GULLS ON LUNDY, 1947-56

By H. J. Boyd

Our knowledge of the size of the gull populations on Lundy during the last ten years may be summarized all too briefly :

Year	*Great Black-backed Gull*	*Lesser Black-backed Gull*	*Herring Gull*	*Kittiwake*
1947	—	—	—	—
1948	—	—	—	—
1949	48 pairs	100 pairs	1230 pairs	1600 nests
1950	—	—	—	1387 nests
1951	—	—	—	2026 nests
1952	30-40 pairs	less than 100 pairs-more than in 1951		at least 2500 nests
1953	about 30 pairs	—	less than in 1952	1858 nests
1954	about 40 pairs	61 nests	—	—
1955	35 pairs	41 nests, 55 pairs	—	1308 nests
1956	32 nests	36 nests, 40 pairs	—	1335 nests
1939	57 pairs	350 pairs	3000 pairs	3000 nests

The estimates for 1939 added to the bottom of the table were made by Richard Perry (1940). They indicate that between 1939 and 1949 all four species decreased in numbers (by 16%, 71%, 59% and 47% respectively). The recent figures show a continued decline in the numbers of Great and Lesser Black-backs, do not exist for Herring Gulls, and show that the numbers of breeding Kittiwakes have fluctuated widely. The changes recorded for each species may most conveniently be discussed separately, in the light of the available knowledge of their distribution both on the island and away from it. Changes in status in other breeding localities are also relevant to the discussion, and the position on the island of Steep Holm, further east in the Bristol Channel (five miles north-west of Weston-super-Mare), is of particular interest, since that is the nearest large breeding place for which details of numbers are available. For permission to use data from Steep Holm, we are indebted to a group of members of Bristol Naturalists' Society led by Mr R. H. Poulding, who have been investigating the gulls of the island since 1946. Mr Poulding has summarized results of ringing there in two papers (1954, 1955).

Great Black-backed Gull.

The decrease of a third in the numbers nesting between 1949 and 1956 was twice as great as the fall from 1939 to 1949. This is rather surprising, for elsewhere there seems to have been a marked increase in numbers. Although the results of the national census in the summer of 1956, organized by Mr T. A. W. Davis, with the aid of the British Trust for Ornithology, are not yet available, there will probably be a number of breeding stations which will show changes like those reported from Steep Holm, where there

were thirty-three nesting pairs in 1949 and seventy-four in 1956. This increase seems to have followed a similar boom in numbers of Herring Gulls over most of Northern Europe and to be associated partly with the breeding season food supply which the latter afford and more especially with increased winter food supplies made available by changes in human behaviour, in particular changes in inshore fishing techniques and the growth of towns. It seems probable that the failure of the Lundy Great Black-back population is due to the major decrease in the numbers of sea-birds nesting on the island. If there are only a tenth of the auks there were before the last war, and if the smaller gulls are fewer too, the potential food supply for nestling Black-backs must be very much less than it was. Direct persecution by man, at least on the island, is unlikely to have produced the drop in numbers for, although some eggs have doubtless been taken, most of the nesting sites of this species are difficult to reach or wholly inaccessible. No very definite drop has occurred since 1952. It may well be that the Black-back population has now attained a new equilibrium with the diminished food supply and that it will change little in strength unless and until there are further major changes in the status of the auks and smaller gulls.

Only nestling Great Black-backs have been ringed on Lundy. Two have been recovered: one at Bude, north Cornwall, eight months after ringing, the second in the estuary of the River Neath, Glamorgan, two years and ten months after marking. The species seems nearly sedentary over most of its range.

Lesser Black-backed Gull.

