU	LBBG	M	NP	-	-	-	-	-
32	GG58382	MMM-BLK	BLK-BLU	LBBG	F	K	-	-	-	K	-
33	GG58383	MMM-GRN	BLK-BLU	LBBG	F	K	-	K	-	K	-
34	GG58384	MMM-BLU	BLK-BLU	LBBG	M	K	-	K	-	K	-
35	GG58385	MMM-WHI	BLK-BLU	LBBG	M	K	-	K	-	K	-
36	GG58386	MMM-RED	GRN-BLU	LBBG	M	LB	-	-	-	LB	-
37	GG58387	MMM-BLK	GRN-BLU	LBBG	M	NP	-	NP	-	K	-
38	GG58388	MMM-GRN	GRN-BLU	LBBG	F	NP	-	A	-	LB	-
39	GG58389	MMM-BLU	GRN-BLU	LBBG	F	K	-	A	-	A	-
40	GG58390	MMM-RED	WHI-BLU	LBBG	F	LB	-	-	-	-	-
41	GG58391	MMM-WHI	GRN-BLU	LBBG	F	K	-	K	-	K	-
42	GG58392	MMM-BLK	WHI-BLU	LBBG	M	K	-	K	-	-	-
43	GG58393	MMM-GRN	WHI-BLU	LBBG	F	NP	-	-	-	NP	-
44	GG58394	MMM-BLU	WHI-BLU	LBBG	F	NP	-	NP	-	NP	-
45	GG58395	MMM-WHI	WHI-BLU	LBBG	M	NP	-	-	-	-	-
46	GG58396	MMM-RED	GRN-GRN	LBBG	F	NP	-	NP	-	-	-
47	GG58397	MMM-BLK	GRN-GRN	LBBG	F	NP	-	NP	-	NP	-
48	GG58398	MMM-GRN	GRN-GRN	LBBG	F	LB	-	LB	-	LB	-
49	GG58399	MMM-BLU	GRN-GRN	LBBG	F	LB	-	LB	-	LB	-
50	GG58400	MMM-WHI	GRN-GRN	LBBG	M	K	-	K	-	K	-
51	GG58451	MMM-RED	GRN-RED	LBBG	M	R	-	R	-	R	-
52	GG58452	MMM-BLK	GRN-RED	LBBG	F	R	-	R	-	-	-
53	GG58453	MMM-GRN	GRN-RED	LBBG	M	R	-	TAR	-	-	-
54	GG58454	MMM-BLU	GRN-RED	LBBG	F	NP	-	NP	-	NP	-
55	GG58455	MMM-WHI	GRN-RED	LBBG	F	NP	-	NP	-	NP	-
56	GG58456	MMM-RED	GRN-BLK	LBBG	M	NP	-	-	-	-	-
57	GG58457	MMM-BLK	GRN-BLK	LBBG	M	K	-	K	-	K	-
58	GG58458	MMM-GRN	GRN-BLK	LBBG	F	K	-	K	-	K	-
59	GG58459	MMM-BLU	GRN-BLK	LBBG	F	K	-	-	-	K	-
60	GG58460	MMM-WHI	GRN-BLK	LBBG	F	K	-	K	-	K	-
61	GG58461	MMM-RED	GRN-WHI	LBBG	F	R	-	R	-	NH	-
62	GG58462	MMM-BLK	GRN-WHI	LBBG	F	R	-	R	-	R	-
63	GG58463	MMM-GRN	GRN-WHI	LBBG	F	R	-	R	-	R	-
64	GG58464	MMM-BLU	GRN-WHI	LBBG	M	NP	-	NP	-	NP	-
65	GG58465	MMM-WHI	GRN-WHI	LBBG	F	NP	-	NP	-	NP	-
66	GG58466	MMM-RED	RED-GRN	LBBG	M	NP	-	NP	-	NP	-
67	GG58467	MMM-BLK	RED-GRN	LBBG	F	D	-	D	-	D	-

