

Cumbria Bird Club Rookery Survey: April 1996

Introduction

The rook is a familiar sight over much of agricultural Britain and, at a time when many farmland bird populations are in alarming decline, is actually increasing in many suitable areas. In Cumbria the rook is a very successful bird, especially in the north-western half of the county where grass pasture predominates. Very dry summers as well as very cold winters pose a threat to the rook as in both situations the availability of food decreases substantially with the hardness of the ground. It would seem that climate change (e.g. global warming) could be a cause of serious decline in rook numbers in the future. Changes in numbers and distribution also depend to a large extent on the changing agricultural scene, particularly where it affects the availability of earthworms which are a very important food item. A survey carried out in 1993 in the mainly agricultural county of Dumfriesshire indicated that the rook population was at a high level and was thought to be as much as 50% higher than at any time in the first sixty years of this century. This information coupled with the last major rook survey in Cumbria (1975) and the proposed BTO national sample-tetrad survey of 1996 prompted the Cumbria Bird Club to go ahead with the organisation of a full county survey in the Spring of 1996.



It is entirely due to the interest and dedication of a large number of volunteers that the survey was such a success and the organisers would like to thank everyone who participated.

Method

It is clear that much of the high ground of the central lakes and Pennines is totally unsuitable for rooks as these areas provide few nest sites and only meagre feeding. On the other hand there are large areas of the county where land usage creates a landscape very favourable to rooks. It was decided that we should ignore these assumptions and cover the whole county during the critical period between 6th and 20th April when it was hoped that most nests would be complete and that the foliage would not yet be dense enough to make accurate counting difficult. There are about 50 complete 10km squares in Cumbria and a further 44 with varying areas of land within the county boundary. The Cumbrian part of all 94 of these squares was surveyed regardless of habitat type and regardless of their assumed suitability or otherwise for rooks. A rookery, for the purposes of this survey, was deemed to be any group of nests (or indeed single nest) separated from another group by at least 100m. The use of this standard distance, the same as that used in the last national survey in 1975 and in the BTO's 1996 sample-tetrad survey, increases the validity of any comparisons made. Generally rooks are two or three years old before they breed, therefore the counting of nests alone is not a true indication of total population as this does not include the unknown number of non-breeding one or two-year old birds. However, numerous surveys of occupied nests over a long period of time have provided a good insight into the changing fortunes of this common farmland bird. Primarily, the objective of the survey was to ascertain the total number of rooks nesting in Cumbria but it was decided that other valuable information could be gleaned at the same time. With this in mind the fieldworkers were asked to provide an accurate grid location from which the altitude of the rookery could later be obtained and to record the dominant tree species in the woodlands used by rooks. Information on tree species was thought to be a very important factor in the survey bearing in mind the loss or fragmentation of many of the larger tracts of deciduous woodland this century coupled with findings in the Dumfriesshire survey that showed coniferous trees, especially scots pine, held a significant number of rookeries.

Results: *Density of occupation*

Ninety-four 10km squares gives a total of 2350 tetrads (94 x 25) however, after consultation of the relevant maps, it was found that only 1766 of these tetrads have significant land area in Cumbria. The survey shows that of these 1766 tetrads 653 (37%) were occupied by rooks. In total 44738 nests were counted in 1325 rookeries giving an average rookery size of 34 nests. **Figure 1** shows the number of nests and rookeries found in each 10km square and **Table 1** compares these totals with the 1975 data.

