

Introduction

Welcome to the 'Barn Owl *Bulletin*', a new publication designed to provide information about the Barn Owl Monitoring Programme (BOMP). The Programme has been set up with the aim: ***To monitor Barn Owl populations through standardised recording of nest occupancy rates, breeding performance and survival at a set of nest sites broadly representative of the distribution of the species in Britain.***

We are absolutely delighted with the response we have had so far, an indication of the level of interest that there is for Barn Owls in the UK. The Programme is already proving to be very useful in gathering data from individual nestbox studies to a recognised and useable standard.

This newsletter is intended for the observers involved with the Programme, but we hope that it will also be of interest to other people concerned with Barn Owls and their conservation.



Photograph: G H Higginbotham

Thanks

We would like to thank all of the Barn Owl observers who are taking part in BOMP. Without their work and enthusiasm, this Programme would not be possible. Special mention must be made of Colin and Val Shawyer for their tremendous input into the Programme, and Major Nigel Lewis for his contribution to the monitoring of core sites. We are grateful to Jason Ball, National Coordinator with the Hawk & Owl Trust's 'Barn Owl Conservation Network' for encouraging Network Advisers to contribute to BOMP. Thanks also to the Barn Owl Trust for keeping us up to date with their activities. Finally we must mention our already overloaded Secretary, Angela Rickard, who has produced most of the map/forms for the Programme.

Peter Beaven, Barn Owl Monitoring Programme Coordinator

Notices

"Do I still need to fill in Nest Record Cards?"

The Barn Owl Monitoring Programme is being run as an extension of the BTO Nest Record Scheme. In order to reduce the amount of paperwork it has been decided that it is no longer necessary for observers to fill in Nest Record Cards for any registered BOMP sites. Checks will be made on existing data to avoid any duplication. But please note that we still welcome Nest Record Cards for any non-BOMP Barn Owl nests. If you need a supply of cards, please don't hesitate to ask.

Email addresses

Communication by letter is slow and expensive, and email is now the most efficient method by which we can contact you, answer your queries, receive your suggestions and inform you about all aspects of BOMP. (If you have a new email address but have not yet informed us, please send an email to barnowls@bto.org).

Why do we need BOMP?: The Conservation Status of Barn Owls in the UK

The current status of the Barn Owl in Britain

The Barn Owl is currently included on the Birds of Conservation Concern 'Amber' List. This is because its numbers have decreased by more than 25% over the past 25 years, and because Barn Owls also have had an unfavourable conservation status in Europe. A Conservation Action Plan has been developed for Barn Owls in the UK (RSPB Species Action Plan 0735). A number of local Biodiversity Action Plans, and a great deal of conservation work have also focused on this species.

The recent history of the British Barn Owl population

The first Barn Owl survey to take place in the UK was organised by George Blaker, who collated sightings from England and Wales in 1932. This was one of the first national surveys of a wild bird population. Using these data, Blaker estimated that the total population in England and Wales stood at approximately 12,000 breeding pairs. While this figure may seem large today, at the time it represented a substantial fall in numbers for a species that was, during the 18th and early 19th centuries, considered to be the commonest British owl. Suggested causes of the decline up to the 1940s included persecution by gamekeepers, hunting to obtain specimens for taxidermy, feathers for ladies' hats and even fire screens.

The decline continued throughout the 1950s and 1960s and potentially accelerated. The first Breeding Bird Atlas (produced in 1976) suggested that numbers had fallen to between 4,500 and 9,000 pairs, a particularly alarming figure considering that the Atlas covered not just England and Wales but the whole of the UK. By this time, the nature of the threats faced by the UK Barn Owl population had changed. Loss of hunting and nesting habitat, secondary poisoning by organo-chlorine pesticides, increased disturbance and the harsh winters of 1946/47 and 1962/63 may all have contributed to the decrease in numbers observed during the middle of the 20th century.

A survey of Britain and Ireland undertaken by Colin Shawyer for the Hawk Trust between 1982 and 1985 estimated the size of the Barn Owl population of England, Scotland and Wales to be approximately 4,500 pairs. This suggested that, in England, numbers of Barn Owls had fallen by around 70% since Blaker's survey 50 years earlier. However the two surveys used very different methods, so they may not be directly comparable. During the second half of the 20th century, there has been some debate

as to whether the increased use of 'second generation' rodenticides and the larger volume of traffic on roads may have contributed to higher rates of mortality, thereby maintaining the decline of the species.

Project Barn Owl

Despite the relatively high level of conservation interest and effort directed at the species, initiatives have, in the past, been hampered by a lack of up-to-date data concerning population sizes and trends. Between 1994 and 1997 the BTO and the Hawk & Owl Trust organised *Project Barn Owl*. The main aim of the Project was to produce a baseline figure for the number of breeding pairs in the UK using a statistically robust and repeatable methodology. It was realised that this would enable future changes in the size of the population to be monitored efficiently and accurately.

Project Barn Owl produced an estimate for the UK breeding population of approximately 4,000 pairs. It is possible that the rate of population decrease may have slowed towards the end of the century, perhaps due to the efforts of conservation bodies and volunteers, but further analysis will be necessary if this is to be verified.

The Barn Owl Monitoring Programme

Project Barn Owl highlighted the need for an annual monitoring programme for Barn Owls. It was realised that it was important to ensure that future population trends did not go undetected. We also needed to identify any responses to conservation initiatives that were being implemented. Although Barn Owls do hunt during the daytime (especially during the breeding season), they are primarily nocturnal and therefore are poorly monitored by other BTO monitoring schemes, such as the Breeding Birds Survey and the Common Birds Census.

The BTO Barn Owl Monitoring Programme is generously sponsored by the Sheepdrove Trust

'Barn Owl *Bulletin*' edited by Peter Beaven and Dave Leech
Typeset by Angela Rickard.

Articles for inclusion in future issues of 'Barn Owl *Bulletin*' should be sent by email to barnowls@bto.org or by post to:
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Due to the biology and behaviour of the species, the best method of monitoring Barn Owls is to survey nest sites, using site occupancy rates to produce estimates for the size of the breeding population. Furthermore, visiting nests allows observers to collect data concerning the productivity of nesting attempts, and to ring the chicks and often the adults, thereby allowing survival rates to be estimated. In this way, it is possible not only to estimate population trends, but also to identify the causes of the changes in Barn Owl abundance, for example reduced clutch sizes or decreases in the survival rates of first year birds. Identification of such mechanisms may, in turn, increase the likelihood of discovering the specific factors that are responsible for increases or decreases in the population size.