68	GG58468	MMM-GRN	RED-GRN	LBBG	F	R	-	R	-	R	-
69	GG58469	MMM-BLU	RED-GRN	LBBG	F	R	-	-	-	NH	-
70	GG58470	MMM-WHI	RED-GRN	LBBG	F	K	-	-	-	K	-
71	GG58471	MMM-RED	BLK-GRN	LBBG	F	K	-	K	-	K	-
72	GG58472	MMM-BLK	BLK-GRN	LBBG	M	K	-	K	-	K	-
73	GG58473	MMM-GRN	BLK-GRN	LBBG	M	NP	-	RON	-	NP	-
74	GG58474	MMM-BLU	BLK-GRN	LBBG	M	R	-	R	-	-	-
75	GG58475	MMM-WHI	BLK-GRN	LBBG	M	NP	-	NP	-	NP	-
76	GG58476	MMM-RED	WHI-GRN	LBBG	M	R	-	NP	-	NP	-
77	GG58477	MMM-BLK	WHI-GRN	LBBG	M	R	-	R	-	-	-
78	GG58470	MMM-GRN	WHI-GRN	LBBG	M	NP	-	NP	-	NP	-
79	GG58479	MMM-BLU	WHI-GRN	LBBG	M	K	-	AWY	-	K	-
80	GG58480	MMM-WHI	WHI-GRN	LBBG	F	NP	-	NP	-	NP	-
81	GG58481	MMM-RED	BLK-BLK	LBBG	F	R	-	A	-	LB	-
82	GG58482	MMM-BLK	BLK-BLK	LBBG	M	R	-	R	-	NH	-
83	GG58482	MMM-BLK	BLK-BLK	LBBG	M	NP	-	-	-	NH	-
84	GG58484	MMM-BLU	BLK-BLK	LBBG	M	NH	-	R	-	-	-
85	GG58485	MMM-WHI	BLK-BLK	LBBG	F	NH	-	R	-	-	-
86	GG58586	MMM-RED	BLK-RED	LBBG	M	NH	-	NH	-	NH	-
87	GG58487	MMM-BLK	BLK-RED	LBBG	M	NH	-	-	-	K	-
88	GG58488	MMM-GRN	BLK-RED	LBBG	F	K	-	K	-	K	-
89	GG58489	MMM-BLU	BLK-RED	LBBG	M	K	-	-	-	K	-
90	GG58490	MMM-WHI	BLK-RED	LBBG	F	NH	-	NH	-	-	-
91	GG58491	RED-MMM	BLK-GRN	LBBG	M	NH	-	NH	-	NH	-
92	GG58492	BLK-MMM	BLK-GRN	LBBG	M	NH	-	NH	-	-	-
93	GG58493	GRN-MMM	BLK-GRN	LBBG	F	NH	-	NH	-	NH	-
94	GG58494	BLU-MMM	BLK-GRN	LBBG	M	NH	-	-	-	-	-
95	GG58495	WHI-MMM	BLK-GRN	LBBG	M	NH	-	NH	-	NH	-
96	GG58496	RED-MMM	BLK-BLU	LBBG	M	NH	-	NH	-	NH	-
97	GG58497	BLK-MMM	BLK-BLU	LBBG	M	NH	-	NH	-	-	-
98	GG58498	GRN-MMM	BLK-BLU	LBBG	M	NH	-	NH	-	NH	-
99	GG58499	BLU-MMM	BLK-BLU	LBBG	M	NH	-	NH	-	NH	-
100	GG58500	WHI-MMM	BLK-BLU	LBBG	M	K	-	K	-	K	D
101	GG58551	MMM-RED	BLK-WHI	LBBG	M	K	-	-	-	K	-
102	GG58552	MMM-BLK	BLK-WHI	LBBG	M	NH	D	-	-	-	-
103	GG58553	MMM-GRN	BLK-WHI	LBBG	F	NH	-	NH	-	R	-
104	GG58554	MMM-BLU	BLK-WHI	LBBG	M	NH	-	-	-	-	-
105	GG65528	MMM-RED	RED-RED	LBBG	M	-	-	LB	-	A	-
106	GG65529	MMM-BLK	RED-RED	LBBG	M	-	-	LB	-	NP	-
107	GG07221	MMM-GRN	RED-RED	LBBG	M	-	-	LB	-	-	-
108	GG65530	MMM-BLU	RED-RED	LBBG	M	-	-	LB	-	LB	-
110	GG65534	MMM-WHI	RED-RED	LBBG	F	-	-	LB	-	LB	-
111	GG65535	MMM-RED	RED-BLK	LBBG	F	-	-	LB	-	LB	-
112	GG65536	MMM-BLK	RED-BLK	LBBG	F	-	-	NP	-	NP	-
113	GG65537	MMM-GRN	RED-BLK	LBBG	F	-	-	NP	-	NP	-
114	GG65538	MMM-BLU	RED-BLK	LBBG	F	-	-	NP	-	NH	-
115	GG65540	MMM-WHI	RED-BLK	LBBG	M	-	-	NP	-	NP	-
116	GG65541	MMM-YEL	RED-BLK	LBBG	F	-	-	NP	-	-	-
117	GG65542	MMM-RED	RED-WHI	LBBG	M	-	-	NP	-	NP	-
118	GG65544	MMM-GRN	RED-WHI	LBBG	F	-	-	NP	-	NP	-
119	GG65545	MMM-BLK	RED-WHI	LBBG	F	-	-	NP	-	NP	-
120	GG65547	MMM-BLU	RED-WHI	LBBG	F	-	-	K	-	-	-
121	GG65548	MMM-WHI	RED-WHI	LBBG	M	-	-	K	-	-	-
122	GG65549	MMM-YEL	RED-WHI	LBBG	M	-	-	K	-	K	-
123	GG65550	MMM-RED	RED-YEL	LBBG	?	-	-	K	-	K	-
124	GG65551	MMM-BLK	RED-YEL	LBBG	F	-	-	K	-	K	-
125	GG65552	MMM-GRN	RED-YEL	LBBG	F	-	-	K	-	K	-
126	GG65553	MMM-BLU	RED-YEL	LBBG	F	-	-	K	-	-	-
127	GG65554	MMM-WHI	RED-YEL	LBBG	M	-	-	K	-	K	-
128	GG65555	MMM-YEL	RED-YEL	LBBG	M	-	-	NP	-	NP	-
129	GG65556	MMM-RED	WHI-RED	LBBG	F	-	-	NP	-	NP	-
130	GG65557	MMM-BLK	WHI-RED	LBBG	M	-	-	NP	-	NP	-
131	GG65558	MMM-GRN	WHI-RED	LBBG	M	-	-	NP	-	NP	-
132	GG65559	MMM-BLU	WHI-RED	LBBG	M	-	-	K	-	-	-
133	GG65560	MMM-WHI	WHI-RED	LBBG	M	-	-	K	-	-	-
134	GG65561	MMM-BLK	WHI-BLK	LBBG	F	-	-	K	-	K	-
135	GG65562	MMM-GRN	WHI-BLK	LBBG	M	-	-	NP	-	NP	-

