

Breeding bird surveys at Lintzgarth in spring 2019

Conducted on behalf of the trustees of the Philip Wayre Uplands Trust

Purpose

Surveys of key species of ground-nesting birds at Lintzgarth Fell and Thornhope Moor in Weardale, Co. Durham were previously conducted in springs 2016 & 2017 (Baines 2017). These provided baseline estimates of the abundance of each species. The purpose of the 2019 Lintzgarth survey was to provide updated estimates of species abundance, to compare with the baseline estimates.

Methods

Survey methods followed those used in the 2016 & 2017 surveys, using a bespoke modified form of the technique that has become known as the Brown & Shepherd survey (Brown & Shepherd 1993). The survey was originally designed particularly for upland breeding waders (Charadriiformes), an important group on both sites in question.

The survey employs a constant search effort per unit area of ground and recommends that 20-25 minutes are spent in each 500 x 500 m grid cell on unenclosed moorland. Whilst constant search effort was maintained, due to the high density of birds present, time spent in each cell was not constrained to that specified, instead survey duration generally exceeded that stated. The observer followed a survey route throughout the sites so that all parts of the site were approached to within at least 100 m. At regular 100-200 m spaced intervals along the survey route, the observer scanned the area with binoculars, listened for songs or display calls and annotated the position of all birds onto a provided series of 1:10,000 maps. Accuracy of plotted bird positions was helped by using a hand-held Geographical Positioning System (GPS). All birds seen or heard whilst using each site were recorded. Birds seen flying over the site, but not necessarily using it, were not recorded.

Surveys were only conducted during weather of high visibility, i.e. no low cloud, no precipitation and when winds speeds were low.

The original method recommends that censuses are undertaken between 08.30 and 18.00, thus avoiding the main periods of rapidly changing bird activity, with waders (and other bird groups) exhibiting dawn and dusk peaks in activity. Instead, because surveys were confined to one site per day and each site could be covered during the recognised post-dawn period of peak bird activity, surveys were commenced at or shortly after dawn and were concluded by 09.30. Birds tend to change their behaviour during the breeding season and hence their detectability also changes. To encompass this variation, each site was surveyed on two occasions: an early visit (early-April to mid-May) and a later visit (mid-May to late- June). The expectation was that this would improve overall detectability. The first visit was timed to coincide with the peak of territorial activity, including display flights, amongst breeding waders. The second was timed to coincide with when most waders were expected to have dependent chicks and hence adults were alarm calling and most detectable to observers. In 2019, surveys were conducted on xx and xx May (first survey split over two dates due to bad weather during the first visit) and xx June.

Typically, Brown & Shepherd (1993) derive population estimates for each species using combined data from both visit maps. However they considered that wader pairs were separate from one-another only if at least 1000 m apart on the different visit maps. Given the high density of waders observed at these sites, adoption of this interpretation would be impractical, hence, for the purpose of reporting, overall species abundance was recorded as the number of individuals seen on each visit to each site. Within-site bird distribution and abundance was recorded as the number of sightings within each land unit, defined by the land parcel identification number on the Rural Payment Agencies' Rural Land Register (RLR) Map. Original site-survey maps for each visit have been retained by the observer, but are available on request.

Results

Survey results are expressed solely in tabular form (see Tables 1 - 3). Overall species abundance for each visit is provided in Table 1. A comparison of maximum species counts

with previous data from the 2016 & 2017 surveys is presented in Table 2. Breakdowns of abundance of gamebirds and waders in each year within each land unit are given in Table 3. Note that due to the values in Table 3 being the maximum number of individuals in each land unit from the two visits, the values from each land unit when summed need not agree with site totals specified within Tables 1 & 2. Any discrepancy is likely to be accounted for birds moving between land units between visits.

Waders: With the exception of lapwing, visit 1 saw fewer numbers of each species of wader than in visit 2 (Table 1). The complete absence of redshank and snipe in visit 1 was unexpected, based on results of the 2016/17 baseline. The higher number of birds seen in visit 2 was, however, largely predictable due to that visit being coincident with the adults having chicks and so being more detectable. Comparison of overall numbers of each species showed that all except snipe were fewer than in the baseline surveys (Table 2). This observation was not, however, exclusive to Lintzgarth; observations from other sites in Teesdale and Weardale suggested lower numbers of waders than may normally be expected. This may have been due to below average temperatures at an early stage of the breeding season leading to abandoned breeding attempts. Despite reduced number of birds seen, their distribution across the site was largely consistent with that seen in previous years (Table 3).

Gamebirds: As highlighted in the baseline survey report (Baines 2017), while the Brown & Shepherd survey method is not designed for game birds, the timing of the first survey coincided with peak activity of both red and black grouse, with male red grouse conducting territorial display flights, and male black grouse attending the lek. The absence of red grouse in visit 2 is likely due to their secretive behaviour associated with the presence of chicks, a behaviour that contrasts markedly with that of adult waders with chicks. In contrast to the baseline survey, neither visit recorded many female black grouse (only three in visit 1 and none in visit 2). Their absence in visit 2 may be explained by the visit coinciding with incubation but how representative visit 1 results are of the actual population on site may be verified by a post-breeding brood survey with pointing dogs in August (reported separately). Total numbers of both species of grouse were lower than in the baseline surveys. This result accords with wider population trends in other parts of the North Pennines which, for black grouse at least, may be attributed to three consecutive poor breeding seasons.