The tabulated figures suggest not only that the breeding population is decreasing, but that the annual rate of decrease since 1939 has been fairly constant at about 11%. The numbers themselves do not show whether the change has been due to an increase in adult losses or a decrease in effective replacement, or both together; but since the population was subjected to severe egg-collecting during the war and just after it, which has persisted on a reduced scale, there is little doubt that failure to rear young has been the prime cause. This species is more vulnerable to collecting than the Herring Gull, because it tends to nest on more nearly level ground so that the nests are more easily robbed. But it is also possible that Herring Gulls have ousted some of the Lesser Black-backs from their breeding sites, as has been reported from a number of other places when both species breed. On Steep Holm, where Herring Gulls have greatly increased between 1949 and 1956, the number of Lesser Black-backs breeding has fallen from about seven hundred and fifty pairs to about six hundred during the same period. This is a smaller rate of decline than that on Lundy, but the gulls on Steep Holm have suffered only sporadic human

interference and so have been self-regulated rather than controlled by man.

The only recovery from the nestlings ringed on Lundy was of a bird found dead where ringed two months later, so that the extent of the dispersal and migrations of the colony remain unknown.

Herring Gull.

We are lamentably ignorant about the numbers of this species, largely because it is both familiar and unpopular. Only one inadequate attempt at a breeding census has been made since the Society was formed, which is rather remarkable, because a nest census would be comparatively easy to make. Herring Gulls must have provided the bulk of the eggs collected for human consumption on the island. The numbers of eggs taken between 1939 and 1949 must have been well over ten thousand, so that it is scarcely surprising to find an apparent drop of three-fifths in the breeding population. In recent years, with better communications with the mainland, a greater abundance of food available on the island and with a fall in the market value of gulls eggs, egging seems to have decreased and it would be interesting to establish whether a marked rise in the population is taking place.

Though no series of total counts is available, eight annual sample counts have been made in the South-West census area (see earlier Annual Reports for details). The successive annual maxima recorded in the years 1949 to 1956 inclusive were 348, 332, 478, 490, 446, 398, 260 and 540, with a mean of 411. These totals suggest that the population has been fluctuating irregularly. The very large differences between the figures for 1950 and for 1951, and between the last three totals suggest either that the birds counted included very different proportions of non-breeders in different years or that immigration and emigration greatly affect the population of the census area. In 1956 (as reported elsewhere), the breeding density in the area was much higher than in the previous years and had as a corollary a marked increase in pre-fledging losses of young birds.

The use of counts of adults in a sample area for estimating population changes is unsatisfactory and should be abandoned, unless it can be supplemented by nest counts.

On Steep Holm, with little human interference, the Herring Gull population has risen greatly. A nest count in 1956 revealed a total of about three thousand six hundred nests, whereas an estimate of the breeding population in 1949 totalled only one thousand two hundred and fifty pairs. The earlier estimate is now thought to have been too low, but even so it is likely that the Steep Holm population doubled itself, at the least, in the course of seven years. The rate of increase there will probably fall off rapidly, if it has not already done so, because overcrowding led (in 1954 and 1955, but not apparently in 1956) to very high losses of eggs and young

birds). Similar increases have occurred over most of the range of the species. In many countries it has become so numerous as to be considered a menace and large-scale control measures (usually egg destruction, but also the killing of adults) have been taken in Denmark, Holland, and on the north-east coast of the United States. One of the difficulties about 'controlling' the number of a species like the Herring Gull in which females do not breed until they are four or five years old, but may then live another ten to fifteen years, is that it is very difficult to predict what will happen as the result of any action against eggs or nestling birds because of the long interval between hatching and maturity. The destruction of adults, is thus more efficient, though far more liable to arouse public hostility, than the taking of eggs or the killing of embryos by spraying or pricking the eggs. Fortunately at the present time there seems no justification for measures against the Lundy gulls, thanks it seems to the destruction of eggs seven to seventeen years ago.