136	GG65564	MMM-BLU	WHI-BLK	LBBG	F	-	-	NP	-	NP	-
137	GG65565	MMM-WHI	WHI-BLK	LBBG	M	-	-	NP	-	NP	-
138	GG65566	MMM-YEL	WHI-BLK	LBBG	F	-	-	R	-	NP	-
139	GG65568	MMM-RED	WHI-WHI	LBBG	F	-	-	R	-	NP	-
140	GG65569	MMM-BLK	WHI-WHI	LBBG	M	-	-	NP	-	NP	-
141	GG65570	MMM-GRN	WHI-WHI	LBBG	M	-	-	R	-	R	-
142	GG65571	MMM-BLU	WHI-WHI	LBBG	F	-	-	R	-	-	-
143	GG65573	MMM-YEL	WHI-WHI	LBBG	F	-	-	R	-	R	-
143	GG65572	MMM-WHI	WHI-WHI	LBBG	F	-	-	R	-	NH	-
145	GG65574	MMM-RED	WHI-YEL	LBBG	F	-	-	R	-	R	-
146	GG65575	MMM-BLK	WHI-YEL	LBBG	F	-	-	R	-	R	-
147	GG65579	MMM-GRN	WHI-YEL	LBBG	M	-	-	R	-	R	-
148	GG65580	MMM-BLU	WHI-YEL	LBBG	F	-	-	R	-	R	-
149	GG65582	MMM-WHI	WHI-YEL	LBBG	M	-	-	R	-	R	-
150	GG65583	MMM-YEL	WHI-YEL	LBBG	F	-	-	R	-	R	-
151	GG65585	MMM-RED	BLK-YEL	LBBG	F	-	-	R	-	R	-
152	GG65586	MMM-BLK	BLK-YEL	LBBG	M	-	-	R	-	-	-
153	GG65587	MMM-GRN	BLK-YEL	LBBG	M	-	-	R	-	NH	-
154	GG65588	MMM-BLU	BLK-YEL	LBBG	M	-	-	R	-	R	-
155	GG65589	MMM-WHI	BLK-YEL	LBBG	M	-	-	R	-	NH	-
156	GG65590	MMM-YEL	BLK-YEL	LBBG	F	-	-	R	-	-	-
157	GG65592	MMM-RED	GRN-YEL	LBBG	M	-	-	R	-	NH	-
158	GG65594	MMM-BLK	GRN-YEL	LBBG	M	-	-	R	-	-	-
159	GG65595	MMM-GRN	GRN-YEL	LBBG	M	-	-	R	-	R	-
160	GG65596	MMM-BLU	GRN-YEL	LBBG	M	-	-	R	-	R	-
161	GG65597	MMM-WHI	GRN-YEL	LBBG	F	-	-	R	-	R	-
162	GG65598	MMM-YEL	GRN-YEL	LBBG	F	-	-	R	-	NH	-
163	GG65599	MMM-RED	BLU-YEL	LBBG	M	-	-	R	-	R	-
164	GG67208	MMM-BLK	BLU-YEL	LBBG	M	-	-	-	-	K	-
165	GG62709	MMM-GRN	BLU-YEL	LBBG	F	-	-	-	-	K	-
166	GG62710	MMM-BLU	BLU-YEL	LBBG	M	-	-	-	-	K	-
167	GG67211	MMM-WHI	BLU-YEL	LBBG	F	-	-	-	-	K	-
168	GG67212	MMM-YEL	BLU-YEL	LBBG	F	-	-	-	-	K	-
169	GG67213	MMM-RED	YEL-RED	LBBG	F	-	-	-	-	K	D
170	GG67214	MMM-BLK	YEL-RED	LBBG	F	-	-	-	-	K	-
171	GG67215	MMM-BLU	YEL-RED	LBBG	F	-	-	-	-	R	-
172	GG67216	MMM-GRN	YEL-RED	LBBG	F	-	-	-	-	K	-
173	GG67217	MMM-WHI	YEL-RED	LBBG	M	-	-	-	-	R	-
174	GG67219	MMM-YEL	YEL-RED	LBBG	F	-	-	-	-	R	-
175	GG67220	MMM-RED	YEL-BLK	LBBG	F	-	-	-	-	R	-
176	GG67221	MMM-BLK	YEL-BLK	LBBG	F	-	-	-	-	R	-
177	GG67224	MMM-GRN	YEL-BLK	LBBG	F	-	-	-	-	R	-
178	GG67226	MMM-BLU	YEL-BLK	LBBG	F	-	-	-	-	NH	-
179	GG67228	MMM-WHI	YEL-BLK	LBBG	M	-	-	-	-	NH	-
180	GG67229	MMM-YEL	YEL-BLK	LBBG	M	-	-	-	-	NH	-
181	GG67231	MMM-RED	YEL-GRN	LBBG	M	-	-	-	-	R	-
182	GG67232	MMM-BLK	YEL-GRN	LBBG	F	-	-	-	-	NH	-
183	GG67233	MMM-GRN	YEL-GRN	LBBG	F	-	-	-	-	NH	-
184	GG67234	MMM-BLU	YEL-GRN	LBBG	F	-	-	-	-	R	-
185	GG67235	MMM-WHI	YEL-GRN	LBBG	F	-	-	-	-	NH	-
186	GG67236	MMM-YEL	YEL-GRN	LBBG	F	-	-	-	-	NH	-
187	GG67237	MMM-RED	YEL-BLU	LBBG	M	-	-	-	-	NP	-
188	GG67237	MMM-BLK	YEL-BLU	LBBG	F	-	-	-	-	NP	-
189	GG67242	MMM-GRN	YEL-BLU	LBBG	M	-	-	-	-	NP	-
190	GG67243	MMM-BLU	YEL-BLU	LBBG	M	-	-	-	-	NP	-
191	GG67244	MMM-WHI	YEL-BLU	LBBG	F	-	-	-	-	NP	-

