

BIRDS ON LUNDY: A SUMMARY OF FIELDWORK AND RESULTS FROM THE NATIONAL BIRD ATLAS 2007-11

by

TIM DAVIS AND TIM JONES

Harpers Mill, Sterridge Valley, Berrynarbor, Devon, EX34 9TB

e-mail: info@birdsoflundy.org.uk

ABSTRACT

Fieldwork for the National Bird Atlas 2007-11 was carried out on Lundy (Ordnance Survey grid square SS14) to gather information on species distribution and relative abundance (but not population size). Surveys took place in two seasons: winter (November-February) and the breeding season (April-July). A total of 86 species was recorded in winter. The number of species recorded during the breeding season was 115, of which 37 were confirmed as breeding. The resulting Atlas, to be published in 2013, is likely to underpin evidence from existing data (e.g. from the Breeding Birds Survey) that point to national declines among species that still occur in good densities on Lundy, notably Meadow Pipit, Skylark, Wheatear and House Sparrow. Forthcoming surveys of breeding seabirds and terrestrial birds will reveal the overall population sizes of Lundy's birds.

Keywords: Lundy, National Bird Atlas, breeding bird distribution, breeding evidence, wintering bird distribution

INTRODUCTION

Between 2007 and 2011 the British Trust for Ornithology (BTO) organised the third national Atlas of breeding birds of Britain and Ireland, in partnership with The Scottish Ornithologists' Club and BirdWatch Ireland. Unlike the two previous breeding bird Atlases (of 1968-72 and 1988-91), the latest survey also included the abundance and distribution of birds in winter, updating the only previous winter Atlas carried out between 1981 and 1984.

The period of winter recording for the Atlas ran from 1 November to 28 February in each of the four winters from 2007/08 to 2010/11. Recording in the breeding season took place from 1 April to 31 July in the four years from 2008 to 2011. Surveyors (essentially enthusiastic and knowledgeable amateur birdwatchers countrywide) were asked to carry out two types of recording: Timed Tetrad Visits and Roving Records (see below).

This paper summarises results of the Atlas fieldwork carried out on Lundy.

WHAT IS A BIRD ATLAS?

Bird Atlases provide a fascinating periodic insight into the status of all of the bird species of an area. Their scope varies from small counties up to entire continents, but what they all have in common is a series of maps that depict patterns of distribution of every bird species present, whether during the breeding season, winter period, or even year-round. For birdwatchers they provide indications of what can be seen where - indeed they are the basis of distribution maps in bird books. For scientists they provide a means of understanding the processes shaping bird communities and the factors limiting bird distributions. And for conservationists, changes in species' distribution or abundance between Atlases may be linked to habitat management or wider environmental issues, including global climate change.

Adapted from <http://www.bto.org/volunteer-surveys/birdatlas/about/why-new-bird-atlas>

METHOD

The Atlas survey method is based on the Ordnance Survey grid of 10-kilometre squares; the square in which Lundy is situated being SS14. Each 10km square contains 25 2km x 2km squares, known as 'tetrads', which are labelled A-Z (the letter O being omitted to avoid confusion with zero). There are seven tetrads in SS14 which fall across Lundy: G, H, I, J, L, M and N (see Figure 1). Lundy is the only land area in the 10km square.

Fieldwork for the National Bird Atlas spanned four consecutive winters and breeding seasons, beginning in November 2007, and employed two complementary fieldwork methods: Timed Tetrad Visits and Roving Records.

Timed Tetrad Visits (TTVs)

TTVs involve walking slowly through a tetrad, taking in a range of habitats, and recording all adult birds seen and heard during a one-hour period. Counting for a second hour, in a different part of the tetrad, is optional. When results from such visits are compared over a wide area (in this case, the whole of Britain and Ireland), TTVs reveal the broad patterns of relative abundance of the different bird species. They do not aim to produce a complete species list for the tetrad, but a sample of what typically can be found during two visits, one early and one late, in both winter (November-December/January-February) and spring/summer (April-May/June-July).

Roving Records

Roving Records - essentially recording whatever you see, whenever and wherever - help to build comprehensive species lists for each 10km square, outside the limitations of TTVs. They are also a means of accumulating evidence of breeding and for providing records of hard to find species (e.g. Cuckoo) and nocturnal species (e.g. Storm Petrel).