BOMP coverage - volunteer participation continues to increase

We certainly weren't prepared for the size of this response, but we're delighted with the level of interest that the Programme has generated. At the time of going to press, a total of 664 Barn Owl nest sites are being monitored for the Programme. This is an amazing number considering that the UK Barn Owl population is estimated to be around 4,000 pairs (see page 2). With so many sites being monitored, we will be able to gather data on occupancy, productivity and survival at sites all over the UK. This will create an invaluable dataset on which future conservation initiatives can be based.

How can I contribute to BOMP?

We are always on the lookout for new volunteers to increase the number of Barn Owl sites monitored under BOMP. **We are particularly interested in sites that can be monitored during successive breeding seasons, hence our emphasis on nestbox sites.** Figure 1 shows the distribution of sites being monitored. We would be very pleased to hear from any volunteers who may be able to fill any gaps, particularly in Wales and Northern Ireland. But even if your region appears to be well represented, we would still like to hear from you.

Finding and assessing the contents of potential nest sites

The first step to participating in BOMP has been to identify potential nest sites. Barn Owls nest in natural cavities in trees and farm buildings, and readily use nestboxes. One of the best ways to ascertain if a site is in use is to perform a site watch during the breeding season (please obtain landowners permission first!). Previous fieldwork performed during *Project Barn Owl* has shown that Barn Owls are most active during the period one hour either side of sunset, although this may not be the case if weather conditions are poor. Winter searches of likely sites might also be worth carrying out to look for evidence of previous nesting attempts, shredded pellets, down etc.

It is often possible to tell what is happening in a nest by observing the adult birds travelling to and from the site. The male and female can normally be differentiated by noting the amount of speckling on the breast, head and underside of the wings: males usually have much less speckling than females, although it may take time to get your eye in (and some females appear relatively unspeckled). Details of this technique are given in the BOMP Guidance Notes that are sent out to the observers

when registering for the Programme. If the nest contains eggs, the male will bring food to the incubating female. At nests containing chicks, however, both parents will be seen provisioning the offspring. In addition, as the chicks get older, their begging calls (a low hissing sound) will become more audible, especially when the adults enter the nest.

Gathering information using a non-invasive technique such as this is obviously preferable to disturbing the birds at the nest. A cold search of the site should only be performed if there has been no evidence of activity during several successive site watches.

It is very important to note that visits to a nest site known to be occupied can only be made after a Schedule 1 Licence has been obtained.

Whilst we realise that there is likely to be a turnover at some BOMP sites over time, we would encourage observers to try to ensure continuous annual coverage wherever possible. If you find yourself unable to monitor a particular site (perhaps through work commitments or because of a house move), please contact us. We will try to find someone to assist you, or in certain circumstances, to take over the monitoring of the BOMP site.

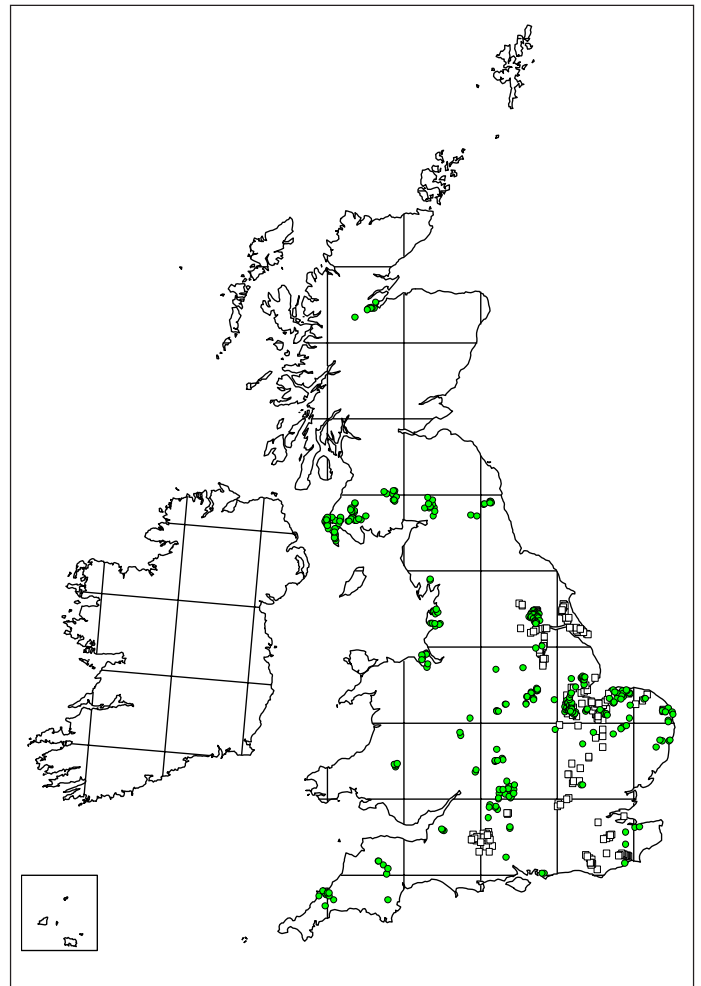


Figure 1. The Barn Owl nest sites being monitored as part of the programme (as at June 2002). White squares = sites being covered by Wildlife Conservation Partnership (total 254 sites). Shaded circles = sites being covered by volunteer observers (total 353 sites).

Survey coverage in 2001 – defeating the odds

Despite limited coverage being carried out due to the Foot & Mouth access restrictions, here are the results for the 2001 season. The information currently being gathered from the 2002 season will follow in the next issue of 'Barn Owl Bulletin'.

Few readers will be unaware of the general havoc wreaked by the 2001 Foot and Mouth Disease outbreak, or more precisely, the access restrictions imposed to prevent the disease from spreading. Many BTO monitoring schemes were affected, and BOMP was no exception. However, due to the determined efforts of our fieldworkers and help from landowners, a total of 292 monitoring visits were made at 168 different sites in 2001, an incredible achievement considering the obstacles faced.