Table 8. The numbers of herring and lesser black-backed gulls ringed on the Isle of May in 1991.

	Herring gull	Lesser black-backed gull
North Ness	146	33
Rona	418	132
Tarbet/Low Light	278	20
Ardcarran	129	15
Lady's Bed/South Ness/ South Horn	118	31
Burrian	185	25
Altarstones	24	2
Colm's Hole-Kirkhaven	211	103
North Plateau	135	185
Horse Hole	17	-
South Plateau	8	-
Maidens	238	-
Total	1907	546

Table 9. Proportion of ringed juvenile gulls at the end of the breeding season in 1991.

Area	No. checked	% with rings
Maidens	25	92.0
Lady's Bed/South Ness/Ardcarran/ Pillow	157	69.5
Kirkhaven/Colm's Hole	35	88.6
Burrian	56	67.9
Tarbet	131	76.3
Rona/North Ness	269	63.9
North Plateau	87	77.3
Alterstones/Horse Hole	22	80.5
Total	782	70.4

Notes: No attempt was made to separate the two species
Checks made 4-5 August

Table 10. Whole island counts of shags, kittiwakes, guillemots, razorbills and fulmars on the Isle of May, 1991.

Area	Shag (nests)	Kittiwake (nests)	Guillemot (birds) (pairs)	Razorbill (birds) (pairs)	Fulmar (sites)	
A Rona (W)	258	377	343	41	15	
B Altarstones-Bishops Cove (South point)	146	1158	2063	245	30	
C Greengates-Bishops Cove	27	963	3086	294	39	
D South Plateau	77	1327	5873	641	30	
E Cornerstone-Pilgrim's Haven	66	895	3980	218	16	
F Pilgrim's Haven-Rubbish Tip	125	441	607	84	28	
G The Maidens	139	77	250	17	3	
H Lady's Bed	151	291	123	20	7	
I South Ness - Colm's Hole	196	36	0	0	14	
J Colm's Hole - Low Light	210	432	200	30	12	
K Tarbet-Low Light	90	293	309	43	16	
L Rona (N and E)	2	0	0	0	0	
Lochside (S)	0	121	0	0	40	
Lochside (N)	0	124	0	0	0	
TOTAL 1991	1487	6535	16834	1633	250	
TOTAL 1990	1703	8129	16778	2368	198	
% change 1990-91	-13	-20	0	-10	-5	+26

- Notes: 1. Kittiwakes and fulmar count 29 May - 4 June except back of Maidens (early July); Shag 3-5 June.
 2. Guillemot/razorbill count 1-3 June, except back of Maidens (mid June). Counts of birds converted to 'pairs' using a correction factor obtained from the Cornerstone study area.
 3. Counts made by J. Calladine, D. Halley, C. Wernham, K. Ferry, J. Graves and M.P. Harris.
 4. Figures not to be used before consultation with M.P. Harris

Table 11. Single counts of occupied kittiwake nests in the non-random plots on 9 June 1991.

Plot	Nests	% change 1990-91
1	24	-10
2L	64	-17
2R	50	-51*
3	52	-9
4	153	-18
7+7b	118	+4
8,9,9extra	66	0
10	133	-38
Total	660	-22

*seems likely boundaries on 2R wrong in 1990.

Counts were made by Dr S Wanless

Table 12. Counts of guillemots in monitoring plots on the Isle of May, June 1991.

Date	Chatter- stones	A	B	D	E	F	G	H	I	J	Rona	Corner- stone	Old	C4		Total
														New	Total	
1	429	206	213	319	149	384	174	341	143	78	160	184	274	342	3122	
2	321	196	167	268	129	338	162	316	127	82	108	157	239	319	2690	
5	438	211	213	315	154	351	176	354	158	76	140	168	261	330	3084	
8	539	214	257	343	169	453	179	373	163	82	144	178	245	336	3430	
9	367	195	197	325	148	381	172	330	142	76	140	177	246	326	2976	
14	539	226	274	349	153	484	204	502	156	91	209	198	268	371	3756	
15	451	219	230	286	146	444	157	338	171	98	146	180	252	324	3190	
16	464	245	216	285	152	347	182	385	172	89	222	183	264	341	3283	
18	431	213	207	272	140	469	242	347	171	84	237	181	248	339	3333	
Mean	442	214	219	307	149	406	183	365	156	84	167	178	255	336	3207	
S.D.	71	15	32	30	11	57	26	56	16	7	44	11	12	15	299	

Note: The total used C4 new

Table 13. Summary of changes in the number of individual guillemots in plots on the Isle of May 1990-91

Plot	1991 mean	SE	% Change from 1990	Significance
Chatterstones	442	24	+20	<0.02
A	214	5	0	n.s.
B	219	11	+4	n.s.
D	306	10	+4	n.s.
E	149	4	0	0
F	406	19	+5	n.s.
G	183	9	0	n.s.
H	365	18	0	n.s.
I	156	5	+8	n.s.
J	84	2.5	+4	n.s.
Rona	167	15	+16	n.s.
Cornerstone	178	4	+14	<0.001
C (New)	336	5	+10	<0.001
Total	3207	100	+7	n.s.