Breeding evidence

Observers provide evidence of breeding using three coded categories, as per the following (abridged) descriptions:

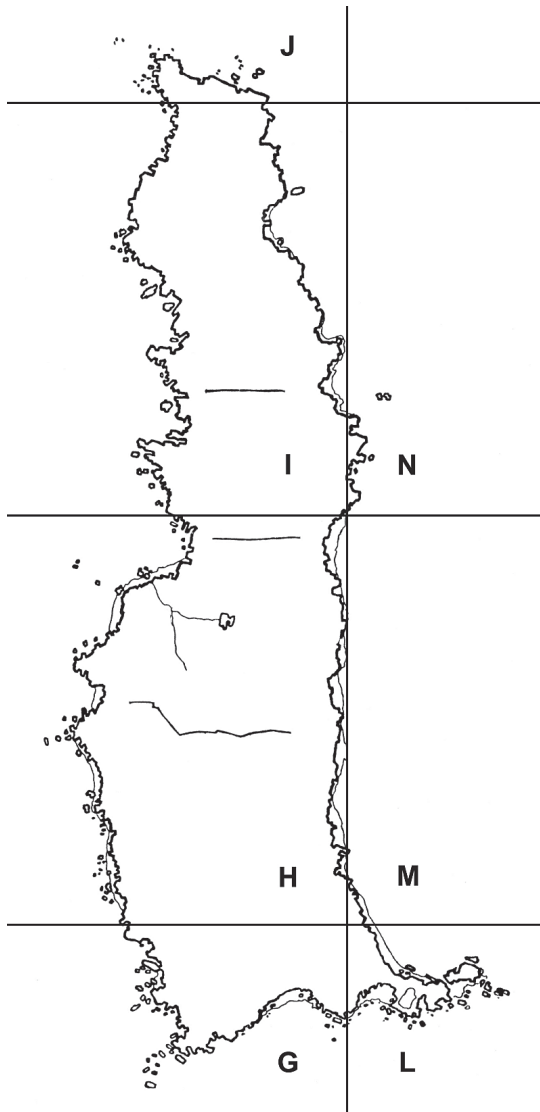


Figure 1: Outline map of Lundy showing boundaries and letter designations of tetrads (2km x 2km squares) within the 10km OS grid square SS14

Possible breeding

- H** Species observed in breeding season in suitable nesting habitat
- S** Singing male present (or breeding calls heard) in breeding season

Probable breeding

- P** Pair observed in suitable nesting habitat in breeding season
- T** Permanent territory presumed or many individuals on one day
- D** Courtship and display
- N** Visiting probable nest site
- A** Agitated behaviour or anxiety calls from adults
- I** Brood patch on adult examined in the hand, suggesting incubation
- B** Nest building or excavating nest-hole

Confirmed breeding

- DD** Distraction display or injury feigning
- UN** Used nest or eggshells found (occupied or laid within period of survey)
- FL** Recently fledged young (nidicolous species) or downy young (nidifugous species)
- ON** Adults entering or leaving nest-site in circumstances indicating occupied nest or adults seen incubating
- FF** Adult carrying faecal sac or food for young
- NE** Nest containing eggs
- NY** Nest with young seen or heard

In addition there were three codes for non-breeding species (i.e. those seen in habitat unsuitable for breeding):

- F** Flying over
- M** Species observed but suspected to be still on migration
- U** Species observed but suspected to be summering non-breeder

Early and late winter and breeding season TTVs on Lundy were carried out in tetrads G and I (by Neil Trout) and in tetrad H (by Tim Davis and Tim Jones). These are the tetrads containing the most significant portions of land.

RESULTS

Winter period

The total number of species recorded from TTV and Roving Records fieldwork during the four winter periods (November-February, 2007/08 to 2010/11) was 85 (Table 1).

Some doubt must exist as to the presence in the list of Manx Shearwater, given that most birds have vacated the waters around south-west England by October. Recent surveys by SeaWatch SW have shown Balearic Shearwaters to occur regularly much later into the autumn and early winter (Wynn *et al.*, 2009). Shearwater sightings from Lundy during the Atlas winter period are much more likely to be of Balearic, rather than Manx, Shearwaters.

