Rep. Lundy Field Soc. 54

THE BREEDING LAND BIRDS SURVEY OF LUNDY 2004

By

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ABSTRACT

A survey of the breeding land birds of Lundy was undertaken in May 2004. The results of the survey are reported and compared with previous surveys. Twenty-nine species were recorded during the survey compared to 27 recorded in 2001. There was a general trend of population increases since the 2001 survey. Farming practices and particularly grazing regimes are of critical importance for breeding land birds on Lundy and the eradication of the rat population will also be important. Key management actions for maintaining and enhancing habitats for land birds are listed.
Keywords: *Land birds, Bird populations, Habitat management, Conservation.*

INTRODUCTION

Despite its popularity as a bird watching location, there is surprisingly little systematic data on the distribution and abundance of breeding land birds on Lundy.
However, breeding seabirds have been well covered, notably in recent years by Price (1981-1996) and through coverage as part of the national Seabird 2000 survey (Mitchell et al., 2004) between 2000 and 2001.

Whilst the seabird populations are the most important bird populations on the islands, Lundy does support an interesting range of breeding land bird species, which merit further attention. Two recent surveys have helped to provide some clarity on the land birds.

In May 2001, the author made some whole island counts of land birds on Lundy. These results are presented in Lock (2002). It was hoped that the May 2001 survey would provide a baseline against which future changes in status of these birds could be monitored.

Further information is also provided by Parsons (2003), following a study of breeding birds in 2000. Breeding densities and distributions of 15 species of passerine were recorded with individual territories plotted using a Global Positioning System. The results of both surveys are broadly consistent.

Current changes in land management on Lundy, including grazing regimes and livestock numbers, the rhododendron control programme and the apparently successful extermination of rats, may all have significant effects upon the breeding land bird assemblage. It would be useful to monitor these changes over time to inform decisions on management of the island.

The aims of this survey were therefore to:

1 set up a repeatable baseline for the surveying of breeding land birds on Lundy;
2 highlight any indicative changes in species' population/status since the author's 2001 survey;
3 highlight any conservation management issues arising from the survey data.

This paper in general compares results with those from Lock (2002), but further comparison with results from Parsons are also discussed.

METHODS

Methods were similar to those used in the 2001 survey - simply walking within 100m of all points of the island and recording all singing/territorial birds and pairs (see notes below for exceptions). Every area of the island was visited once, with the more bird rich valleys of Millcombe/St John and the east facing sidings as far north as Quarter wall being visited twice.

Exceptions to the methods outlined above for species recording were:

- Raven - breeding had completed prior to the survey period, but observations suggest two pairs
- Linnet - counts are based on singing males, numbers of males in flocks or represent half of flock counts
- House sparrow - not counted on survey, data obtained from Lundy warden (pers. comm.).
- Collared dove - showed no indication of breeding but were present in a single flock
- Wood pigeon - counts represent single birds only - no breeding activity was noted (late breeders?)

In total, fieldwork took approximately 35 hours, less time than the 2001 survey. Also note that, for the 2001 survey, visits were combined with Manx shearwater census work, so that search areas for Manx shearwater burrows may have received a disproportionate survey effort. For the 2004 survey, effort was made to ensure regular/even coverage across the whole island.

All survey work was carried out between 22 and 25 May 2004.

The survey can easily be completed by one person over three to four days or by two people over two days.

RESULTS

The results are shown in Table 1, with population figures given within 13 separate compartments on the island (see Figure 1). Figures from the 2001 survey are given for comparison (shown in brackets).

Twenty-nine species were recorded during the survey. Twenty-seven were recorded in 2001.

The most common species was meadow pipit with an estimated population of 138 pairs (very similar to 131 pairs in 2001), and recorded in all compartments. In 2001, only one other species reached a population of 50 pairs or more - linnet. In 2004, four species exceed that level - skylark, rock pipit, house sparrow and linnet.
Of the more abundant species, linnets appeared to have shown a marked reduction since 2001. However, due to the difficulties in accurately assessing breeding linnet populations using this method - males in flocks or flock counts divided by two - and the difficulty in separating migrants from breeders, assessing actual change in the breeding population of linnets is problematic.

