

PUFFIN NUMBERS ON LUNDY DURING SUMMER 1991

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ABSTRACT

Between May and mid July 1991 a study was carried out to ascertain the number of puffins on Lundy, whether they were breeding and if so, how many breeding pairs there were. It was a good year for puffins with a maximum total count of 49 individuals. 9 breeding burrows were located but presence of young was only proved at one. Late in the season non-breeding birds were recorded prospecting burrows which suggests that natural recolonisation could take place if the limiting factor was removed.

Keywords: *Puffin numbers 1991*

INTRODUCTION

This report contains the results of a simple puffin survey, using and adapting the methodology employed by Davey (1997) and so producing comparable results. To supplement this very basic estimate of population size, a count was made from the Warden's RIB (Rigid Hull Inflatable boat); the Wardens spent time locating burrows and observing activity at them; and visitors' records were extracted from the LFS Log. All these sources of information were then combined to try to put together a more complete picture of puffin breeding status on Lundy than has been obtained for many years.

METHODOLOGY

a SIMPLE PUFFIN SURVEY

Counts were made on the 6th, 15th and 26th of June and the 5th of July 1999. All surveys were conducted from land during the morning as the birds tended to move further offshore later in the day. Observations were made using both binoculars and a 30x telescope from eleven distinct fixed viewpoints. These vantage points allowed views of the cliffs, sidelands and surrounding sea from The Battery and around the North End to Brazen Ward (Figure 1) following Davey's recommendations. A constant effort of observation was made at each of the viewpoints for 30 minutes with all birds seen on land, sea or on the wing being logged (Table 1). Birds seen flying had the direction of flight recorded so that duplication of counts from one section to the next could, if at all possible, be avoided.

b BOAT SURVEY

In addition to the above, one count was conducted from the Wardens' RIB. This involved both Wardens on a three hour trip around the island logging all birds seen on the water and in flight, with no attempt to count puffins on land (Table 2). Observations were made using the naked eye and binoculars as the motion of the boat made using a telescope impossible. Birds were recorded in the same sections as used in the land survey but as birds were seen all around the island additional sections were added. As with the land survey, care was taken with birds in flight to record the direction of movement and so avoid duplicating counts.

c BURROW LOCATION AND OBSERVATION

In June and July at least one hour was spent at the various vantage points to try and ascertain the location and number of occupied burrows around the Island. Also, the Wardens concentrated on watching activity at known areas of burrows in Jenny's Cove and at St Philip's stone as these areas were easily accessible. Each of the two areas was photographed and the prints were annotated with the areas of burrows for future reference and comparison.

RESULTS

The puffin survey sections and fixed observation points are shown in Figure 1. The number of puffins observed in each survey section are shown in Table 1, whilst the puffin count from the sea is shown in Table 2.

Date	Battery	Jenny's Cove	St. Mark's Stone	Long Roost	North End	Gannets' Bay	Brazen Ward	Total
06/06/99	0	8	1	1	7	3	0	20
15/06/99	0	4	3	2	3	6	0	18
26/06/99	4	20	2	5	9 (raft of 8)	0	0	40
05/07/99	2	13 (raft of 5)	3	4	3	0	0	25
Average	1.5	11.25	2.25	2.25	4	2.25	0	25.75

Table 1: Number of puffins observed in each survey section.

Date	Battery	Jenny's Cove	St. Mark's	Long Roost	North End	Gannets Bay	Brazen Ward	South End	Total
25/06/99	2	9	2	12	13 (raft of 9)	1	0	10	49

Table 2: Puffin count from the sea.