Figure 2 shows that nearly half of the sites surveyed for BOMP during 2001 were located in areas of arable land, with areas of pasture, mixed farming and 'other' habitat categories (mostly rural sites) accounting for the majority of the remaining data. Because of access restrictions to mixed and stock farming areas, the relative contributions of arable and rural areas to the dataset was increased. Survey coverage from 2002 onwards is therefore expected to include a much larger proportion of sites on which livestock are present.

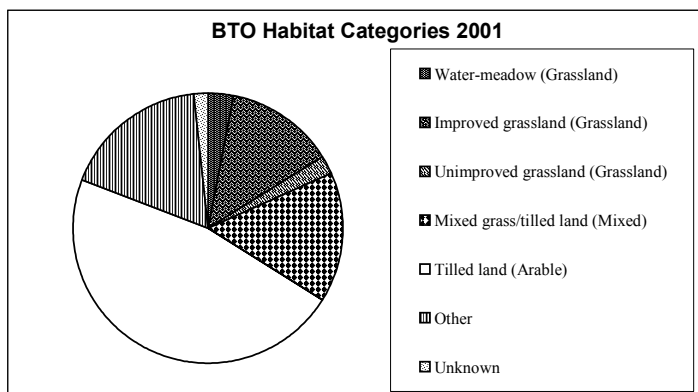


Figure 2. BTO habitat categories for the 168 sites monitored by BOMP in 2001

Survey results for 2001 – A Poor Year for Barn Owls

Nest site occupancy rates

Data collected by BOMP fieldworkers suggested that 2001 was not a good year for the UK's Barn Owl population. At core sites, 61% of nests were occupied during 2001 compared with a figure of 83% during the pilot year of the study in 2000. This decrease may have been due to the heavy rains and subsequent flooding experienced over much of the country during the autumn of 2000. This could have reduced the population size of the small mammal species that form the majority of the Barn Owl diet. If this was the case, food shortages experienced over the following winter may have led to increased rates of Barn Owl mortality. In addition, individuals that did survive the winter may have been in relatively poor condition, and therefore may not have attempted to breed.

The results from 2000 and 2001 indicated that nest occupancy rates were higher in arable areas than they were in areas of mixed or stock farming (Figures 3a and 3b).

Fields planted with crops may provide a better habitat for small mammal prey species such as mice and voles than that offered by the closely cropped sward of intensively grazed pasture. In addition, field margins in arable areas may be wider than those in pastoral areas, which may be grazed right up to the field boundary. Such field margins often comprise of rough grassland, which again may provide a more suitable habitat for small mammal species. The degree of landscape fragmentation may also differ between pastoral and arable habitats, which may in turn influence small mammal abundance. Alternatively, differences between arable and pastoral areas in terms of nest site density, the level of disturbance by man or the amount of habitat management performed may explain the observed occupancy patterns.

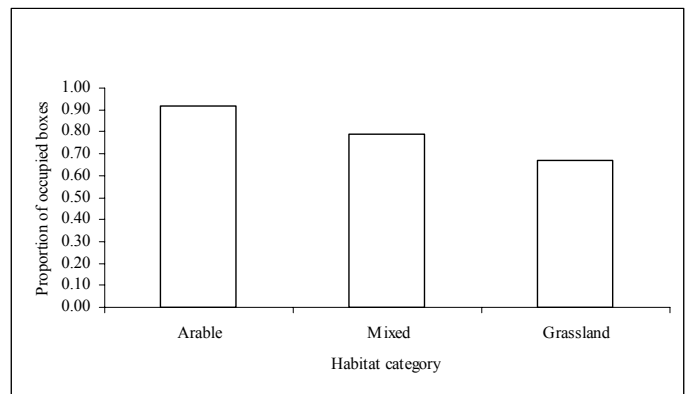


Figure 3a. Occupancy rates in arable, mixed and grassland areas during the BOMP 2000 pilot year.

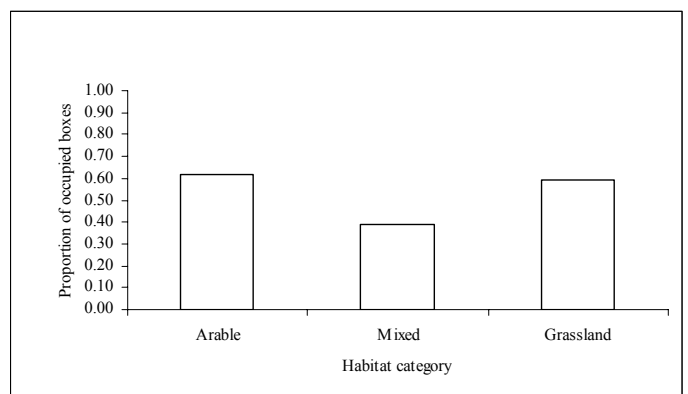


Figure 3b. Occupancy rates in arable, mixed and grassland areas during the BOMP 2001 survey.

The analysis also indicated that occupancy rates varied significantly between the three designs of nestbox used in the study (Pole boxes, A-frame boxes and square boxes), although this relationship was most probably due to regional biases in the location of the different box types.

It is interesting to note that although fewer nest sites were occupied by Barn Owls during the 2001 season, 70 boxes were occupied by breeding pairs of other species (including 31 occupied by Stock Doves, 18 by Jackdaws and 17 by Kestrels) compared to a total of 24 boxes during the pilot year in 2000. It is possible that the increase in the number of boxes utilised by these species reflects a response to the reduction in Barn Owl occupancy rates during 2001. However, in the case of Jackdaws (which occupy boxes earlier than Barn Owls and fill them up with sticks) the increase in numbers could have caused, rather than resulted from, the decrease in Barn Owl occupancy rates.

Nest productivity

Whilst the number of pairs that attempt to breed gives one measure of Barn Owl breeding success, the productivity of the breeding attempts will also influence the number of offspring produced by the population as a whole. Therefore BOMP data can be used to calculate several measures of Barn Owl breeding productivity. The simplest measures of reproductive success are **clutch size** and **brood size**. **Hatching success** (the proportion of the clutch that hatches irrespective of the survival of the chicks which they produce), **fledging success** (the proportion of the brood that survives to fledge) and **overall nest success** (the proportion of the clutch that produced chicks which then survive to fledge) can also be calculated. Finally, each nest in which at least one egg was laid is allocated a **success code**. All nests which fledged at least one chick are deemed to be successful, and are allocated a success code of 1, whereas those nests in which at least one egg was laid but from which no offspring fledged are deemed unsuccessful, and allocated a success code of 0.