Away from the commoner species, there was still a large proportion of species present at very low population levels. Thirteen of the 29 species (45%) recorded were at a population level of fewer than five pairs.

Of particular note:

- Peregrine - estimated four pairs - breeding at a very high density.
- Lapwing - now apparently extinct as a breeding species - noted in 2003 (but failed to breed) but not in 2004 for the first time.
- Cuckoo and stonechat both apparently recolonising after an absence. Stonechat appears established as a regular breeder for the first time in 40 years.

There appeared to be a general trend of population increases since 2001 - 26 species (90% of total recorded) were equal to or higher than 2001 figures.
Some of the increases may be due to improved habitat management, but the impacts of depressed predation following the apparently successful rat eradication over the winters of 2002/03 and 2003/04 could be a factor. Whilst a small number of rats persisted into the second winter (Appleton *et al.*, 2004), most were removed ahead of the 2003 breeding season and bird breeding success during this year could have been higher, contributing to an increased breeding population in 2004.

The results of improved habitat management may be having an effect across much of the island, but are particularly apparent along the east coast sidelands. Here extensive rhododendron thickets have been cleared and a mosaic of scrub, bracken and grassland restored. Here numbers of wren and meadow pipit have increased from six to 21 and from two to 21 respectively along the Tibbets to Millcombe section of coast, and there have also been increases in blackbird and robin.

DISCUSSION

Longer Term Population Trends

Table 2 compares the figures from the 2001 survey with those from previous counts dating back to 1922. Alexander *et al.* (1945) highlighted the need for caution in interpreting past 'census' data on Lundy. It must be made clear that the population estimates set out in this table are to be considered indicative.

Several authors have commented on the relative instability of the breeding avifauna on Lundy over the years (Harrisson, 1931) and this pattern is believed to be typical of the small British islands (Lack, 1942). There is a clear pattern of erratic breeding shown by many summer migrants and establishment of breeding territories may depend greatly upon weather patterns during the spring migration. Chance factors may determine whether species such as warblers arrive on the island, stay on the island and are able to set up territories.

However, despite the somewhat erratic pattern shown by some species, there would appear to be some trends. Corncrakes became extinct in 1962, following national and regional trends. Curlews and lapwings, which both increased during the middle of the 20th century, have now declined along with regional trends (Lock, 1998). Curlews have been extinct on Lundy since the 1980s and lapwings have declined from 40 pairs in 1973 to just two pairs in 2001 and subsequently to extinction in 2004. Cuckoo decline has also followed a regional trend (Lock, 1998), but 2004 records suggest possible recolonisation following an absence of several years. On the positive side, peregrines have become re-established, following the national trend, and the small population of ravens has remained stable.

Meadow pipits, dunnocks, robins and blackbirds have all appeared to have declined since the 1940s up until 2001, but have all increased in 2004. More accurate and more regular monitoring is required to clarify fully the trends for these species.

Comparison with results from Parsons (2003)

The results from Parsons (2003) were broadly similar to those from the 2001 and 2004 surveys. The same pattern of species abundance and distribution emerges. The principal difference is in the number of territories recorded.

Parsons' methods differed mainly in the level of effort. Fieldwork was carried out over seven days rather than four, with `approximately the southern two thirds of the island' visited twice, rather than only the sheltered east facing valleys visited twice. It is therefore not surprising that Parsons records generally higher numbers of territories. This effect is most notable with the few very common species such as meadow pipit and skylark. Here only more intensive search effort is able to separate individual territories within clusters of breeding birds.

Parsons' results for very common species such as meadow pipit and skylark will almost certainly lie closer to the actual population, and indicate that, given the modest level of survey effort, the numbers of territories recorded in 2004 will be a minimum figure.

The comparison also highlights the need to record survey effort alongside counts of breeding species - so that this can be considered when comparing counts.