Lintzgarth and surrounding area remains notable for its grey partridge population. However, the likely local population size wasn't reflected from the survey results, methods of which are unsuited to the low flushing distances of the species. Instead, a dusk call-back survey was undertaken, which is reported separately.

Passerines: As in the previous surveys, meadow pipits, which were the most common bird, were not surveyed due to their high abundance. Skylark remained the second most common passerine after pipits, singing males comprising most registrations. Records of all other passerines should be noted as an indication of presence rather than absolute abundance.

Future surveys

Having established a baseline in 2016 & 2017, this year's survey has indicated lower numbers for most of the species for which Lintzgarth site management is targeted. However, these site trends seem to have been reflected more widely in the North Pennines, suggesting that bird abundance is being affected by off-site factors. However, it would be prudent to continue monitoring, through repeat surveys at a minimum of three-year intervals to determine future population trends. This frequency may need to be increased in the event of changes to site management which may affect the size of site populations.

References

- Baines, D. 2017. Breeding bird surveys at Lintzgarth and Thornhope in springs 2016 & 2017. Unpublished Report to Philip Wayre Wildlife Trust.
- Brown, A. F. & Shepherd, K.B. 1993. A method for censusing upland breeding waders. *Bird Study*, 40, 189-195.

David Baines, GWCT (June 2019)

Table 1. Bird species abundance (expressed as individuals seen) on each of two visits in spring 2019 (m = male, f = female).

Species	Visit 1	Visit 2
Greylag goose	13	0
Mallard	4	0
Barn owl	0	1
Red grouse	4	0
Black grouse	15m 3f	11m
Grey partridge	2	0
Pheasant	5	3
Curlew	37	56
Lapwing	30	25
Golden plover	4	11
Redshank	0	5
Snipe	0	10
Woodcock	1	0
Oystercatcher	4	4
Carrion crow	4	2
Wheatear	1	0
Skylark	16	32
Meadow pipit	Y	Y
Reed bunting	3	1

Table 2. Bird species abundance (expressed as maximum individuals seen) from two visits in 2016, 2017 (Baines 2017) and 2019 (m = male, f = female).

Species	Year		
	2016	2017	2019
Greylag goose	5	5	13
Mallard	2	9	4
Barn owl	0	0	1
Red grouse	9m 1f	6m 1f	4
Black grouse	19m 18f	17m 27f	15m 3f
Grey partridge	4	0	2
Pheasant	1f	1f	5
Curlew	62	78	56
Lapwing	38	40	30
Golden plover	15	18	11
Redshank	8	5	5
Snipe	6	7	10
Woodcock	0	3	1
Oystercatcher	6	11	4
Carrion crow	2	2	4
Rook	0	1	0
Jackdaw	12	3	0
Stock dove	0	1	0
Wheatear	2	0	1
Skylark	23	21	32
Meadow pipit	Y	Y	Y
Pied wagtail	1	0	0
Reed bunting	1	2	3

Table 3. Wader and gamebird species abundance broken down into numbered spatial land units (see Rural Land Register Map). Values are maximum numbers per unit across visits in 2016, 2017 (Baines 2017) and 2019.

	<u>1371</u>	<u>0232</u>	<u>1505</u>	<u>5242</u>	<u>1635</u>	<u>0406</u>	<u>2561</u>	<u>3961</u>	<u>4676</u>	<u>6374</u>
Red grouse										
2016	9	1	0	0	0	0	0	0	0	0
2017	6	0	2	0	0	0	0	0	0	0
2019	3	0	1	0	0	0	0	0	0	0
Black grouse										
2016	34	2	4	0	0	1	0	0	0	0
2017	36	3	4	0	0	1	0	0	0	0
2019	17	0	0	0	0	1	0	0	0	0
Grey partridge										
2016	0	0	0	0	0	2	2	0	2	0
2017	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	2	0	0	0	0
Curlew										
2016	46	6	1	4	1	1	1	2	0	0
2017	56	6	2	6	0	4	3	1	1	0
2019	43	2	2	2	2	3	4	2	2	0
Lapwing										
2016	8	8	2	6	10	1	3	6	2	0
2017	4	6	0	5	5	4	11	8	0	0
2019	5	8	0	10	8	2	4	4	1	0
Golden plover										
2016	12	1	2	1	0	0	0	0	0	0
2017	16	2	0	0	0	0	0	0	0	0
2019	11	0	0	0	0	0	0	0	0	0
Redshank										
2016	4	0	2	0	0	0	2	0	0	0
2017	4	1	0	0	1	0	1	0	0	0

2019	4	0	0	0	1	0	0	0	0	0
Snipe										
2016	1	2	1	0	1	0	2	0	0	0
2017	1	0	1	0	3	2	2	0	0	0
2019	3	0	0	1	3	2	1	0	0	0
Oystercatcher										
2016	0	4	0	0	2	0	2	0	0	1
2017	0	4	0	0	2	0	2	0	3	0
2019	0	2	0	0	2	0	0	2	0	0