Egg weight, length and width were also measured at a number of nests. If food is scarce during the laying period, the female may be in poor condition when producing the clutch. If this is the case, some eggs, particularly those produced towards the end of the laying sequence, may be smaller than the rest of the clutch. Any variation in egg size between the eggs in a clutch may therefore give an indication of the condition of the female producing them.

Although clutch sizes were noticeably higher, and hatching success notably reduced during the 2001 season (Figure 4), none of the measures of productivity differed significantly between the

two study years. These data indicate that, although the number of individuals attempting to breed decreased in 2001, the mean productivity of the breeding attempts that did occur was no lower than it had been during the BOMP pilot year in 2000.

None of the productivity measurements differed significantly between habitat categories. The output productivity of nests located on arable land was no higher or lower than that of nests located in mixed or in stock farming areas. As was the case with occupancy rates, nest productivity was significantly correlated to the type of box in which the pair bred, but this relationship is probably due to regional biases in the distribution of the different box designs and not to any aspect of the box itself.

Egg size was no more variable within a clutch in 2001 than it had been in 2000, suggesting that the condition of laying females did not differ between the two breeding seasons. Eggs in nests located in arable areas did not show greater size variation than those eggs located in mixed farming or in stock areas, indicating that the condition of laying females did not differ between habitats either.

Prey items found in nests

A wide variety of prey items were found in nestboxes in both study years. The mean number of prey items per box did not differ significantly between years. However, the species composition of these items did differ. During 2000, 94% of the items found were small mammals. During 2001, however, the proportion of small mammals fell to 73%, with bird species accounting for the majority of the remaining 27%. Although the sample size is very small, these observations suggest that flooding during the autumn of 2000 might have reduced numbers of small mammals, and that Barn Owls had resorted to other food sources in order to compensate for this reduction.

Although the number and composition of prey items was similar across all habitats, the mean weight of items stored in boxes in arable areas was significantly greater than that of prey items stored in boxes in mixed or stock farming areas. This finding may suggest that, as previously predicted from the occupancy rate data, arable areas could indeed provide better hunting opportunities for Barn Owls than are available in more pastoral habitats, although again the sample size is very small.

Productivity measurement	BOMP 2000 pilot	BOMP 2001
Mean clutch size (eggs)	4.00	4.46
Mean brood size (chicks)	3.13	3.07
Mean hatching success (proportion eggs hatched)	0.68	0.56
Mean fledging success (proportion chicks fledged)	0.73	0.75
Mean overall success (proportion eggs producing fledged chicks)	0.47	0.48
Mean success code (proportion broods producing fledglings)	0.81	0.88

Figure 4. Mean BOMP productivity measures for the 2000 pilot year and the 2001 season.

Breeding phenology

At some BOMP sites, variation in the seasonal timing of breeding attempts, as measured by the date on which the first egg in the clutch hatched, was investigated. As relatively few visits are made to each nest during the breeding season, the probability of an observer visiting the nest on the day that the first egg hatches is very low. However, hatching dates can be calculated indirectly from chick age, determined by measuring the length of the feather or the pin of the 7th primary and relating it to a standard growth curve. Once the hatching date has been determined, subtracting a further thirty days gives a good estimate of the

laying date.

Egg density, which can also be used to determine the time of hatching, was measured at 53 sites during the 2001 study season, and chick primary length was measured at 161 sites. Mean hatching date was neither significantly earlier nor significantly later in 2001 than it had been in 2000. It also did not vary significantly between arable and stock farming areas and was similar for pairs breeding in all nestbox designs, irrespective of the method (*i.e.* using egg or chick measurements to calculate hatching date).

BOMP core sites

Colin Shawyer of the Wildlife Conservation Partnership (WCP) reports on the development of the core monitoring sites and data recording methods.

In order to compare occupancy rates, clutch size and fledging success to evaluate any changes occurring in the UK Barn Owl population, it has been necessary to develop a standardised method of recording at a set of core nest sites. These sites will last for at least ten years and should not vary over time or between regions.

By the end of 2000, I had installed a large number of nestboxes in England, selecting sites that were broadly representative of the distribution of the Barn Owl population reported in 1987. These boxes were of two specific type: a box for mounting on poles and an 'A' frame box, designed for the trunks of trees. These two box designs, which I believe offer near optimal artificial breeding sites for Barn Owls, were the result of 15 years of research and continuous development. Barn Owls using pole boxes have produced clutches of 10, 12 and even 14, as well as large broods of up to eight chicks on occasions. In the 'A' frame boxes, broods of seven, eight and this year, nine young, have been ringed close to fledging.

From the large number of boxes I had installed, I was able to select a sample of 15 pole box sites and 10 'A' frame box sites in each of five regions of England, in order to provide the core sites for BOMP. Of these boxes, 75% had been used for breeding in the past, 15% for occasional roosting only and 10% had never been occupied. WCP will monitor these sites every year in order to provide data on occupancy, breeding productivity, survival rates and dispersal of adult and juvenile Barn Owls. This information will allow us to estimate any changes in the Barn Owl population over time, and to evaluate which elements in the birds' life cycle were likely to be influencing change.

Visits are carefully timed to record data on occupancy, clutch size and late brood size (potential fledging success) and in such a way that both adults and their young can be measured and ringed. Visits are kept to a minimum to reduce disturbance and to allow the programme to be cost efficient, especially since the sites were scattered widely across all regions of England, requiring large amounts of time and travel.

Because Barn Owls have a prolonged breeding season, and laying dates between pairs are usually remarkably consistent in any one year, it is possible to collect all of this information with just two well-timed visits to each site. This is the protocol being used for the 254 core sites WCP is monitoring for this programme.

Much more information is obtained at these and other sites that I monitor. Adults are weighed and subtle variations in wing feather and wing markings are used to determine their age. Brood patches and underbody spotting are also scored. The lengths of moulted primary and secondary feathers, which are shed by the female and accumulate in the boxes, are measured in order to determine the actual feather which has been moulted and hence the age of the moulting individual, even in the bird's absence. The wings of bird prey and any whole prey (usually small mammals) are identified, counted and weighed on an electronic balance.