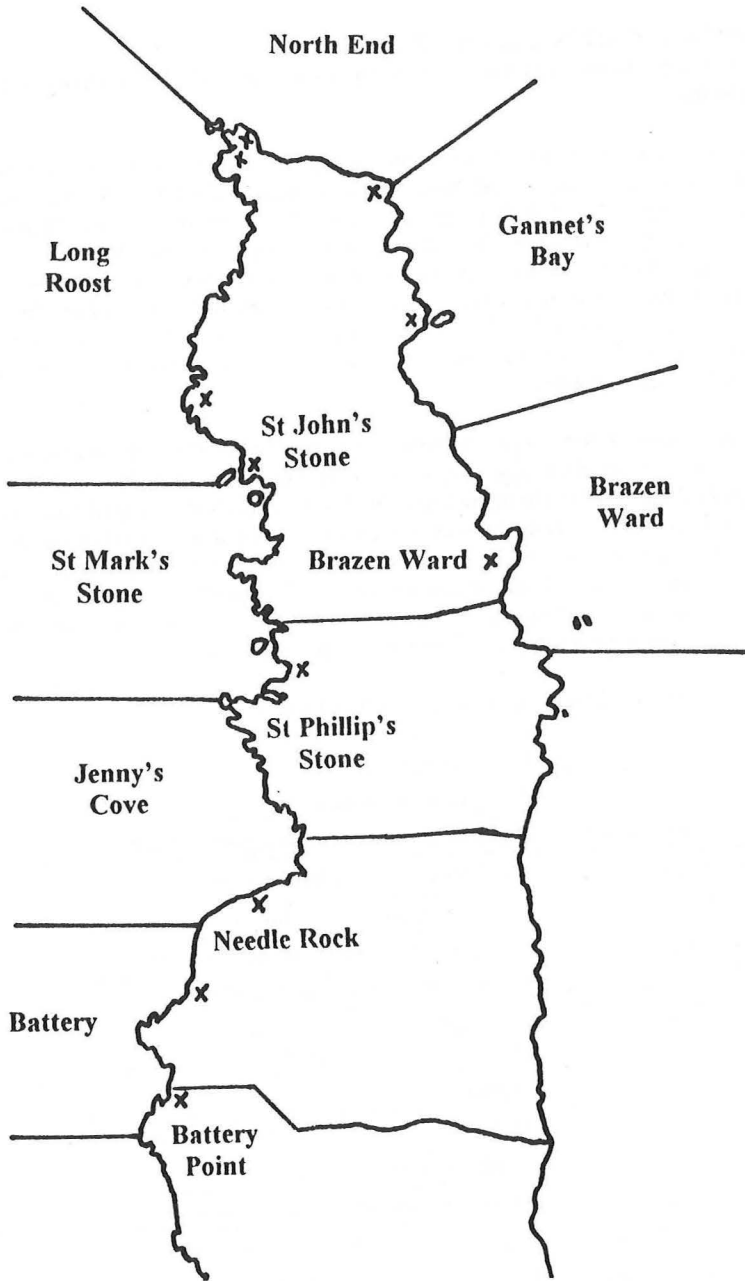


Figure 1. Puffin Survey Sections and Fixed Observation Points

a BURROW LOCATION AND OBSERVATION:

No burrows were found apart from those in the known areas of Jenny's Cove and St Philip's Stone.

There were 5 burrows in Jenny's Cove that had puffin activity throughout the main breeding season (mid May to mid July). They were located amongst the vegetation immediately above the cliff face on the headland east of the Devil's Chimney. Observations early in the season showed pairs of birds engaged in pair bonding behaviour, excavating burrows and taking nesting materials into burrows. Later on, birds were seen on guard duty at burrow entrances whilst partners made flights to and from the terraces. No direct evidence of chicks was observed (i.e. parents returning with food) but the activities of adults suggest that four out of five burrows were possible breeding sites with the fifth being a probable site.

At St Philip's Stone, 4 burrows showed breeding activity (excavation, pair bonding, collection of nesting materials, neighbourly interaction). One burrow definitely had a chick as a parent bird was observed bringing back a bill full of sandeels at the end of June. Two burrows were probable breeding sites as parents were seen standing guard and actively defending the burrows from neighbours. The fourth burrow was a possible site as birds were often seen at its entrance throughout the season. Groups of 2 to 4 birds were seen going in and out of 3 other burrows in this area later on in the season, their behaviour indicated that they were non-breeders checking out these burrows.