Oddities (i.e. unusual for Lundy) in the list include vagrants (Rough-legged Buzzard, Red-breasted Flycatcher, Little Bunting), unusually late individuals of regular autumn migrants (Hobby, Arctic Skua, Lesser Whitethroat) and species that are common enough on the mainland but only infrequently encountered on Lundy (Long-tailed Tit, Rook).

Table 2 gives the results of the early and late winter-period TTVs in tetrad H, during which totals of 26 and 19 species were recorded, respectively. Early and late winter-period TTVs in tetrads G and I picked up 10 additional species (with highest count in brackets): Shag (6), Peregrine (2), Golden Plover (1), Kittiwake (14), Guillemot (3), Razorbill (22), Stock Dove (1), Woodpigeon (1), Pied Wagtail (1) and Fieldfare (4).

Rock Pipit - confirmed breeding in four of the six tetrads in which it was recorded.
Photo: ©Richard Campey



Hard weather in both the early and late winter periods of 2010 brought influxes of up to 100 Lapwings to Lundy - but not present as a breeding species since 2000. Photo: ©Nigel Dalby

Starling, pictured here on a Lundy pony - recorded in tetrads in the south of the island around human habitation in both winter and, as a confirmed breeding species, in spring/summer. Photo: ©Nigel Dalby

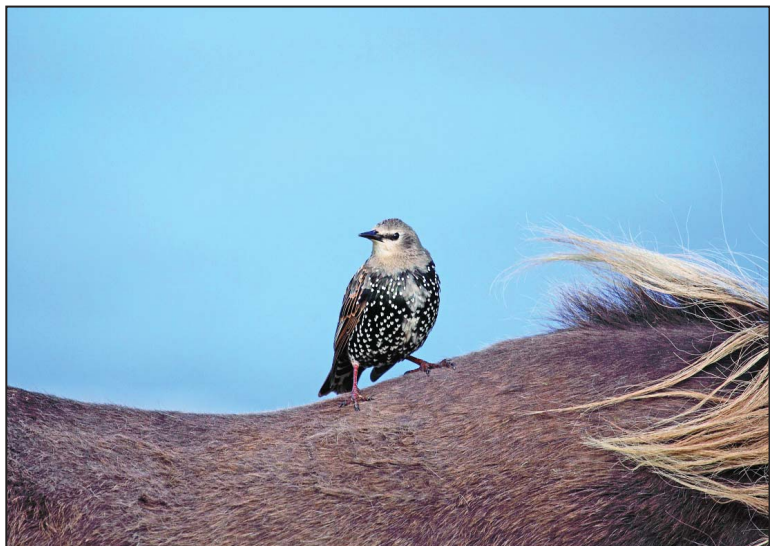


Table 1: All species recorded on Lundy or its offshore waters during the Atlas winter period (November-February), 2007/08-2010/11 (**bold face** denotes vagrant)

Whooper Swan	Arctic Skua	Mistle Thrush
Teal	Black-headed Gull	Blackcap
Mallard	Common Gull	Lesser Whitethroat
Black-throated Diver	Lesser Black-backed Gull	Chiffchaff
Great Northern Diver	Herring Gull	Willow Warbler
Fulmar	Great Black-backed Gull	Goldcrest
Manx Shearwater*	Kittiwake	Firecrest
Gannet	Guillemot	Red-breasted Flycatcher
Cormorant	Razorbill	Long-tailed Tit
Shag	Feral Pigeon	Rook
Little Egret	Stock Dove	Carrion Crow
Grey Heron	Woodpigeon	Raven
Hen Harrier	Short-eared Owl	Starling
Sparrowhawk	Skylark	House Sparrow
Rough-legged Buzzard	Sand Martin	Chaffinch
Kestrel	Swallow	Brambling
Merlin	House Martin	Greenfinch
Hobby	Meadow Pipit	Goldfinch
Peregrine	Rock Pipit	Siskin
Water Rail	Grey Wagtail	Linnet
Moorhen	Pied Wagtail	Lesser Redpoll
Oystercatcher	Wren	Lapland Bunting
Golden Plover	Dunnock	Snow Bunting
Lapwing	Robin	Little Bunting
Purple Sandpiper	Black Redstart	Reed Bunting
Dunlin	Stonechat	
Jack Snipe	Blackbird	
Snipe	Fieldfare	
Woodcock	Song Thrush	
Curlew	Redwing	