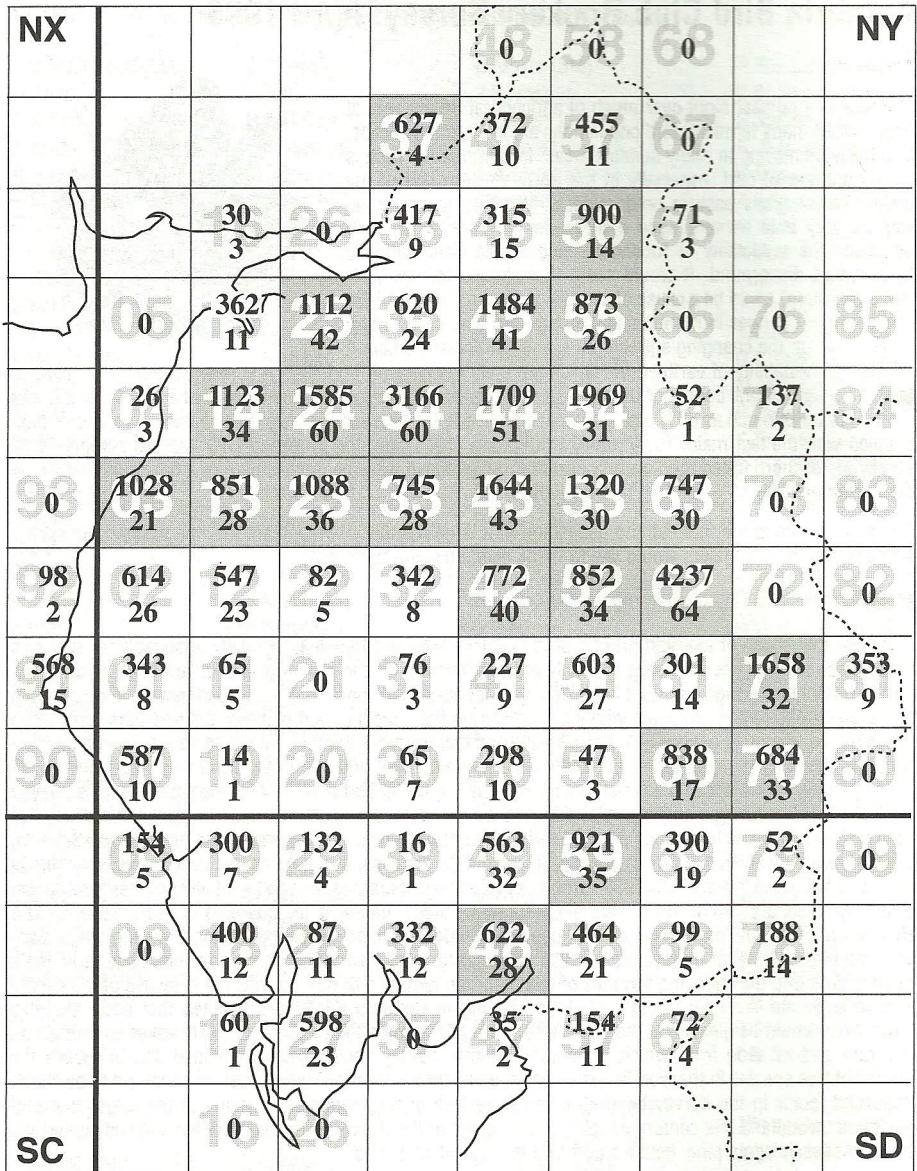


Figure 1: Number of nests (upper figure) and rookeries (lower figure) in each 10km square. Shading shows squares with above average (621 nests/occupied square) density.

Table 1: Comparison of total nests and rookeries found in the 1975 and 1996 surveys

Survey date	Number of rookeries	Number of nests	Average nests per rookery
1975*	894	32755	37
1996	1325	44738	34
difference	+431(+48%)	+11983 (+37%)	-3 (-8%)

* Cumberland and Westmorland

It will be seen from Table 1 that although there are more nests in more rookeries in 1996, the average size is down by 8%. This small reduction in rookery size may reflect a threat to rooks posed by the felling and fragmentation of woodland and could indicate that although the nesting population has increased it may, in future, be constrained as much by the availability of nest-sites as by the other factors drastically affecting farmland birds. The average number of nests in each (occupied) 10km square was 621. In Figure 1 the 10km squares where the number of nests found was greater than this average are shaded. This illustrates the bias in density of occupation and shows that the rook's stronghold is, perhaps unsurprisingly, the northern half of the county, with above average occupation also found in the south-east along the valleys of the rivers Kent, Lune and upper Eden.

Where a comparison can be made (bearing in mind that the 1975 survey covered only 64 of the total of 94 Cumbrian 10km squares.) it was found that 18 10km squares (28%) showed a significant decrease in nests recorded. Of these, six were in the south of the county (SD09, 39, 69, 28, 38 and 58); four straddling the Eden Valley (NY52, 53, 61 and 64); three in the west (NX92, NY11 and 13) and five in the north (NY15, 35, 36, 37 and 46). Forty 10km squares (63%) showed an increase of 10% or more in occupation, ten of which were up by 100% or more. Six 10km squares (9%) were more or less the same in both surveys. When the difference in the density of occupation between the 1975 and 1996 surveys is mapped, it can be seen that, broadly speaking, the county falls into three areas. The north-west has fared quite well, especially from the foothills of the fells down to the Solway Plain, with significant losses only around Moricambe Bay (NY15) and the loss of one large rookery in NX92. The south is a more complex picture, with the main losses being to the north-east of the Furness Peninsula (SD28, 38 and 39) and to the south and east of Kendal (SD58, 69). The area of most concern in the county as a whole is along the Eden Valley and down to the Solway, in particular NY52, 53, 54, 55, 64 and 74, where rooks have decreased or are, at best, just about holding their own. There is no discernible reason for this fall in occupation in such an apparently suitable area. **Figure 2** shows the percentage change from the 1975 survey in number of nests per 10km square.

Rookery size

The present survey found 367 rookeries (28%) containing ten or fewer nests and, of these, 17 were single nests. At the other end of the size scale only 190 rookeries (14%) held over sixty nests (see Table 2)

Table 2 Rookery size

Number of rookeries	Number of nests	% of total (1325)
1 to 60	1135	86
61 to 120	145	11
121 to 180	29	2
180+	16	1

