

POTTERIC CARR NESTBOX MONITORING SCHEME



Description of the Scheme

The nestbox monitoring scheme at Potteric Carr has been carried out every year since 1992. The data obtained is contributed to the national Nest Record Scheme which has been organised by the British Trust for Ornithology for over 70 years (see below) and from data largely gathered by volunteers over the whole of the country.

The scheme has built up a massive database of information about a wide range of birds and their nesting habits, including egg sizes, clutch sizes, nesting times, fledging rates, predation and much more. The data from the scheme is used in the BTO's "Bird Facts" website www.bto.org/birdfacts/

At Potteric Carr, the scheme concerns a number of nestboxes, used primarily by Great Tit *Parus major* and Blue Tit, *Cyanistes caeruleus*, in a largely undisturbed part of the Reserve to which access by the general public is restricted. Since its inception, around 30 nestboxes have been monitored each year. However, it isn't possible to compare the results over the whole period of the study since the number and positions of the nestboxes has changed over time as some have rotted, the trees supporting them have fallen or

the boxes have been destroyed (sometimes by woodpeckers!). It has generally been possible to compare one year with the next when the same boxes have been used. Unfortunately, with the addition of numerous nestboxes in other parts of the Reserve in 2009, giving more nesting opportunities, it is more difficult to assess the effect of nestboxes in this scheme.

Carrying Out the Survey

Early in the year, the nestboxes are inspected and cleaned out and any renovations/replacements made prior to the anticipated first nesting date (usually April). Visits are made at intervals during the spring and early summer. It is important that these are kept to the minimum necessary to limit disturbance but to ensure sufficient data is obtained, i.e. first egg laying dates, clutch size and hatching and fledging success. Regular visits will not only endanger the nests themselves and may even cause the birds to desert, but may result in the outcomes being biased.

On the last visit after the end of the season, the old nest and any contents are removed from the box leaving it clean. Some boxes are used as winter roosts and some occasionally remain as roosts.



Comparison of the nests and eggs of Blue Tit (left) and Great Tit (right) © John Lintin Smith

THE BTO NEST RECORD SCHEME

The Nest Record Scheme (NRS) gathers vital information on the productivity of the UK's birds, using simple, standardised techniques.

NRS data are analysed annually and the results are published in the 'Breeding Birds in the Wider Countryside' report along with information on species' abundance obtained through other BTO monitoring schemes. Nest record data are also used to investigate the causes of species-specific trends in breeding success.

A population size of a species is dependent on survival rates, movements of individuals and levels of productiv-

ity. The NRS is able to provide the vital evidence needed to confirm whether a species in decline is encountering problems at the nesting stage

Nest recording is one of the BTO projects which is accessible to everyone. It provides an ideal opportunity to participate in the conservation of Britain's birds. Of paramount importance, however, is the maxim that "**the bird comes first**" and anyone taking part must follow this implicitly. For further details go to:-

www.bto.org/survey/nest_records/index.htm

RESULTS FROM THE 2009 SEASON

Introduction

During 2009, the long running study into the nest-boxes at Loversall Bank, Loversall Delph and Young Eaa, was continued. It is recognised that, due to the installation of many additional nestboxes around the site, the level of monitoring of these being unknown, this may have had an effect on the take-up of the nest-boxes in the study area.

All the nestbox records relate to Blue Tits and Great Tits, though Wrens *Troglodytes troglodytes* and Treecreepers *Certhia familiaris* have been recorded when using the boxes.

On a final visit after the season, the old nests and any contents were removed from the box leaving them clean. Prior to the start of the new breeding season the boxes were again checked and cleaned and in some cases relocated to provide easier access for the recorder. They were then ready for occupation. Some boxes had been used as winter roosts and some continued to be used in this way.