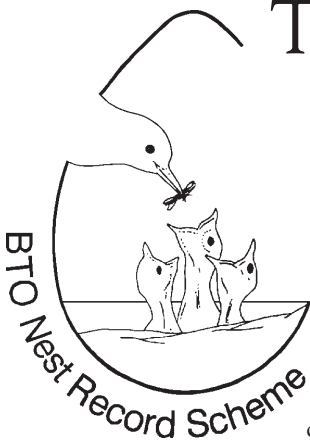
The young Barn Owls are ringed, sexed and weighed and their ages determined. This is achieved at the early stage from wing cord length. A little later this is done from the length of the pin of primary 7, and finally by the amount that this primary has unfurled. Laying dates can also be back-calculated after ageing each juvenile. Even when young are found dead in the nest (sometimes from a previous breeding season) their approximate age can still be determined.

Since the start of this programme in 2000, I have undertaken a large number of egg density measurements from scores of clutches, in an attempt to determine lengths of incubation and hence the age of individual eggs.

This procedure, which involves the use of an electronic balance and digital callipers, allows us the potential to deduce laying dates. It also provides information as to when it is best to time the next visit to the nest. WCP is currently evaluating this procedure to determine if it has any negative influence on breeding success, how accurate it is for deducing age and whether it is of value to the Programme in the future. In subsequent newsletters, I hope to describe in more detail other techniques for collecting data that are currently being refined.



Barn Owls and the Nest Record Scheme



The BTO Nest Record Scheme (NRS) was established in 1939 with the aim of monitoring changes in the success and productivity of nesting attempts for Britain's breeding bird species. It is the oldest and largest such scheme in the world. 35,000 Nest Record Cards for 180-190 species (including Barn Owl) are currently received by the BTO each year. By regularly visiting a nest site, volunteers are able to collect data to determine the **first egg date** (the date on which the clutch was

initiated), as well as recording **the size of the clutch** and **the brood**. Using the last two measurements, an estimate of **hatching success** can be obtained. As each nest is visited on multiple occasions, using the number of eggs/nestlings and the date recorded at each visit, it is also possible to calculate **daily failure rates** at the **egg** and **nestling** stages.

The NRS complements the productivity data collected by BOMP fieldworkers. NRS data have several advantages over BOMP data, most notably the fact that the dataset spans a much longer period of time. More than 50 Barn Owl Nest Record Cards have been received every year since 1983, with numbers peaking at 205 in 1988. The NRS dataset also includes sites at which Barn Owls are breeding in natural nest holes, allowing productivity measurements from nests in cavities to be compared with those from nests in nestboxes. However, the number and regional distribution of sites at which nests are recorded for the NRS may vary between years, and these differences must be accounted for prior to interpreting annual variation in productivity measurements.

Because the same set of BOMP sites are surveyed every year, data from successive seasons are more readily comparable, and annual trends may therefore be more accurately and easily

calculated. Comparisons between NRS and BOMP productivity data may provide a useful technique to investigate the influence of methodology on the estimation of national trends.

Of the productivity measurements recorded, only brood size and hatching success varied significantly between years. The results presented in Figure 5 indicate that brood sizes were low during the 2001 season, supporting the conclusion drawn from BOMP productivity data that 2001 was a poor breeding season for Barn Owls (Figure 6a). Hatching success was also below average relative to the preceding 18 years, as suggested by BOMP productivity data (Figure 6b). However, the difference in hatching success was small, suggesting that a reduction in the proportion of the clutch that hatched successfully was not the sole cause of the smaller brood sizes recorded in 2001.

None of the NRS productivity measurements taken varied significantly between habitat types, as was the case for the BOMP productivity data. However, clutch size did vary significantly according to the type of nest site, with nestboxes containing larger clutches than natural nest holes. Failure rates over the whole nesting period were higher for box-nesting individuals. The amount of space available inside nestboxes has been shown to influence clutch size in some passerine species. The observed variation in productivity between box-nesters and individuals nesting in natural sites could be due to differences in the quality of birds inhabiting the different types of nest site, or differences in the national distribution of nestboxes and natural nest sites.

Variation in the timing of breeding can therefore also be investigated using NRS data. Although the mean date on which the first egg of the clutch was laid was over two weeks earlier than the mean for the period 1983-2000 (Figure 4), this difference was not significant due to the high degree of inter-annual variation in the timing of breeding over the last 18 years. In addition, birds breeding in nestboxes were not observed to produce their clutches at a significantly earlier or a significantly later stage of the breeding season relative to pairs breeding in natural nest holes.

Productivity measurement	1983-2000	2001
Mean clutch size (eggs)	4.93	4.60
Mean brood size (chicks)	3.38	2.87
Mean hatching success (% eggs that hatch)	70	66
Mean egg stage daily failure rate (proportion broods lost/day)	0.008	0.001
Mean nestling stage daily failure rate (proportion broods lost /day)	0.010	0.002
Mean first egg date	9 May	21 April

Figure 5. Mean NRS productivity measurements for the period 1983-2000 compared with equivalent measures from 2001.