Conservation issues

The most important bird populations on the island are without doubt the seabirds. Conservation issues affecting the seabirds are a key driver for management of the island. There is little doubt that predation by rats has severely limited some seabird populations and has almost led to the extinction of the puffin as a breeding bird - the island's totem. The rat eradication programme completed through the English Nature, RSPB, National Trust and Landmark Trust project over 2002/03 and 2003/04 winters appears to have been successful with no further rat signs at the time of writing. It is hoped that there will be an increase in seabird numbers as a result but such action may also help the land bird population. Predation is almost certainly a key factor in the extinction of curlews and now of lapwings on Lundy, and may also be a factor in depressing the population of other potentially widespread species such as wren, dunnock, meadow pipit, rock pipit, skylark and blackbird. Several local observers and visiting birdwatchers have commented on the apparent abundance of young birds during the summer of 2004, which may be indicative of improved breeding success in the `post rat eradication' era. It will be interesting to monitor whether numbers change significantly.

Changes in farming practice over the past 50 years are known to be a key factor in the decline of many bird species across the UK. On Lundy, management of the island's farm may be driving some of the changes in bird populations/distribution. The grassland around the farm is intensively managed and this does provide very limited opportunities for birds and other biodiversity. It is not surprising that Table 1 indicates that the farm area supports only four breeding species (starling, meadow pipit, house sparrow and pied wagtail) and three of these are dependent upon buildings for nest sites. This area of the island, which could provide a range of low intensity farmed habitats that are absent from the rest of the island and add some important habitat diversity, currently supports only limited areas suitable for breeding (and probably passage and wintering) birds.

A less intensive management regime with low input grasslands, lower stocking rates and more sympathetic management of walls and field margins would enhance the value of this area.

Wynne-Edwards (1932) refers to `one or two fields under cereal crops each year' and at this time, the island supported several pairs of yellowhammer. The loss of such habitats is known to be of critical importance for many farmland birds and the re-introduction of some areas of low input spring cereal could have a significant positive effect.

The present grazing regime with a variety of domestic and feral livestock, ponies, wild deer and rabbits has produced a mosaic of structurally varied areas of rough grassland and heathland habitat over much of the island. These habitats support a number of different breeding species, e.g. wheatear on very short grazed areas, skylark and meadow pipit in taller vegetation, stonechat and linnet in gorse/scrub.

However, as with many other areas, there are concerns over the long-term viability of livestock farming on the island and this may well lead to reduced grazing pressure on the island. This could become a serious conservation issue and a longer term grazing plan will need to be developed to secure future management of these habitats. Bracken invasion, particularly on the slopes less favoured by grazing mammals, could become an issue. Grazing by traditional breeds of cattle has been found to be particularly beneficial to conservation grazing of maritime heathland and grassland habitats elsewhere, and can provide particularly good conditions for chough (Mucklow 2004) (see below). However, there have been difficulties in maintaining cattle grazing in the past (D. Bullock pers. com.) and the added value of introducing traditional breeds of cattle would need to be carefully assessed alongside the use of the current suite of grazing mammals.

Clearance of rhododendron from the east coast slopes may also be having a positive effect - replacing dense rhododendron scrub with a mix of open grassland, bracken and scrub - suitable for a range of resident species.

The future

With many species increasing/decreasing at such a rate, added to the relative instability of the small island population, it is difficult to predict what may happen in the future. However, Lundy supports a fascinating breeding land bird fauna and the way forward should be to maintain and enhance this through positive conservation management. The recent loss of breeding lapwing - a potentially high priority species for recovery - is disappointing and, given the large-scale national and particularly regional declines, there is little likelihood of recolonisation. A potential re-colonist is the chough. It is over 100 years since the chough bred on Lundy, but, given an expanding population in south Wales and birds now only 50 km away (visible on a clear day), re-colonisation could be a real possibility through appropriate grazing management on the island.

Whilst management for land birds is not the highest conservation priority on Lundy (the SSSI designation is based upon heathland, grassland, coastal vegetation and seabirds), land bird populations can be enhanced through management measures that are driven by these higher priorities.