Observations from the Lundy log book are listed in Table 3.

Date	Location	Observations
09/04/99	Jenny's Cove	First puffin of the year
28/04/99	Jenny's Cove	One pair of birds seen mating on the water
28/04/99	Jenny's Cove	4 or 5 burrows apparently occupied
30/04/99	Jenny's Cove	7 burrows apparently occupied
06/05/99	Jenny's Cove	One pair of birds seen mating on the water
12/05/99	Jenny's Cove	One pair of birds seen mating on the water
08/06/99	Jenny's Cove	4 pairs of birds excavating burrows
16/06/99	Jenny's Cove	6 pairs of birds bringing nesting material and displaying breeding behaviour
17/06/99	Jenny's Cove	>7 pairs at burrows (12 birds on terraces)
30/06/99	Jenny's Cove	6 birds at burrows and on terraces
04/07/99	Jenny's Cove	3 apparently occupied burrows on terraces
05/07/99	Jenny's Cove	5 pairs of birds in and out of burrows
07/07/99	Long Roost	Possible 2 occupied burrows

Table 3: Observations extracted from LFS log.

b ANECDOTAL EVIDENCE

Local boat skippers who have worked in the area of Lundy for 20 years or more commented that there appeared to be more puffins in the area than they had seen in a long time. Birds were also seen on the water further afield at the Fairway Buoy (off Bideford Bar) and off Clovelly.

From casual observations by the Wardens and others, sandeels (the major prey item for puffins), were in great abundance, and so were rats (predators of eggs and chicks).

DISCUSSION

When comparing the land-based puffin counts to those recorded over a similar timescale in 1997 there appears to have been a slight increase in numbers. The maximum count in 1997 was 30 compared with 40 in 1999, and the average total count was 21.25 in 1997, cf 25.75 in 1999. Whilst some of this apparent increase may reflect the knowledge that the Warden has amassed over 3 breeding seasons, both the boat count of 49 individuals (not including any on land) and the anecdotal evidence seems to confirm the increase.

When looking at the distribution of the birds around the Island in 1997 the birds were fairly equally spread between Jenny's Cove and Long Roost, whereas in 1999 Jenny's Cove had far more birds recorded than any of the other areas. Not altogether surprising as this is where most of the active burrows were recorded, along with St Philip's Stone which is just north of Jenny's Cove. However, when this is compared to the boat count, which concentrated on birds on the water, many of which would not be visible from the Island, a different trend appears. Most birds were seen around the North and South Ends. This suggests that the favoured breeding area was Jenny's Cove but when birds were away from the burrows they tended to congregate in the tidal races at either end of the Island, probably along with non-breeders.

The Wardens always encourage visitors to fill in all wildlife sightings in the LFS Log and it acts as a useful source of additional information (Table 3). For instance mating was recorded in the log on three occasions whereas it was not observed during surveys. Log records also showed that more burrows were investigated by birds early in the season than were actually used for breeding so suggesting that birds were attempting to breed but failing. Then finally, 2 burrows were seen being visited by puffins at Long Roost by visitors, these were not seen by the Wardens. This record was late in the season so it was probably non-breeding individuals.

CONCLUSIONS

The increased time and effort that was put into studying Lundy's puffins in 1999 resulted in a more accurate picture of the status of the birds, and an attempt should be made to carry on with such detailed studies. Observations showed that puffin numbers were up on the last count in 1997; that mating took place; that burrows were excavated and nesting material was taken in, and that 9 burrows were occupied throughout the season, suggesting breeding, but breeding could only be proved in one of these. In addition, it was apparent that non-breeding birds were investigating burrows later on in the season. This

augurs well for the future as it suggests that if whatever has caused the decline in puffins on Lundy could be stopped then natural recolonisation would take place. However, puffin numbers are dangerously low and the cause of the decline must be discovered and reversed in order to save the puffins on Lundy from extinction.

REFERENCES

Davey, E. 1997. Puffin numbers on Lundy summer 1997. *Annual Report of the Lundy Field Society* 48, 29-30.