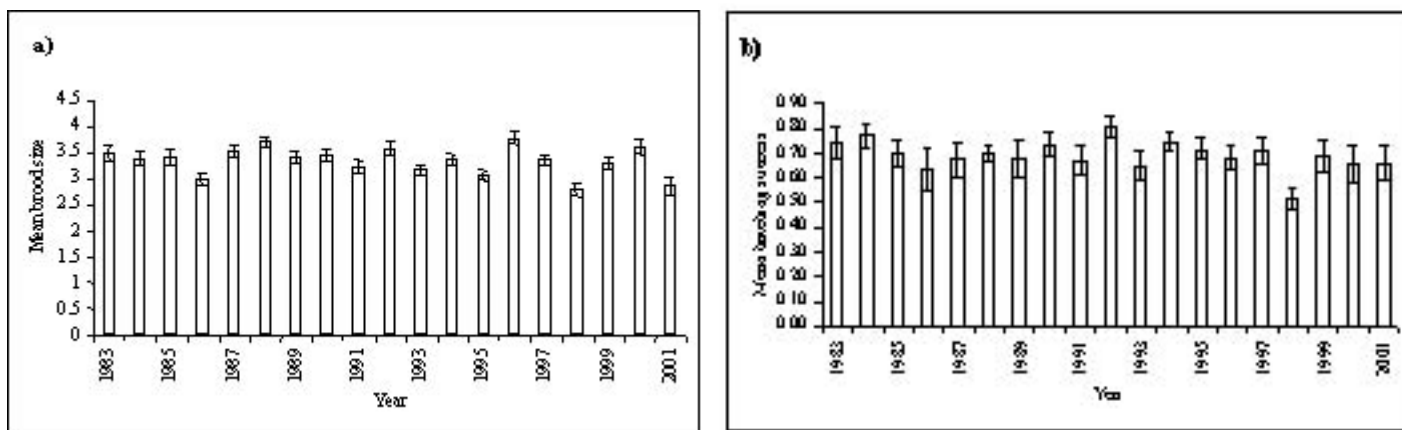


Figure 6. Annual variation in a) brood size and b) hatching success over the period 1983-2001 calculated using Nest Record Scheme data (mean \pm 1 SE).

Some tips for ringers visiting Barn Owl nest sites

Colin Shawyer gives some top tips on how to collect data from Barn Owl nest sites effectively whilst minimising disturbance to the occupants. Please remember that you must obtain a Schedule 1 Licence prior to visiting any Barn Owl nest site.

- When recording the clutch size, look to see if the eggs are clean or soiled. If one or more are very clean and bright you can assume they have been laid recently. The female might also be in the process of laying. At this time, the risks of nest desertion are very high, so take particular care and do not attempt to catch her, but rather return to the site in two weeks time.
- Deserted eggs are usually partly submerged or covered by pellet debris. Beware, however, that occasionally the female will leave the nest for a short period, perhaps because she has been frightened off just prior to your visit. Cold eggs alone are not necessarily evidence of nest desertion.
- If you find a nest of dry shredded pellets but few or no whole pellets at an otherwise well-used roost, it is likely that laying is about to commence. A shallow depression or scrape is most obvious when laying is imminent.
- Do not take the female off the eggs if she is sitting – this may cause her to desert the clutch.
- When catching adults, if any eggs or small young become dislodged from their nest cup, gently put them back before placing the adult/s back in the box.
- When putting the female back, do not attempt to place her directly on her eggs, but rather lay her nearby against the side of the box, keeping her face covered by the palm of your hand.
- If both adults are present in the box, return the female first, and then the male after a couple of minutes or so, to a different part of the box.
- If you are in any doubt about sexing the adults (female birds can have little or no spotting), gently blow on the breast feathers to see which one has a brood patch. Males lack this patch, but be aware that they still have a substantial unfeathered area around the abdomen. This is usually grey in colour rather than the cream, yellow or pink displayed by females during different stages of the breeding cycle. Male and female weight at this stage during the breeding cycle is always different, with females weighing significantly more than males (between about 30g and 120g more).
- If you visit a nest later than intended and are unsure if Barn Owls have bred there, look for wisps of down sticking to the inside of boxes or a sprinkling of tiny pieces of white feather sheath on the surface of the black pellet debris. This is a good indicator that young have fledged from the site.

North West Norfolk Ringing Group and BOMP

'Populationsmonitoring Von Schleiereule Und Turmfalke'

John Middleton talks about his Ringing Group's involvement with BOMP

North West Norfolk Ringing Group (NWNRG) has always been interested in particular ringing projects rather than general ringing without specific aims. In the past, we have instigated original research on both Snow Buntings and Wheatears. Whilst we have always been fortunate in having Barn Owls to monitor, we had not previously undertaken a specific study of this species. We have always been staunch supporters of the BTO Nest Record Scheme, however. When the Barn Owl Monitoring Programme was launched (which sought to link nest recorders and ringers), NWNRG embraced it with enthusiasm.

Most of our Barn Owls breed in nestboxes made from old tea chests, with a front that often just consists of a board about four inches deep. Other boxes have a complete front with a nine-inch square hole, sometimes in one corner and sometimes in the centre, so nothing was innovative or unusual about our nestbox design! Between 1990 and 2001 we ringed 196 birds, most of which were pulli. By the end of 2002 we expect to have ringed a further 120 birds! Of the birds we have ringed, so far 35 have subsequently been reported.

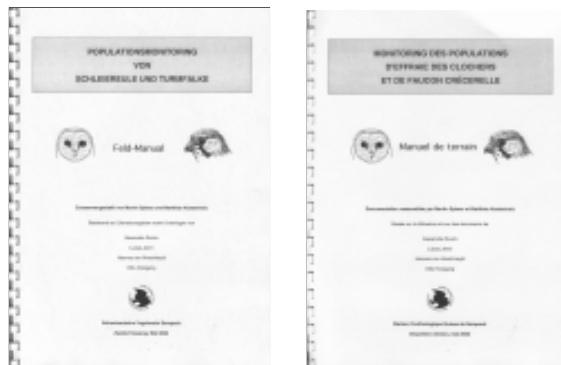
Sixteen of these recoveries were reported as victims of road traffic accidents. Twelve others were found dead by members of the public, and it cannot be ruled out that these also suffered the same fate. Two more birds drowned in water tanks. As with other studies, most of our birds died in their first winter. In addition, most Barn Owls moved less than ten kilometres, and only two moved more than twenty.

Currently the Group has access to over 70 sites and this year we recorded sixty-five pairs actively breeding in our part of Norfolk alone. This poses an interesting question, because in 1985 the whole Norfolk population was estimated to stand at approximately 190 pairs (Shawyer, 1987). It would seem either that this estimate was on the low side, or that Barn Owls have made a significant recovery, at least in our part of the country.