The key management actions for maintaining/enhancing habitats for land birds are set out below and it is hoped that these can be incorporated into a wider conservation management programme on the island:

1. Maintain rat-free status and hopefully enhanced breeding productivity of ground-nesting birds.
2. Continue the programme of rhododendron control and restoration of natural grassland/scrub habitats along east sidelands.
3. Maintain an extensive grazing system across the island with whatever domestic and feral livestock can be supported on the island. Investigate potential benefits of traditional cattle grazing to complement current grazing system.

4. Establish lower intensity management of the village farm area - in particular lower input grassland management and provision of some low intensity arable. If arable is used for producing whole straw or animal fodder, this could also reduce need for imports from mainland with associated risk of rat introduction.

There is clearly a need for some more regular systematic monitoring of the land birds on Lundy. The RSPB hopes to be able to report counts of land birds on Lundy on a regular basis using these methods to provide a clearer picture of population trends (with next proposed survey in 2008). It would also be of enormous value for bird watching visitors to the islands to gather some data on the distribution and abundance of Lundy island birds.

ACKNOWLEDGEMENTS

Thanks to David Bullock, Lucy Cordrey (The National Trust), Ben Sampson (Lundy Warden), David Appleton (English Nature), Helen Booker and Claire Mucklow (RSPB), and Tony Taylor (Lundy Field Society) for commenting on an earlier draft of this paper.

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Figure 1. Survey compartments for the breeding land birds survey of Lundy 2004.