Ringed nestling Herring Gulls have produced thirty recoveries ; mostly within a year of marking, but including one recovered over seven years later. There have been two recoveries from France : one from Brest three months after ringing, the other from Ile d'Oleron, one year and eight months later. Another was recovered in its first autumn on the Isle of Wight. The others have been equally distributed on the north and south sides of the Bristol Channel—thirteen in Wales (three in Carmarthen, the rest in Glamorgan) and thirteen in England (eleven in Devon, two in Cornwall)—with one ring found on Lundy. These figures suggest that, though some young Herring Gulls drift away southwards or desert their birthplace altogether, the majority remain fairly close to it, in what Poulding (1955) calls the 'local dispersion zone'. The ratio of distant to local recoveries is 3/27 (one-ninth) for Lundy-ringed nestlings, apparently rather more than for Steep Holm nestlings (6/74, less than one-twelfth). This may be misleading, because the search for recoveries of the latter has been more intense. Of more importance is the extent of the overlap in the distribution of birds bred in the two colonies. This does not seem to very be great on the southern, English shore of the Channel, for no Lundy birds have reached Somerset, no Steep Holm birds have reached Cornwall and only two have been recovered in Devon and these were both on the south coast. But Mr J. V. Beer made an interesting observation on 23rd June 1956, when travelling on a Campbell's steamer from Clevedon to Ilfracombe. A ringed Herring Gull followed the boat from Bridgwater Bay to between Lynmouth and Ilfracombe. Mr Beer managed to read the number on the ring (410129). This was put on an adult on Steep Holm in October, 1955. Another Steep Holm bird, wearing a coloured plastic ring had earlier been seen at Ilfracombe, early in the November following its marking as a nestling. On the Welsh side, the overlap is similarly slight and limited to a short stretch of the Gower coast—though

Merthyr Tydfil, twenty miles inland in Glamorgan, has provided single records of birds from each of the two groups. There are as yet no recoveries on one island of gulls ringed on the other.

It would be particularly interesting to carry out a long-term comparison of the two populations, because it seems likely that there are important differences in the food supplies available to them. Steep Holm birds find most of their food in the major Bristol Channel ports of Cardiff, Newport, Avonmouth and Bristol and the seaside resorts of Barry, Penarth and Weston-super-Mare. These sources of supply are all within twenty miles of the island, the resorts and Cardiff being within ten miles. This means that there are abundant supplies of food available throughout the year within half an hour's flying of the breeding places. Lundy gulls on the other hand depend much more on inshore fishermen, for the island is forty-four miles from the only major port, Swansea, within its local dispersion zone and over twenty miles from the heavily populated part of the North Devon coast, so that breeding birds are likely to have to seek much of the food for themselves and their nestlings on the island itself. With the decline in the auk population, this is not the place it was. Thus even if egg-collecting and other human interference were to be reduced to a low level it seems unlikely that the Lundy Herring Gull population could quickly regain its pre-war level. It must be hoped that this natural experiment can be carried through without serious disturbance by human 'control' measures.

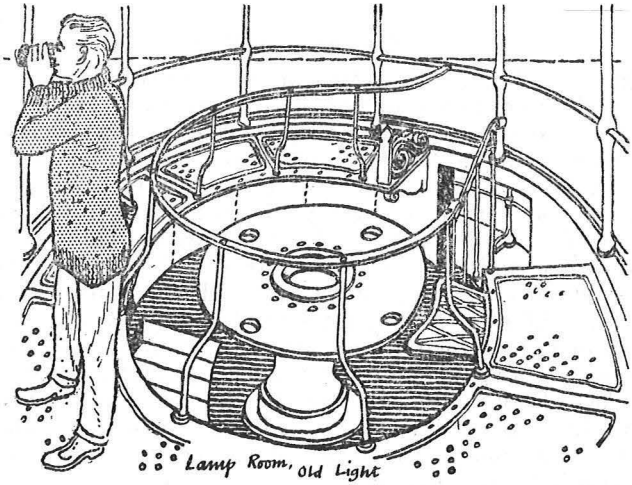
Kittiwake.