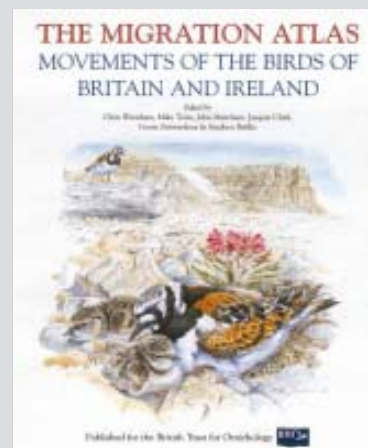
This year we were fortunate enough to make contact with someone who has installed over 200 nestboxes at approximately 80 different locations. Twenty-five of these were occupied in 2002, but previously none of them were being monitored in any way. In 2001, of 39 Barn Owls ringed in Norfolk, 32 were ringed by us (based on the figures presented at the annual Norfolk Ringers meeting). Surely NWNRG do not hold the monopoly on ringing Barn Owls in Norfolk? We continue to make contact with new farmers and other individuals who have Barn Owls breeding in their buildings. We believe that there are potentially many more sites! So come on you ringers, why don't you make some more enquiries where you live? Perhaps you could discover some more sites and increase the number of Barn Owls being monitored and ringed.



Since the launch of BOMP, our counterparts in Switzerland, Vogelwarte Sempach, have launched their own monitoring programme for Barn Owl and also Kestrel. They very kindly sent us copies of their fieldwork manual (German and French versions). It will be very interesting to see how their results compare with those recorded through BOMP in the UK.



Just published!



The long awaited *Migration Atlas* has at last been published! The book is a comprehensive summary of the movements of all but the rarest bird species that visit Britain and Ireland. It contains detailed texts from over 150 acknowledged experts, supporting maps, figures and eye-catching artwork.

The Barn Owl section was written by Mike Toms, previously responsible for *Project Barn Owl* (and now the Organiser for the BTO-CJ Garden BirdWatch).

There is a map of Barn Owl recovery locations and movements of over 20km. The movements of six birds ringed abroad are also shown.

Wernham, C.V., Toms, M.P., Marchant, J.H., Clark, J.A., Siriwardena, G.M., & Baillie, S.R. (eds). 2002. *The Migration Atlas: Movements of the Birds of Britain and Ireland*. T. & A.D. Poyser, London. ISBN 0-7136-6514-9

884 pages, Published price £65.00

The Migration Atlas can be obtained from all good bookshops.

Publications received by the BOMP office

'Boxes, Baskets and Platforms'. Hawk and Owl Trust.

40 pages, 92 colour photographs, 8 line drawings



The revised edition of The Hawk & Owl Trust's 'Boxes, Baskets and Platforms' guide is now available. This booklet contains some stunning photographs to illustrate the range of artificial sites that can be put up for raptors and owls. A highly recommended read!

Copies are available for £5.75 (see 'flyer') from Hawk & Owl Trust, www.hawkandowl.org

'The Barn Owl and its Habitat', 'Building for Barn Owls' and 'Planning for Barn Owls'



These valuable leaflets produced by the Hawk & Owl Trust, are suitable for farmers and planners. Contact the Hawk & Owl Trust for copies, 35p in stamps for each leaflet plus sae. A limited number can also be obtained from the BOMP office.

'Network Newslink'. Barn Owl Conservation Network.



We suspect that most readers already know about the BOCN, a project of the Hawk & Owl Trust (funded by the Sheepdrove Trust, who are also sponsoring BOMP). Network Newslink is the quarterly newsletter produced by the BOCN, containing the latest news and conservation information about Barn Owls. For further

details, please check out the new BOCN website www.bocn.org Alternatively contact Jason Ball, the BOCN Coordinator (see 'Useful Addresses'.)

Barn Owl Information Pack' and 'Feedback'. Barn Owl Trust.



The Barn Owl Trust has produced a series of very useful Barn Owl information leaflets. These cover important subjects such as rodent control, sexing of Barn Owls and safeguarding wild nest/roost sites. There is no charge for these leaflets, but a donation to cover their costs is always appreciated. A video about the Trust's work is also available, as is 'Feedback', the Trust's quarterly newsletter.

For further information, check out the Barn Owl Trust's website www.barnowltrust.org.uk or write to the address given at the end of this newsletter.

'Barn Owls on Site - a Guide for Developers and Planners'. English Nature/Barn Owl Trust.

52 pages, 18 colour photographs, 4 line drawings



Unfortunately we only have limited space to review the new edition of this guide that was originally published in 1995. Although intended for site planners and developers, this excellent booklet contains a wealth of information that would be of interest to any Barn Owl observer. The section covering the 'interpretation of the law' helps to clarify what actually constitutes 'disturbance' at Barn Owl nest sites. The guide discusses the signs to look for to confirm site occupancy.

It also includes a useful photograph that will help to determine the age of Barn Owl pellets. Copies are available free from the English Nature website www.english-nature.org.uk or contact the Barn Owl Trust.

'Broxton Barn Owl Group Newsletter'. Broxton Barn Owl Group.

The Editor, Bernard Wright, was one of the speakers at this year's Barn Owl Conservation Network Symposium. This six page newsletter (in colour) illustrates some of the amazing work being carried out in Cheshire since the group was founded in 1995. The 'pie and pint' technique they have developed to keep local farmers up to date with their work is obviously proving to be very successful!

Contact Bernard Wright at Carden Smithy, Clutton, Broxton, Cheshire, CH3 9EP, or by email at knoydart@globalnet.co.uk

'Year 2001'. Barn Owl Survey and Conservation Group.

(North Yorkshire and Humberside).

Despite being a poor breeding season (together with Foot & Mouth access restrictions), 112 owlets were ringed by the group. Details supplied included the 13 Barn Owl recoveries reported in 2001, the furthest travelling 144km. Most impressive is the fact that the group put up more than 50 nestboxes in 2001, and they report that they are now working alongside a number of other Barn Owl researchers in their area. An analysis of pellets collected at two locations formed part of the Mammal Society's 'National Owl Pellet Survey' has revealed some interesting seasonal differences in prey taken. Finally there was a brief report on the pellets analysed by members of the Yorkshire Mammal Group for the Ellerton Church Preservation Trust.

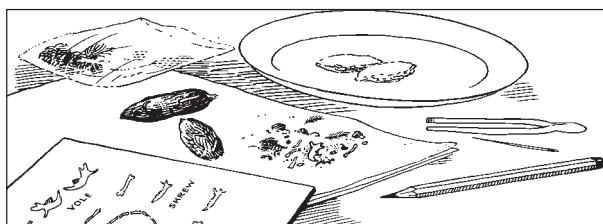
'Raptor and Owl Nest Box Project 2001 Report' Imber Conservation Group.