Where a complete nest was found and a cup formed, it is assumed that this was built by a single pair which defended the site and deterred others from staking a claim to it, particularly in the two multi-compartment boxes.

and C but they had a common lid for access for monitoring by the recorder. The results from these boxes were as follows:-

- 14A contained a complete nest but never contained eggs.
- 14B contained a first stage wasp (*Vespula sp.*) nest which was removed for safety reasons.
- 14C a pair of Great Tits fledged five young; this could have been more but the nest was attacked by a Stoat *Mustela erminea* which predated a number of young. The Stoat was able to gain access because the rough bark of the poplar tree, where the box had been erected, provided good claw holds.
- 15A contained a complete nest but, as with 14A, it was not developed.
- 15B a pair of Blue Tits fledged four young.
- 15C had a colony of bumblebees *Bombus sp.*

When box 15 was checked for the first time, it wasn't until the lid was lifted that the colony of bees was found. The bees were not impressed by the intrusion so the lid was carefully closed to enable the situation to be considered. Since it was necessary to monitor the compartment with the Blue Tit nest, a thin section of board was made to slide over the compartment containing the bee colony before the lid was fully lifted. It worked

well enough, though a number of bees did find a small gap. On one visit up to 27 dead or dying bees were counted below or close to the box.

It is considered that these boxes are most unsuitable since they will always have various occupants at any one time that may conflict. It is recommended that they be replaced with traditional boxes.

Though only 14 of the 38 breeding sites were occupied just one failed (Blue Tit) and in comparison with 2008, when 19 boxes were occupied, two more young fledged from fewer eggs. The Wren, which nested under a

hide, was successful this year as it remained free from human interference.

Conclusions

One possible reason for fewer nestboxes being occupied in the study area is that the tits are dispersing over a wider area since they now have a greater choice from a larger number of nestboxes outside this scheme. To prove this, however, it would be necessary for all the additional boxes to be monitored over time, to determine the complete breeding history of these boxes from the first egg to failure or successful fledging of young.

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Nestbox	Species	Eggs Laid	Eggs Hatched	Eggs Failed	Young Fledged	Failed Young	Results and comments
LB5	Blue Tit	10	10	-	10	-	10 chicks fledged
LB6	Great Tit	6	6	-	6	-	6 chicks fledged
LB7	Great Tit	5	5	-	5	-	5 chicks fledged
LB10	Great Tit	6	-	6	-	-	eggs deserted
LB13	Blue Tit	10	9	1	9	-	9 chicks fledged
LB14 C	Blue Tit	7	7	-	5	2	5 fledged 2 predated by Stoat
LB15 B	Blue Tit	9	9	-	4	5	4 fledged remains of 2 small chicks in nest material
LD1	Blue Tit	9	7	2	5	2	5 chicks fledged
LD3	Great Tit	10	10	-	10	-	10 chicks fledged
LD4	Great Tit	16	10	6	7	3	7 chicks fledged
W5	Blue Tit	13	13	-	9	4	9 chicks fledged
W8	Blue Tit	9	9	-	7	2	7 chicks fledged remains of 2 small chicks
W9	Great Tit	7	7	-	7	-	7 chicks fledged
W10	Great Tit	6	6	-	6	-	6 chicks fledged
Totals	14	123	108	15	90	18	Note: Of the 38 nesting opportunities from the 34 boxes, 27 boxes were occupied and 11 boxes were unoccupied.
2008 results		138	120	18	88	32	

Table 1: Overall Results by Nestbox

Species	Pairs		Eggs laid		Eggs hatched		Young fledged		Fledging success rate			
									from eggs laid		from eggs hatched	
	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008
Blue tit	7	8	67	73	64	65	49	41	73.13%	56.16%	76.56%	63.08%
Great tit	7	11	56	65	44	55	41	47	73.21%	72.31%	93.18%	85.45%
Totals	14	19	123	138	108	120	90	88	73.17%	63.77%	83.33%	73.33%

Table 2: Overall results by species

Discussion

It should be noted that extra boxes were erected during 2009 but of the total of 34, only 14 were occupied. There were actually 38 opportunities for birds to take up residence as two new boxes were divided each into three compartments offering multi-occupation (maybe for communal-nesting birds, e.g. sparrows). The table above shows the outcome of the occupied boxes during the season.

The multi-compartment boxes (14 and 15) created problems, both for the occupants and also the observer. The compartments in each box are referred to as A, B