The least familiar and most attractive of the nesting gulls has, very naturally, received the most attention. There is an impressive-looking series of nest counts since 1949, broken only once. Unfortunately the standard complaint (and excuse) of the statistician 'not enough information' must be uttered again. The nest counts demonstrate that big changes have occurred in the size of the breeding population, but are quite inadequate to account for them. All that can be said is that the increases between 1950 and 1952 seem to be too great to have been achieved solely by additions of young birds reared in the years 1948 and 1949 respectively to survivors of the existing breeding population, even if the losses of both young and old birds were unusually light during the years of increase. This suggests that immigration of birds bred elsewhere may have taken place on a considerable scale in those years. Once it is necessary to assume that the population is not 'closed', but is affected by immigration and emigration, the problems of determining the population structure become much more difficult. One important piece of evidence of emigration has recently been obtained: a nestling, marked on Lundy in 1952, was found nesting on Grassholm (the outermost Pembrokeshire island) in the summer of 1956. This transfer to another breeding group is quite a different

phenomenon from dispersal outside the breeding season which may take Lundy birds far away from home waters (though most probably remains within two or three hundred miles).

The results of ringing Kittiwakes on Lundy have been disappointing. The recoveries away from the island, though they include finds in Newfoundland, Spain and Holland, have added nothing to what had already been found out by marking before the war. And attempts to estimate mortality statistics merely confirm the sad conclusion of Coulson and White (1955) that this cannot be done because many Kittiwakes contrive to lose their rings. It may be that in the future long lasting rings will rectify this situation, but until suitable rings are available it would probably be better to stop marking Kittiwakes on Lundy.

In the last two seasons the Warden has collected some very interesting data on nesting success in three colonies on the island. The average number of young birds fledged from each nest was about 0.70 in both years. This contrasts very strikingly with the success of Kittiwakes breeding near Marsden, Co. Durham, studied by Coulson and White (1955, 1956). At the latter an average of 1.64 young birds left each nest in the years 1953 and 1954. The Marsden colonies were expanding rapidly at this time. It seems probable that the rearing success of Lundy birds (if the colonies studied are typical) is scarcely adequate to ensure the replacement of adult losses (10% to 18% annually) and cannot lead to the high



level of 1939 without the aid of immigration. The Warden has shown that nesting success is inversely related to the amount of human disturbance of breeding groups, so that we can best help the species by disturbing the bigger colonies as little as possible. Unless more young are reared a further decrease in the breeding population seems likely.

In sum, it seems that the breeding gulls of Lundy, like the auks, are not very prosperous, but that the causes of their troubles lie on the island rather than away from it.

REFERENCES

COULSON, J. C. and WHITE, E. 1955. Abrasion and loss of rings among sea birds. *Bird Study*, 1 : 41-44.

COULSON, J. C. and WHITE, E. 1956. A study of colonies of the Kittiwake, *Rissa tridactyla* (L.). *Ibis*, 98 : 63-79.

PERRY, R. 1940. *Lundy, Isle of Puffins*. Lindsay Drummond London, pp. 267.

POULDING, R. H. 1954. Loss of rings by marked Herring Gulls. *Bird Study*, 1 : 37-40.

POULDING, R. H. 1955. Some results of marking gulls on Steep Holm. *Proc. Bristol Naturalists' Society*, 29 (1) : 49-56.

Ringing in 1956

One thousand two hundred and seventy-two birds of forty-eight species were ringed during the year. Of these, eight hundred and thirty-two were 'sea-birds', a slight decrease on last year mostly due to unfavourable weather conditions. A total of sixty-four adult sea birds were trapped ; adult Shags were again given an individual colour marking. Nestling Shags have been marked with a B.T.O. ring on the left leg and a white plastic ring on the right or with a new and distinguishable type of B.T.O. ring on the left leg. Nestling Guillemots have been marked with a red plastic ring above a B.T.O. ring on the right leg and nestling Razorbills with a blue plastic ring on the right leg and a B.T.O. ring on the left.

Neither spring nor autumn trapping of migrating birds was particularly heavy, although there has been a record trapping at the two lighthouses, sixty-five birds being caught in all, forty-two at North Light mostly by Dave Mapp and twenty-three at South Light mostly by Jack Evans.

The success of the permanent traps was as follows :

Terrace Trap : two hundred and twenty-five. Garden Trap: eighty-eight. Quarterwall Trap : forty-seven.