This 15 page report provides some of the statistics gathered from work on and around Salisbury Plain in Wiltshire. This is the 18th annual report for the group, which despite F&M recorded 28 broods of Kestrel (91 young ringed), 13 pairs of Little Owl (37 ringed) and 70 pairs of Barn Owl (144 ringed) during 2001. The group reported that, in contrast with other parts of the UK, their Barn Owls had quite a reasonable year. It is very gratifying to note that the species on Salisbury Plain continues to expand: more pairs were recorded here in 2001 than were found in the rest of Wiltshire.



'A Report for 2001'. South Midlands Barn Owl Conservation Group.

This small three page report gave the results from 33 pairs of Barn Owls being monitored by this group in 2001: 38 broods and 115 young fledged. Five casualties were reported during the year, one bird having travelled 46km to Hampshire. 1934 pellets were analysed, revealing the prey preferences at different sites. (This work is soon to be published in the journal 'Biological Conservation'). Finally the group announced its decision to concentrate their efforts on putting up nestboxes, now that the DOE have stopped issuing licences for Barn Owl Releases.



Applying for Schedule 1 licences

Barn Owls are specially protected at the nest under the Wildlife & Countryside Act (1981) and it is an offence to disturb them without a Licence. To ensure that you get a licence in time for the start of the Barn Owl season, please apply by the end of February.

When applying for a licence you will need to provide details of the county and 10km square to cover **all** the sites that you intend to visit. This information prevents sites from being visited by more than one observer. It is not possible for other ringers, nest recorders, BTO members or members of the public to access these details.

To ensure that licences are only issued to *bona fide* people, non-ringers will need to provide two written references with their Schedule 1 application. These should be from a recognised authority such as a BTO Regional Representative, Bird Ringer, Chairman of a Bird Club or a County Recorder.

Schedule 1 licences have to be renewed each year, and a condition for renewal is that observers supply information on the previous season.

For further information or a Schedule 1 Application Form, please contact the BTO Licensing Officer, Jez Blackburn (jez.blackburn@bto.org) or the BOMP office.

Registering for BOMP

Anyone is welcome to participate in BOMP. Those with no previous nest recording or ringing experience can still collect valuable information concerning Barn Owl occupancy by making at least two visits to the nest per season, although a series of brief monthly visits would be preferred.

Because we are monitoring Occupancy Rates, recording that Barn Owls are absent from a BOMP site is just as important as knowing that they have nested there. Please return your forms each year even if there is no evidence of breeding at the site.

Licensed Nest Recorders and Ringers will be able to record additional information, such as clutch and brood size, fledging success and the number of prey items in the box. Ringers can collect data concerning the age, size and condition of both nestlings and adults. The ringing of adults and young will provide information concerning their dispersal patterns and survival rates. Please request a registration form if you wish to take part.

BOMP provides an exciting and rewarding opportunity for you to help in the research and conservation of one of Britain's most distinctive and well-loved bird species.

Recent Developments

New staff

An additional member of BTO staff, Dr Dave Leech, joined the team of Peter Beaven and Dr Humphrey Crick in May 2002 to work on the Barn Owl Monitoring Programme.

Slide presentations

In May 2002, Peter Beaven gave a talk about the Barn Owl Monitoring Programme after the West Midlands Bird Club AGM. He was also one of the BTO speakers at the Rutland Birdwatching Fair in August 2002. Other talks are being planned.

Articles published

A number of articles about BOMP have appeared:

'Towards Effective Barn Owl Monitoring'

('BTO News' number 239, March 2002)

'Could Flooding Have Affected Barn Owl Nesting?'

('BTO News' number 242, September 2002)

Both articles have generated a great deal of interest from potential observers and the media. Copies of the articles are available from the BOMP office.

A Barn Owl article by Rod Angus (which mentioned PBO and BOMP) appeared in the October 2002 issue of 'Bird Watching' magazine.

Meetings attended

Two members of BTO staff, Peter Beaven and Deborah Lang attended the Barn Owl Conservation Network Symposium at Sheepdrove Farm in March 2002. This proved to be an excellent opportunity to meet existing BOMP observers and make some valuable new contacts.

Useful addresses

British Trust for Ornithology, The Nunnery, Thetford, Norfolk IP24 2PU

Tel. 01842-750050 Fax. 01842 750030 Email barnowls@bto.org
Website www.bto.org

Sheepdrove Organic Farm, Lambourn, Berkshire RG17 7UU

Website www.sheepdrove.com

Barn Owl Conservation Network, Sheepdrove Organic Farm, Lambourn, Berkshire RG17 7UU Tel. 01488-73335

Email jason.ball@sheepdrove.com Website www.bocn.org

Hawk & Owl Trust, c/o Zoological Society of London, Regent's Park, London NW1 4RY

Email hawkandowltrust@aol.com Website www.hawkandowl.org

Hawk & Owl Trust (Publications), PO Box 530, Windlesham GU20 6XZ

Details of their publications are available on request.

Email hawkowlpub@tiscali.co.uk (note new email address)

Website www.hawkandowl.org

Barn Owl Trust, Waterleat, Ashburton, Devon TQ13 7HU

Tel. 01364-653026 Email info@barnowltrust.org.uk

Website www.barnowltrust.org.uk

Useful bibliography

Brazil, M. & Shawyer, C. (1989) *The Barn Owl: The Farmer's Friend Needs a Helping Hand*. The Hawk Trust. Available from the Hawk & Owl Trust. £2.99.

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Shawyer, C. (1987) *The Barn Owl in the British Isles: Its Past, Present and Future*. London. Hawk Trust. Out of print.

Shawyer, C. (1998) *The Barn Owl*. Chelmsford. Arlequin Press.

Taylor, I. (1994) *Barn Owls: Predator-Prey Relationships and Conservation*. Cambridge. Cambridge University Press.

Yalden, D. & Morris, P. (1993) *The Analysis of Owl Pellets*. Mammal Society Publication No. 13. London. Mammal Society. Currently out of print, but a revised edition will soon be available.



D.A. Thelwell

For further information about the Barn Owl Monitoring Programme, please contact barnowls@bto.org or telephone the Coordinator, Peter Beaven on 01842-750050

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