Note: The means were compared using 't-tests'

Table 14. Counts of razorbills in 9 plots on the Isle of May, June 1991.

June	Greenface	Peregrines Nest	A	B	Greengates	Bishops Cove	Horse Hole	Cornerstone	C4 (Old)	C4 (New)	Total
1	79	65	31	34	106	75	1	41	25	43	475
2	70	51	22	17	103	54	2	31	16	37	387
5	76	73	44	37	141	77	5	49	26	60	562
8	93	57	37	38	158	81	5	48	21	52	569
9	110	48	40	27	108	62	3	42	20	51	491
14	101	48	37	40	174	74	3	51	27	68	596
15	88	58	32	34	142	72	5	48	26	54	533
16	83	63	40	33	145	97	2	52	20	50	565
18	93	58	45	25	153	53	3	53	21	58	541
Mean	88	58	36	32	137	72	3	46	22	52	524
SD	13	8	7	7	25	14	1.5	7	3	9	64

Notes: Counts by M P Harris except for Peregrines Nest and Bishops Cove (J Calladine)

Total uses C4 (New)

Table 15. Summary of changes in the number of individual razorbills in 9 plots on the Isle of May, 1990-91.

	1991 mean	SE	% change from 1990	Significance
Greenface	88	4.2	-2	n.s.
Peregrine's Nest	58	2.8	+49	<0.001
A	36	2.4	-12	n.s.
B	32	2.5	-13	<0.05
Greengates	137	8.4	-4	n.s.
Bishop's Cove	72	4.6	+14	n.s.
Horse Hole	3	0.5	+30	n.s.
Cornerstone	46	2.3	+5	n.s.
C (New)	52	3.1	+2	n.s.
Total	524	21.4	+2	n.s.

Table 16. Weather conditions for seabird monitoring counts in June 1991

Date	Wind		Sea state	Cloud Cover	Visibility
	Direction	Beaufort scale			
June 1	NE	3-4	slight	8/8	excellent
2	calm	calm	calm	8/8	moderate
5	NW	1	calm	1/8	excellent
8	SE	3	slight	7/8	excellent
9	NW	4	moderate	6/8	good
14	W	5	moderate	4/8	good
15	S	1	moderate	4/8	excellent
16	NW	1-2	calm	8/8	excellent
18	NW	3	calm	4/8	excellent

Table 17. Details of Oystercatcher pairs breeding in 1991.

No	Place	Date of laying	Clutch (eggs)	Brood (chicks)	Repeat	Fledged (young)	Adult number
1	West Braes	14/5	3	1	0	1	10 94
2	North Plateau	(15/5)	2+	0	?	0	89 100
3	Byres	20/5	2	1+	0	0	13 98
4	Tarbet	(21/5)	2+	0	0	0	101 74
5	Kettle (S)	(4/6)	1+	0	c/2	1	79 91
6	Mouse Knoll	(21/5)	2+	0	Yes	0	68
7	Kettle (W)	(18/5)	3	0	Yes	0	99 106
8	Sewer	20/5	2	0	c/3	0	104 81
9	North Horn Bank	20/5	3	2+	0	0	103 102
10	North Ness	(18/6)	1+	0	?	0	50 49
11	North Horn	21/5	2	2	0	1	92 97
12	Rona Spar (N)	20/5	3	2	0	0	93 96
13	Rona Spar (S)	by 20/5	3	3	0	0	84
14	Beacon	ca 15/5	3	2	0	0	39 71
15	West Braes (top)	26/5	1+	0	c/3	0	62 60
16	Loggans Road	29/5	2+	2	0	0	12 11
17	Kettle (E)	by 25/5	?	0	Yes	0	13 deformed
18	Gully Trap (N)	23/5	3	2	0	2	82 47
19	North Plateau (S)	by 23/5	3	0	0	0	27 42
20	Back Gully Trap	24/5	2+	0	0	0	29 30
21	Burrian	24/5	2	1	0	1	5 69
22	Sewer	23/5	3	0	Yes	0	105 111
23	Silver Sands	26/5	2+	0	0	0	109 95
24	Island Wreck	26/5	3	0	0	0	38 37
25	North Plateau (S)	(25/5)	?	1+	0	1	110
26	North Plateau (S)	26/5	2	2	0	0	77 51
27	Ardcarran	27/5	3	2	0	0	8 108
28	Gully Trap (box)	18/5	2+	1	0	0	35 107
29	Cross Park	?	2+	0	Yes	0	57 36
30	Helipad	?	2+	1+	0	1	61 64
31	North Ness	mid/6	2+	0	0	0	33 34
32	Low Light (N)	?	?	0	0	0	76

32 pairs bred raising 8 young

There was an additional pair which could have bred on the Kettle

Table 18. Details of colour-ringed oystercatchers on the Isle
May 1989-91.

