

## MANX SHEARWATERS ON LUNDY: RINGING INFORMATION AND OTHER OBSERVATIONS

By

A. M. TAYLOR

The status of Manx Shearwaters *Puffinus puffinus* on Lundy has been discussed by several authors, the most recent being Thomas (1981), who reviewed in his introduction various previous estimates of the population and speculations on whether the birds on Lundy were breeding or pre-breeding adults. The information below may help shed some light on these problems.

### RINGING

Although only 434 Manx Shearwaters have been ringed on Lundy between 1947 and 1985, at least 22 birds have been retrapped on Lundy or shown movements between Lundy and other colonies. Two individuals ringed as full-grown birds on Skokholm (Dyfed) have been controlled on Lundy, one in the year of ringing, one after two years. These give no definite clues to the birds' breeding status, since the first could have been a pre-breeding 2-4-year-old and the second could have been ringed as a 2-year-old and controlled as a 4-year-old pre-breeder. Five individuals ringed as full-grown birds on Lundy have been controlled on Skomer, Skokholm (Dyfed) or Annet (Scilly Isles) after 1,1,1,2 and 3 years. These could have been pre-breeding 2-4-year-olds when ringed on Lundy. Of greater significance are the seven birds ringed as pulli on Skomer and Skokholm and then controlled on Lundy. Three of these, caught when 3,3 and 4 years old respectively, would have been pre-breeders but the remaining four, caught when 6,6,7 and 10 years old, had reached breeding age.

In recent years five Lundy-ringed full grown birds have been retrapped on the island in the same year but all of these were after one or two days only and so reveal nothing about the permanence of the birds' association with the island. However, two birds ringed in 1951 were retrapped at the same sites in 1952, and one ringed in 1984 was retrapped at the same site in 1985.

### AUTUMN SURVEYS

Extensive searches were made in late August or early September in the five years 1979-83, covering those areas where most Shearwaters had been ringed recently (near Old Light and in Halfway Wall Bay), and mist-nets were set on several occasions. No Shearwaters were seen, heard or caught at any of these times, when adults feeding chicks, or the emergence of large young from burrows, would have been expected.

### BREEDING STATUS: DISCUSSION

The presence of Shearwaters of breeding age on Lundy in recent years is indicated by the ringing results and by birds found ashore in late April and early May, before pre-breeding birds normally arrive. However, the absence of birds in autumn suggests that any successful breeding is on an insignificant scale. These two observations are compatible if the activities of rats *rattus sp.* are born in mind. Studdy (1948) excavated and observed 31 burrows on Lundy. Only one contained eggs; the first was accidentally broken and a replacement was thought to have been broken by a rat. The remains of ten full grown birds, and one immature from the previous year, all thought to have been killed by rats, were found in burrows. However, eggs and one live chick were reported found on Puffin Slope in previous years.

So it is likely that, while breeding is continually attempted, it is almost totally unsuccessful because of predation by rats. If this is the case, the population must be maintained by immigration, probably mainly from the large colonies on Skomer and Skokholm. There seems to be no other obvious way of explaining why Lundy does not have a population of comparable size to theirs.

A rat extermination programme might in theory benefit the Shearwaters and would also probably benefit other species, particularly Puffins *Fratercula arctica*, since Studdy reported many Puffin eggs broken by rats. However, such measures would be extremely difficult on an island as big as Lundy. It would also be necessary to bear in mind the presence of the now very rare Ship ('black') Rat *Rattus rattus* on the island in addition to the Brown Rat *Rattus norvegicus*, as this would complicate the conservation issues.

#### POPULATION SIZE: BIRDS OFFSHORE

Occasionally over the last 10 years, large numbers of Shearwaters (up to 8,000) have been reported offshore. These have usually been daytime feeding flocks in July — the month of peak activity by birds of pre-breeding age — or streams of birds passing north or south close to the island in windy conditions. The normal maximum number gathering offshore at dusk earlier in the year has been about 200. Individuals incubate for about 6 days before being relieved by their mate (Cramp and Simmons, 1977). So as long as there is no tendency for different pairs to favour changeovers on the same nights, these figures would give a maximum population of about 1200 pairs attempting to breed. This is considerably lower than Thomas' 'extreme upper limit' of 2,800-7,700 pairs based on a burrow survey.

#### REFERENCES

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