*considered more likely to have been Balearic Shearwater (see discussion on page 102)

Breeding season

The overall number of species recorded on Lundy (from TTVs and Roving Records) during the four breeding seasons (April-July) in the years 2008-2011 was 115 (Table 3). Of these, 37 were confirmed as breeding; two species were listed as ‘probable’ breeders (pairs seen in suitable habitat); and a further nine species were assessed as ‘possible’ breeders (either seen in suitable nesting habitat or singing males heard). The remaining 66 species were classified as either ‘migrant’ (e.g. Hobby, Ringed Plover, Arctic Tern, Swift, Mistle Thrush, Greenfinch), ‘summering non-breeder’ (Cormorant) or ‘flying over’, the category most applicable for Gannet, small numbers of which come to feed in the waters off Lundy from spring to autumn, most likely from the colony on Grassholm off the Welsh coast some 80km to the north-west.

Although eight of the ‘probable’ or ‘possible’ breeders have bred on Lundy in years prior to the current Atlas (Storm Petrel and Blackcap have yet to be proved breeding on the island), in practice, given the small size of Lundy and the restricted areas of suitable

Table 2: Summary of early and late winter-period Timed Tetrad Visits to tetrad H

Species	Early winter (9 December 2009)		Late winter (3 February 2009)	
	Hour 1	Hour 2	Hour 1	Hour 2
Teal	–	2	–	–
Mallard	–	14	–	1
Fulmar	–	1	–	–
Cormorant	–	1	–	–
Sparrowhawk	1	–	–	–
Merlin	–	1	–	–
Water Rail	–	2	–	–
Oystercatcher	1	–	–	–
Lapwing	–	–	–	1
Snipe	–	8	–	1
Lesser Black-backed Gull	1	1	–	–
Herring Gull	15	11	–	55
Great Black-backed Gull	2	–	–	2
Skylark	–	1	1	3
Meadow Pipit	–	4	3	7
Rock Pipit	1	–	–	–
Wren	18	4	4	1
Dunnock	4	–	2	–
Robin	6	1	4	2
Blackbird	4	–	8	1
Song Thrush	–	–	10	–
Redwing	–	–	30	10
Long-tailed Tit	–	–	2	–
Carrion Crow	9	28	6	18
Raven	3	–	2	2
Starling	2	61	1	26
House Sparrow	2	36	3	6
Chaffinch	9	3	4	5
Goldfinch	4	–	–	–
Linnet	1	–	–	–
Total species per hour:	17	17	14	16
Total species per visit:	26		19	

Table 3: All species recorded on Lundy during the breeding season (April-July), 2008-2011

	Tetrads in which recorded (✓=tetrad where present but breeding not confirmed; ✓*=tetrad where breeding confirmed)						
	G	H	I	J	L	M	N
Mallard	✓	✓*					
Fulmar	✓*	✓*	✓*	✓	✓	✓	✓
Manx Shearwater	✓*	✓*	✓*	✓*	✓*	✓	
Shag	✓*	✓*	✓*	✓	✓	✓	✓
Peregrine		✓	✓				
Water Rail	✓*	✓*				✓	
Oystercatcher	✓	✓*	✓	✓	✓*	✓*	✓
Lesser Black-backed Gull	✓*	✓*	✓*		✓*	✓*	✓
Herring Gull	✓*	✓*	✓*	✓*	✓*	✓*	✓
Great Black-backed Gull	✓*	✓*	✓*	✓*	✓*	✓*	✓
Kittiwake	✓*	✓*	✓*			✓	
Guillemot	✓*	✓*	✓*	✓*	✓	✓	✓
Razorbill	✓*	✓*	✓*	✓*	✓	✓	✓
Puffin	✓	✓*	✓*	✓	✓	✓	
Cuckoo		✓				✓	
S Skylark	✓*	✓*	✓*		✓*	✓	
Swallow	✓*	✓*	✓		✓	✓	
Meadow Pipit	✓*	✓*	✓		✓*	✓*	✓
Rock Pipit	✓*	✓*	✓*	✓	✓*	✓	
Pied Wagtail (<i>yarrellii</i>)	✓*	✓*	✓		✓	✓	
Wren	✓*	✓*	✓*	✓	✓	✓*	
Dunnock	✓	✓			✓	✓*	
Robin		✓*			✓	✓*	
Stonechat		✓*	✓				
Wheatear	✓*	✓*	✓*	✓*	✓*	✓	
Blackbird	✓*	✓*	✓		✓	✓*	
Song Thrush	✓	✓*				✓	✓
Sedge Warbler	✓*	✓*	✓			✓	
Whitethroat		✓	✓			✓	
Chiffchaff		✓*				✓	
Carrion Crow	✓*	✓*	✓*		✓*		
Raven	✓*	✓*	✓		✓		
Starling	✓*	✓*			✓		
House Sparrow	✓	✓*			✓	✓*	
Chaffinch	✓	✓*			✓	✓	
Goldfinch	✓	✓*			✓	✓	
Linnet	✓*	✓*	✓		✓	✓	✓
Probable breeding on Lundy	G	H	I	J	L	M	N
Woodpigeon	✓	✓*	✓			✓	
House Martin	✓	✓*	✓		✓	✓	
Possible breeding on Lundy	G	H	I	J	L	M	N
Storm Petrel		✓	✓				
Kestrel	✓*	✓			✓		
Feral Pigeon	✓	✓*			✓*		
Collared Dove		✓*					
Blackcap		✓*	✓		✓	✓	
Lesser Whitethroat		✓*					
Willow Warbler	✓	✓*			✓	✓	
Goldcrest		✓*			✓		
Spotted Flycatcher		✓*					