NB = did not breed

DED = found dead

1,2,3 etc. = nest number that year

Bird No.	Ring No.	L. leg	R. leg	Sex	1989	1999	1991
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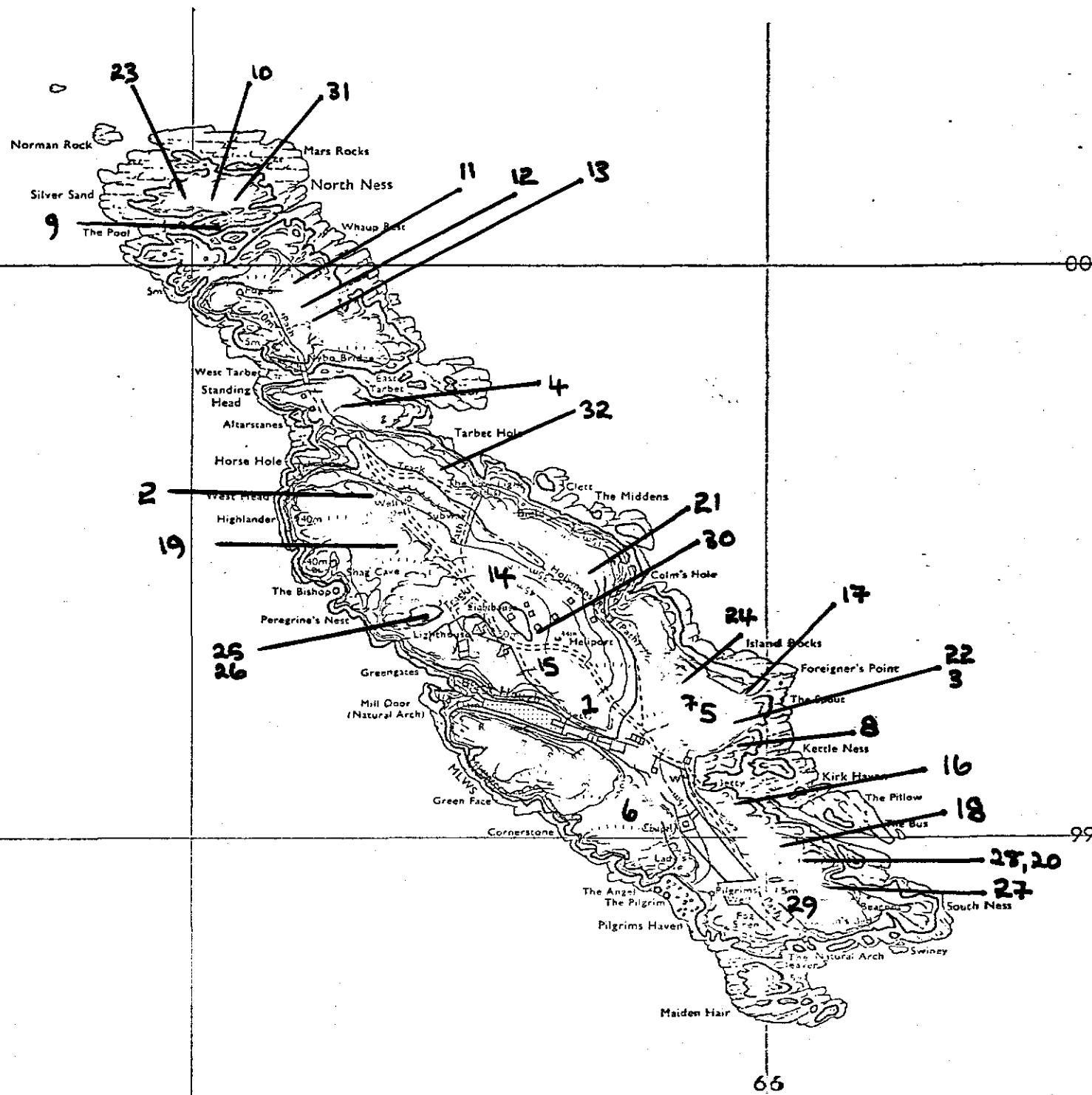
1	FR24897	ZZZ-BTO	YEL-TRI	OYC	F	8	-	-	-	-
2	FR24835	RED-TRI	RED-BTO	OYC	M	8	-	-	-	-
3	FV95991	TRI-YEL	WHI-BTO	OYC	M	6	-	4	-	-
4	FV95911	BLK-BTO	BLK-TRI	OYC	F	-	-	-	-	-
5	FR24826	BLU-TRI	ZZZ-BTO	OYC	M	32	-	27	-	21
6	FR24970	RED-TRI	YEL-BTO	OYC	M	-	-	-	-	-
7	FR24893	ZZZ-ZZZ	ZZZ-BTO	OYC	M	34	-	-	-	-
8	FC22407	RED-BTO	GRN-TRI	OYC	F	34	-	34	-	27
9	FR24878	YEL-TRI	WHI-BTO	OYC	?	DED	-	-	-	-
10	FR24867	YEL-TRI	YEL-BTO	OYC	F	1	-	5	-	1
11	FR24868	GRN-TRI	YEL-BTO	OYC	F	4	-	-	-	16
12	FR24864	DEF-ZZZ	TRI-BTO	OYC	M	4	-	1	1	16
13	FR24877	WHI-TRI	WHI-BTO	OYC	F	7	-	26	-	17
14	FV95910	BLK-BTO	WHI-TRI	OYC	M	-	-	-	-	-
15	FV95912	BLU-BTO	GRN-TRI	OYC	F	26	-	24	-	-
16	FR24895	GRN-BTO	RED-TRI	OYC	F	-	-	-	-	-
17	FR24889	RED-TRI	BLU-BTO	OYC	M	-	-	-	-	-
18	FV95987	TRI-YEL	RED-BTO	OYC	M	-	-	-	-	-
19	FR24873	BLU-TRI	BLK-BTO	OYC	M	-	-	-	-	-
20	FR24871	YEL-TRI	BLK-BTO	OYC	F	-	-	-	-	-
21	FV95905	WHI-BTO	GRN-TRI	OYC	M	-	-	-	-	-
22	FR24879	BLK-TRI	WHI-BTO	OYC	F	-	-	-	-	-
23	FR24896	GRN-BTO	WHI-TRI	OYC	M	-	-	-	-	-
24	FR24875	BLK-TRI	YEL-BTO	OYC	F	-	-	-	-	-
25	FV95915	BLU-BTO	GRN-TRI	OYC	F	-	-	-	-	-
26	FR76189	TRI-YEL	YEL-BTO	OYC	M	21	-	-	-	-
27	FR24900	YEL-BTO	YEL-TRI	OYC	M	27	-	29	-	19
28	FV95914	ZZZ-BTO	BLU-TRI	OYC	M	7	-	26	-	-
29	FR24872	BLK-TRI	BLK-BTO	OYC	M	33	-	7	-	20
30	FR24894	GRN-BTO	GRN-TRI	OYC	F	-	-	7	-	20
31	FR24874	GRN-TRI	BLK-BTO	OYC	F	-	-	-	-	-