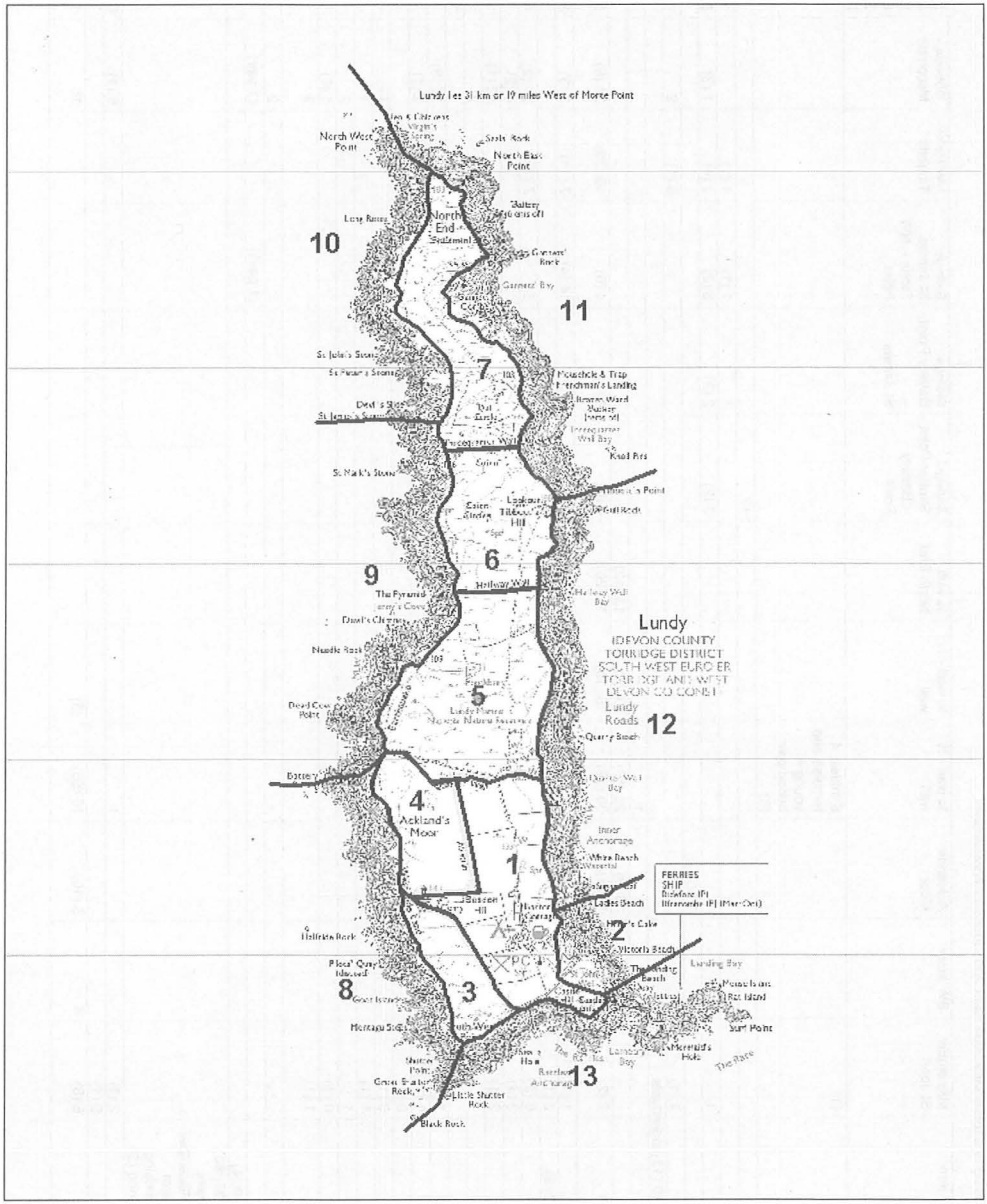

Table 1. Lundy breeding bird totals May 2004 (with 2001 totals for comparison)

Species	Farm	Millcombe/ St John	SW Moor	Acklands Moor	¼ wall - ½ wall	½ wall - ¾ wall	¾ wall – North End	Sidings: Shutter Point – Battery Point	Sidings: Battery Point – St James	Sidings: St James Stone – NW Point	NW Point - Tibbetts	Tibbetts - Milcombe	Southern Slopes: Landing Beach – Shutter Point	Totals
Mallard		(1)			6 males, 4 females and young + hybrid pair (3)									6 (4)
Kestrel								1?						1? (0)
Peregrine									1	1 (1)	1 (1)		1	4 (2)
Oystercatcher		1						3 (2)	2 (2)	5 (2)	3 (4)	1 (3)	5 (1)	20 (14)
Lapwing				0 (2)										0 (2)
Woodpigeon		1 (1)									0 (1)	2		3 (2)
Collared dove	10 (13) individuals													5 (6)
Cuckoo				1	1									2 (0)
Skylark			6 (3)	10 (6)	25 (10)	13 (13)	13 (12)							67 (44)
Meadow pipit	3	2 (2)	10 (5)	10 (8)	30 (22)	18 (15)	15 (26)	6 (6)	4 (8)	4 (6)	10 (20)	21 (6)	5 (7)	138 (131)
Rock pipit		1 (1)						9 (4)	9 (2)	14 (4)	7 (11)	3 (3)	8 (4)	51 (29)
Pied wagtail	2 (3)	2 (1)												4 (4)
Wren		6 (3)						(2)	3	3	7 (7)	21 (2)	4 (1)	44 (15)
Dunnock		3 (4)										4 (2)		7 (6)
Robin		2 (1)										10 (1)		12 (2)
Stonechat				1	1						1	2		5 (0)
Wheatear			3	2 (3)		1 (3)	1 (1)	5 (6)	3 (4)	4 (6)			1	20 (23)
Blackbird	3	7 (7)							1		1	12 (8)		24 (15)
Song thrush		1 (1)										2 (1)		3 (2)
Sedge warbler		0 (1)			1									1 (1)
Whitethroat		0 (1)										1+		1+ (1)
Blackcap		1 (1)										1		2 (1)
Chiffchaff		1										2		3 (0)
Willow warbler		0 (1)										1 (2)		1 (3)
Spotted flycatcher		1 (1)										3		4 (1)
Carrion crow												2		2 (0)
Raven										(1 pair)		(1 pair)		2 (2)
Starling	10 (4)													10 (4)
House sparrow	(25) 80 pairs Millcombe/ farm lambing shed (5)													80 (30)
Chaffinch		2 (1)			1							6 (1)	(1)	9 (3)
Goldfinch		0 (1)												0 (1)
Linnet		6 (8)	4	5 (10)	10 (56)	(6)						15	10 (26)	50 (106)