A further 66 species were recorded but categorised as non-breeding migrants/visitors (bold face denotes a nationally scarce migrant or British vagrant):

Greylag Goose, Shelduck, Wigeon, Teal, Shoveler, Tufted Duck, Quail, Gannet, Cormorant, Little Egret, Grey Heron, **Black Kite**, Sparrowhawk, Buzzard, Merlin, Hobby, Little Ringed Plover, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Dunlin, Snipe, Whimbrel, Curlew, Great Skua, Black-headed Gull, Common Gull, Arctic Tern, Stock Dove, Turtle Dove, Nightjar, Swift, Kingfisher, Great Spotted Woodpecker, **Short-toed Lark**, Sand Martin, Tree Pipit, Yellow Wagtail, Grey Wagtail, [White Wagtail - nominate subspecies of Pied Wagtail], Black Redstart, Redstart, Whinchat, Ring Ouzel, Redwing, Mistle Thrush, Grasshopper Warbler, Reed Warbler, Garden Warbler, Dartford Warbler, Subalpine Warbler, Wood Warbler, Firecrest, Pied Flycatcher, Great Tit, Jackdaw, Rook, Hooded Crow, Greenfinch, Siskin, Lesser Redpoll, Common Crossbill, **Trumpeter Finch**, Bullfinch, Hawfinch, Corn Bunting

habitat (e.g. wooded areas, farm buildings, human habitation), attempted or successful breeding by Feral Pigeon, Collared Dove, House Martin, Blackcap, Lesser Whitethroat, Willow Warbler, Goldcrest and Spotted Flycatcher would in all likelihood have been noticed. It would be reasonably safe to conclude therefore that none of these species bred on Lundy during the Atlas period. Of the others, sufficient rhododendron cover remained in the early period of the Atlas to enable Woodpigeons to nest undetected; Kestrels may have nested, or attempted to do so on inaccessible West Side cliffs out of view of observers; and Storm Petrels are long suspected to be breeding on Lundy (e.g. birds with brood patches caught at night) but as yet without firm evidence.

As well as the total number of species, Table 3 shows the breakdown in species distribution on the island by tetrad (note that not all species were assigned to tetrad) and the maximum recorded breeding status for each species. Tables 4, 5 and 6 show the species and the numbers of birds per species recorded during the early and late breeding season TTVs in tetrads G, H and I, the three tetrads containing significant areas of land. Of these, H has the largest land area and is the only one with its centre on land.