32	FR24876	WHI-TRI	BLK-BTO	OYC	M	-	-	-	-	-
33	FV95903	TRI-WHI	BLK-BTO	OYC	M	18	-	16	-	31
34	FV95908	BLK-TRI	ZZZ-TRI	OYC	F	18	-	16	-	31
35	FA26971	TRI-BLK	YEL-BTO	OYC	M	3	-	15	-	28
36	FR24866	GRN-TRI	GRN-BTO	OYC	F	3	-	18	-	29
37	FR24881	GRN-TRI	WHI-BTO	OYC	M	9	-	25	-	24
38	FR24887	GRN-TRI	RED-BTO	OYC	F	9	-	25	-	24
39	FV95913	BLK-BTO	BLU-TRI	OYC	F	14	1	14	-	14
40	FR24865	WHI-TRI	GRN-BTO	OYC	M	-	-	-	-	-
41	FR24898	GRN-BTO	BLK-TRI	OYC	M	30	-	20	-	-
42	FV95906	WHI-BTO	ZZZ-TRI	OYC	F	28	-	29	1	19
43	FR24890	BLU-TRI	BLU-BTO	OYC	M	-	-	-	-	-
44	FR24891	GRN-TRI	BLU-BTO	OYC	F	44	-	24	-	23
45	FV95902	YEL-BTO	BLU-TRI	OYC	M	-	-	-	-	-
46	FR24869	WHI-TRI	YEL-BTO	OYC	M	13	-	-	-	-
47	FR24882	BLU-TRI	YEL-BTO	OYC	F	12	-	22	-	18
48	FV95988	TRI-YEL	GRN-BTO	OYC	F	36	-	17	-	NB
49	FV95903	YEL-BTO	WHI-TRI	OYC	M	19	-	10	-	10
50	FV95909	YEL-BTO	TRI-YEL	OYC	F	19	-	10	-	10
51	FV95989	WHI-BTO	TRI-YEL	OYC	F	22	-	30	-	26
52	FV95990	BLU-BTO	TRI-YEL	OYC	M	-	-	-	-	-
53	FV95907	WHI-BTO	YEL-TRI	OYC	M	23	-	-	-	-
54	FV95904	ZZZ-BTO	GRN-TRI	OYC	F	16	?	-	-	-
55	FR24888	WHI-TRI	RED-BTO	OYC	?	-	-	-	-	-
56	FR24892	WHI-TRI	BLU-BTO	OYC	F	35	1	-	-	-
57	FR24884	YEL-TRI	RED-BTO	OYC	M	35	-	18	-	29
58	FV95986	TRI-GRN	BTO-GRN	OYC	M	15	1	31	-	-
59	FV10975	GRN-BTO	TRI-GRN	OYC	F	-	-	-	-	-
60	FR24899	GRN-BTO	BLU-TRI	OYC	F	5	1	8	-	15
61	FR72579	GRN-BTO	TRI-YEL	OYC	M	15	-	33	-	30
62	FR72577	RED-BTO	TRI-YEL	OYC	M	5	-	8	-	15
63	FR72578	BLU-BTO	TRI-YEL	OYC	F	-	-	-	-	-
64	FV81985	WHI-BTO	WHI-TRI	OYC	F	16	-	33	-	30
65	FV81986	WHI-TRI	WHI-BTO	OYC	?	-	-	6	-	98
66	FV81987	WHI-BTO	WHI-TRI	OYC	F	-	-	-	-	-