Table 2. Comparative counts of land birds on Lundy

Species	c1922[1]	c1930[2]	c1942[3]	c1978[4]	2000[5]	2001[6]	2004[7]	Comments
Mallard	3				n/c	4	6	Introduced birds bred between 1958 and 1974. The present stock results from the escape of captive birds in 1987.
Buzzard	2	5	3		n/c			Last bred 1965.
Kestrel	2	2			n/c		1?	Erratic breeder.
Peregrine	2	2			n/c	2	4	Bred up to 1956. First successful breeding after recolonising was in 1978 (not reported at the time and in several following years for reasons of confidentiality).
Pheasant	1	5	3		n/c			Extinct in late 1970s.
Corncrake	1		Calling bird		n/c			Last seen in summer in 1962.
Oystercatcher	15	14	c20	c20	n/c	14	20	
Lapwing		3	c10		n/c	2	0	Peak 40 pairs in 1973.
Curlew			1	1	n/c			One pair almost every year since 1940. No evidence of attempted breeding since the late 1970s.
Rock dove					n/c			Formerly bred – no reports of breeding feral birds.
Woodpigeon	1	2	2	Up to 4	n/c	2	3	Stable.
Collared dove					n/c	6	5	First confirmed breeding in 2001.
Cuckoo	1	1	2	2	n/c		2	Absent in 2001 but breeding again in 2004.
Skylark	Numerous	39			72	44	67	15 pairs in 1955, 50 pairs in 1962.
Swallow	1	1	2		n/c			Erratic since 1950.
Meadow pipit		275	200		179	131	138	50 pairs in 1962.
Rock pipit		41	c20	c26	n/c	29	51	Stable over long period but large increase since 2001.
Pied wagtail		6	1	2	4	4	4	Stable.
Wren	Several	11	35	28	32	15	44	Large increase since 2001.
Dunnock	2	23	6	5	8	6	7	Stable.
Robin	Several	9	6	30	1	2	12	Serious decline since 1970s then increase since 2001.
Stonechat	20	28	15		n/c		5	Regular breeder up to 1962, then no breeding until 1990. Breeding confirmed in 1995, 1996 (4 pairs), 2002 and 2003.

Table 2. (continued) Comparative counts of land birds on Lundy

Species	c1922[1]	c1930[2]	c1942[3]	c1978[4]	2000[5]	2001[6]	2004[7]	Comments
Wheatear	4	12	3	>5	8	23	20	Increase possibly due to increase in grazing.
Blackbird		34	12	c25	20	15	24	
Song thrush	4	9	6	2	2	2	3	Erratic breeder in small numbers.
Mistle thrush		1	1		n/c			Last bred 1947.
Sedge warbler					1 (male)	1	1	Last confirmed breeding 1934/35.
Whitethroat	Many		1	1	1	1	1	Erratic breeder since 1968.
Garden warbler					n/c			Bred in 1934.
Blackcap					n/c	1	2	
Chiffchaff				1	3		3	
Willow warbler		4		1	3	3	1	Erratic breeder.
Goldcrest	1				1			Last confirmed breeding in 1971, with probable breeding in 1995.
Spotted flycatcher		1			n/c	1	4	Confirmed breeding from 1984 to 1997, with at least two pairs in some years. Probable breeding in 1998.
Chough					n/c			Last bred in 1895.
Carrion crow	6	16	5		n/c		2	
Raven	4	4	3	3	n/c	2	2	Usually between 2 and 4 pairs.
Starling			1	30	n/c	4	10	Serious decline since 1970s.
House sparrow	5	22	1	5	n/c	30	c80	40 pairs in 1939 – population accidentally killed.
Chaffinch					4		9	
Goldfinch					n/c		0	
Linnet					n/c	106	50	

nc = not counted

[1] Harrisson, 1931
[2] Wynne-Edwards and Harrisson, 1932
[3] Alexander et al, 1945
[4] Dymond, 1980
[5] Parsons, 2003
[6] Lock, 2001
[7] Lock, 2004