Table 4: Summary of early and late breeding-season Timed Tetrad Visits in tetrad G
(**bold face**=species showing *any* evidence of breeding)

Species	Early season (25 May 2009)	Late season (21 June 2010)
	Hour 1	Hour 1
Mallard	3	–
Fulmar	1	2
Shag	26	19
Water Rail	–	2
Oystercatcher	–	1
Lesser Black-backed Gull	11	11
Herring Gull	80	59
Great Black-backed Gull	15	17
Kittiwake	4	1
Guillemot	90	71
Razorbill	150	167
Puffin	3	2
Feral Pigeon	–	1
Skylark	10	14
Swallow	6	2
Meadow Pipit	18	15
Rock Pipit	1	4
Pied Wagtail	–	1
Wren	1	1
Dunnock	–	1
Wheatear	5	8
Blackbird	–	1
Song Thrush	–	1
Carrion Crow	5	5
Raven	2	2
Starling	9	–
House Sparrow	–	2
Linnet	17	13
Total species per hour/visit:	20	26

Table 5: Summary of early and late breeding-season Timed Tetrad Visits in tetrad H
(**bold face**=species showing *any* evidence of breeding)

Species	Early season (29 April 2011)		Late season (6 June 2010)	
	Hour 1	Hour 2	Hour 1	Hour 2
Mallard	1	6	–	6
Shag	2	–	5	–
Peregrine	1	–	–	–
Water Rail	–	–	1	–
Oystercatcher	1	–	1	2
Lesser Black-backed Gull	1	15	41	4
Herring Gull	27	141	1	37
Great Black-backed Gull	3	5	5	–
Razorbill	–	–	–	13
Feral Pigeon	–	–	3	–
Woodpigeon	2	2	–	2
Collared Dove	1	–	–	2
Skylark	–	10	–	11
Swallow	3	7	1	7
House Martin	1	1	–	3
Meadow Pipit	3	31	3	18
Pied Wagtail	1	1	3	–
Wren	8	3	9	2
Dunnock	1	–	1	–
Robin	1	–	–	–
Stonechat	–	1	–	–
Wheatear	3	7	–	1
Ring Ouzel	–	1	–	–
Blackbird	9	4	5	1
Song Thrush	–	1	2	–
Whitethroat	3	–	1	–
Chiffchaff	1	–	3	–
Willow Warbler	1	–	–	–
Spotted Flycatcher	–	–	1	–
Jackdaw	–	4	–	–
Carrion Crow	11	52	5	9
Raven	9	1	1	–
Starling	1	–	3	13
House Sparrow	11	–	4	16
Chaffinch	12	4	10	1
Goldfinch	2	–	4	–
Linnet	20	28	16	18
Total species per hour:	28	21	24	19
Total species per visit:	33		31	

Combined, these results give an idea of the range of species and numbers of birds that occur on Lundy in the winter months and, come spring, those that stay to breed (Water Rail, Wren, Dunnock, Robin, Blackbird, Carrion Crow, Raven, House Sparrow, Chaffinch) alongside summer visitors - in particular, Swallows, Wheatears, Whitethroats and Chiffchaffs from sub-Saharan Africa, Manx Shearwaters that winter in South Atlantic waters off Brazil and Argentina, Puffins which spend the winter out in the North Atlantic, and Lesser Black-backed Gulls, many of which winter along the Iberian coast.

Table 6: Summary of early and late breeding-season Timed Tetrad Visits in tetrad I
(**bold face**=species showing *any* evidence of breeding)

Species	Early season (24 May 2009)		Late season (20 June 2010)	
	Hour 1	Hour 2	Hour 1	Hour 2
Fulmar	19	2	20	19
Shag	5	7	13	9
Peregrine	1	–	–	–
Oystercatcher	3	2	4	1
Golden Plover	1	–	–	–
Lesser Black-backed Gull	16	33	55	21
Herring Gull	14	33	21	101
Great Black-backed Gull	25	6	30	36
Kittiwake	–	121	–	112
Guillemot	2	444	69	652
Razorbill	18	39	25	136
Woodpigeon	1	–	–	–
Swift	–	3	–	–
Skylark	15	13	1	11
Swallow	14	10	1	–
House Martin	6	–	–	–
Meadow Pipit	21	17	20	18
Rock Pipit	–	–	2	5
Pied Wagtail	1	–	–	–
Wren	11	1	7	2
Wheatear	1	4	4	13
Carrion Crow	5	–	2	–
Raven	3	1	–	–
Linnet	11	–	5	14
Total species per hour:	21	16	16	15
Total species per visit:	24		17	

CONCLUSION

It is important to point out that the Atlas method is a sampling survey aimed at developing snapshots of bird distribution and abundance at national, regional or county scale. The Atlas fieldwork carried out on Lundy is the island's contribution to this wider picture that will help guide national and regional conservation efforts.