67	FV81988	WHI-BTO	BLK-TRI	OYC	M	-	-	-	-	-
68	FV81989	WHI-BTO	TRI-WHI	OYC	F	11	-	23	-	6
69	FV81990	WHI-BTO	TRI-RED	OYC	F	31	-	27	-	21
70	FV81991	WHI-BTO	TRI-BLK	OYC	M	11	-	-	-	-
71	FV81992	TRI-WHI	WHI-BTO	OYC	?	14	-	14	-	14
72	FV81993	WHI-BTO	GRN-TRI	OYC	M	17	-	-	-	-
73	FV81994	TRI-RED	WHI-BTO	OYC	F	-	-	-	-	-
74	FA26957	WHI-BTO	RED-TRI	OYC	M	31	-	28	-	4
75	FV81996	WHI-BTO	TRI-BLU	OYC	F	-	-	-	-	-
76	FV81997	TRI-BLU	WHI-BTO	OYC	F	25	1	21	-	3
77	FR76006	TRI-GRN	WHI-BTO	OYC	M	22	1	30	-	26
78	FR76010	TRI-WHI	RED-TRI	OYC	M	N8	1	-	-	-
79	FR76011	TRI-GRN	RED-BTO	OYC	F	24	-	32	-	5
80	FR76081	RED-BTO	TRI-WHI	OYC	M	33	-	3	-	-
81	FR76099	RED-TRI	GRN-BTO	OYC	?	36	-	17	-	8
82	FR76187	YEL-BTO	RED-TRI	OYC	M	12	-	22	-	-
83	FR76188	YEL-BTO	TRI-WHI	OYC	F	33	-	-	-	-
84	FR76190	YEL-BTO	TRI-GRN	OYC	F	10	1	13	-	-
85	FR76191	YEL-BTO	TRI-RED	OYC	M	-	-	-	-	-
86	FV95993	RED-BTO	RED-TRI	OYC	?	17	1	-	-	-
87	FC22406	RED-BTO	BLK-TRI	OYC	F	13	-	15	-	-
88	FC22403	RED-BTO	WHI-TRI	OYC	?	6	-	4	-	-
89	FC22405	RED-BTO	YEL-TRI	OYC	?	N8	-	2	-	2
90	FC22404	RED-BTO	TRI-RED	OYC	F	-	-	-	-	-
91	FC22407	RED-BTO	TRI-BLK	OYC	M	24	-	32	-	5
92	FC22488	BLK-BTO	TRI-WHI	OYC	?	27	-	11	-	11
93	FC22439	BLK-BTO	TRI-YEL	OYC	?	10	-	12	-	12
94	FC22493	BLK-BTO	TRI-BLK	OYC	?	1	-	5	-	1
95	FA26910	TRI-GRN	BLK-BTO	OYC	M	-	-	9	-	23
96	FA26911	TRI-RED	BLK-BTO	OYC	M	-	-	12	-	12
97	FA26912	TRI-WHI	YEL-BTO	OYC	F	-	-	11	-	11
98	FA34430	TRI-GRN	YEL-BTO	OYC	M	-	-	6	-	3
99	FA26953	TRI-WHI	RED-BTO	OYC	M	-	-	-	-	7
100	FA26954	TRI-RED	RED-BTO	OYC	?	-	-	-	-	2
101	FA26955	TRI-BLK	RED-BTO	OYC	F	-	-	-	-	4
102	FA26956	TRI-BLU	RED-BTO	OYC	F	-	-	-	-	9
103	FA26958	RED-BTO	TRI-BLU	OYC	M	-	-	-	-	9
104	FA26959	RED-BTO	TRI-GRN	OYC	M	-	-	-	-	8
105	FA26960	TRI-BLK	WHI-BTO	OYC	M	-	-	-	-	22
106	FA26961	TRI-BLK	RED-BTO	OYC	F	-	-	-	-	7
107	FA26972	TRI-BLK	BLU-BTO	OYC	F	-	-	-	-	28
108	FA26974	TRI-BLK	GRN-BTO	OYC	M	-	-	-	-	27
109	FC45849	BLK-BTO	TRI-GRN	OYC	F	-	-	9	-	25
110	FA26981	TRI-BLK	YEL-BTO	OYC	?	-	-	-	-	25
111	FA26986	TRI-BLK	BLK-BTO	OYC	F	-	-	-	-	22

Table 19. Population estimates of Isle of May seabirds 1980-91.

	Fulmar (sites)	Shag (nests)	Herring Gull (nests)	Lesser black- backed gull (nests)	Kittiwake (nests)	Gulllemot (birds)	Razorbill (birds)	Elder (nests)	Oystercatcher
1980	143	1041	c.4000	(490)	n.c.	n.c.	n.c.	c.200	25
1981	n.c.	1163	c.2500	(470)	n.c.	16300	2086	309	28
1982	n.c.	1425	2300	c.550	n.c.	n.c.	n.c.	241	31
1983	101	1567	2578	1385	(6115)	22550	2220	545	30
1984	175	1639	2230	1488	6012	19005	2051	413	29
1985	156	1524	2165	1033	5510	18390	1825	535	33
1986	150	1310	1943	682	4801	19151	1864	557	34
1987	n.c.	1916	2117	534	6765	17546	1887	636	30
1988	n.c.	1290	1711	563	7638	16791	2128	650	33
1989	212	1703	1629	643	7564	18328	2613	680	36
1990	198	1386	1551	618	8129	16778	2368	841	36
1991	250	1487	1447	788	6535	16834	1633	592	32

MAP 1. Oystercatcher pairs in 1991



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