It is evident from the first (1968-72) and second (1988-91) bird Atlases, and other BTO surveys since (notably the Breeding Birds Survey (BBS)), that significant declines have occurred in many bird species, especially farmland birds, as a result of agricultural intensification and habitat loss. While it is already evident from provisional maps produced for the Bird Atlas 2007-11 that some species - Buzzard and Raven for instance - have widened their range in Britain and Ireland, further declines in many other species are becoming apparent. As the numbers of Meadow Pipit, Skylark, Wheatear and House Sparrow continue to shrink nationally, strongholds like Lundy, where all four of these species maintain healthy populations, are becoming increasingly important.

Analysis of the completed Atlas fieldwork is now being carried out by the BTO, with publication of the single-volume Atlas expected in 2013. While the Atlas surveys on Lundy give an indication of the distribution and abundance (in three tetrads) - as well as

presence or absence - of the different bird species (in particular land-birds) across the island, they do not provide estimates of population size. Surveys of seabird population sizes are undertaken on Lundy every four years (the next census is due this year) and periodically (though irregularly) for land-birds, most recently in 2004 (Lock, 2005).

The 'Vision' for Lundy's terrestrial birds in the Lundy Island Conservation Management Plan (2011) states: 'The island will continue to support a varied and regionally important community of breeding, wintering and migrant birds', with the objective 'to maintain a range of suitable feeding and nesting niches for resident and migrant breeding birds on the island and to continue to encourage migrant birds to stopover, by maintaining suitable areas of woodland and scrub for food and shelter. Continue to encourage research into the island's birds'. One of the 'prescriptions' to achieve this is to 'carry out a breeding census of terrestrial birds on the island, giving priority to red and amber listed species'. This, combined with the 2012 seabird census and added to the findings of the Atlas fieldwork carried out between 2007 and 2011, will paint the most detailed picture ever of the size and distribution of Lundy's avian wildlife.

ACKNOWLEDGEMENTS

Thanks to Neil Trout for providing information on his Timed Tetrad Visits, and to the many contributors who submitted Roving Records to the BTO Atlas database either directly or indirectly via BirdTrack (the BTO's online bird recording system), the Devon County Recorder or the LFS Logbook on the island. The authors also thank Peter Robinson for his exhaustive work on verifying the Atlas records for Lundy, and Julia Harris, Devon Birds Database Manager, for providing additional details of several Roving Records. Dawn Balmer, National Coordinator of the Atlas, James Diamond of Natural England, and Hugh Boyd, a former LFS warden whose enthusiasm for Lundy and its bird life remains undimmed by the passage of years, very kindly commented on a draft of this paper.

FURTHER READING

- Brown, A., Price, D., Slader, P., Booker, H., Lock, L. & Deveney, D. 2011. Seabirds on Lundy: their current status, recent history and prospects for the restoration of a once-important bird area. *British Birds*, **104**: 139-158.
- Davis, T.J. & Jones, T.A. 2007. *The Birds of Lundy*. Berrynarbor, Devon: Devon Bird Watching & Preservation Society and Lundy Field Society.
- Gibbons, D.W., Reid, J.B. & Chapman, R.A. 1993. *The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991*. London: T. & A.D. Poyser.
- Lack, P.C. 1986. *The Atlas of Wintering Birds in Britain and Ireland*. Calton: T. & A.D. Poyser.
- Lock, L. 2005. The Breeding Land Birds Survey of Lundy 2004. *Annual Report of the Lundy Field Society 2004*, **54**: 51-62.
- Sharrock, J.T.R. 1976. *The Atlas of Breeding Birds in Britain and Ireland*. Berkhamsted: T. & A.D. Poyser.
- Sitters, H.P. 1988. *The Tetrad Atlas of the Breeding Birds of Devon*. Devon Bird Watching & Preservation Society, Yelverton.
- Wynn, R.B., Brereton, T.M., Jones, A.R. & Lewis, K.M. 2010. *SeaWatch SW Annual Report 2009*. National Oceanography Centre, Southampton, pp. 29-30.