Welsh Rare Breeding Birds and Raptor Study Group - North-East Wales

Grwp Astudio Adar Bridio prin ac Adar Ysglyfaethus Cymru - Gogledd Dwyrain Cymru

North East Wales Barn Owl Project Newsletter

Number 4 – July 2013

The Barn Owl Breeding Results for 2009-2012

Within this newsletter we show what was found at each of the nest sites that were monitored during 2009 to 2012. In the box at the top of the newsletter is shown the code or codes for your nest site(s). We would still like to be able to check every site every year but this has proved difficult without extra assistance.

The project had been making good progress up to 2008 with the number of barn owls breeding in our boxes or in other nest sites (mainly holes in trees that had been identified during project fieldwork or by information from landowners). The numbers of birds ringed had also increased.

Then came a series of weather events that have not helped the barn owls in north-east Wales and the adverse effects are shown in the results of the project.

Firstly there was a snow event in February 2009 when on upland snow lay up to 60 cm deep for about two weeks. This was enough to cause desertion of upland boxes, or more likely, the deaths of the owls that had been using those boxes. There were further snow events in January and November 2010 followed by a relatively benign 2011 though it did not appear to be sufficient for any recovery to be very noticeable. Then there was the very wet year of 2012 when even during the summer there was a huge amount of rain. Heavy rain at night would have prevented barn owls from hunting successfully. The noise of the rain drops would have prevented the owls from hearing the movements of their prey on the ground. Lastly, there was the huge snow event of March 2013. The snow fell in such amounts that not only could owls not feed but farmers lost sheep and lambs under a huge blanket of snow!

At the end of 2012 the number of sites available to be monitored by the project was as follows:

Unitary Authority	**Boxes**	**Natural sites**
Conwy	40	6
Denbighshire	31	15
Flintshire	22	4
Wrexham	67	31
TOTALS	160	56

Unfortunately, due to a variety of reasons all sites have not been monitored in every year, this is mainly due to time restrictions. However, of the sites that have been monitored we have the following results:

Year	No of active sites	No of eggs laid (min)	No of young fledged
2009	23	80	45
2010	24	74	63
2011	19	71	37
2012	22	52	35

The number of active sites has remained nearly the same within these years, with either a very small drop or very small rise in the number of active sites. However, this is because each year some new nest sites have been found and some previously active nests have been abandoned.

If there had not been all the snow and rain, there is a possibility that the number of active sites may have been doubled by 2012. This implies the loss of at least forty owls of breeding age.

From these active nest sites the number of owls that have been ringed by John Lawton Roberts and Ian Spence are as follows:

Year	Adult	Nestling
2005	3	19
2006		7
2007	4	44
2008	9	38
2009	7	36
2010	11	55
2011	4	38
2012	3	24

Given the snow that lay on the ground in early 2009 and 2010, the 2010 ringing totals were our best ever. However, since then we have seen the effects primarily of the weather but also affected by John's reduced activity. With the numbers of young fledged and ringed in 2012 being so low, we wait with trepidation to find out how few birds there are in the 2013 breeding season.

We have nearly used all the money provided by Chester Zoo for making nest-boxes and we hope to complete the final boxes in late 2013. Thereafter we do not envisage making any more in the immediate future. We do need some extra, reliable assistance with the nest-box monitoring. For this the people need to be trained and then sufficiently well trusted to be provided with Schedule 1 licences or be agents on behalf of John or Ian.

At a meeting in early 2013 the role of Coordinator of the Barn Owl Project passed from me to Lizzy Webster. I wish her every success in maintaining and consolidating the project over the next few years. I will endeavour to continue to do the fieldwork that I have undertaken since the project started.

Ian M Spence

Progress of the Project in Wrexham County Borough Since 2008

The last four years have brought to fruition most of our plans for the project in Wrexham. Our network of barn owl boxes now covers much of the County Borough. Year by year, helped by members of the rural community, we learn of more 'natural' nest sites in holes in trees, while gradually the owls' take-up rate of our boxes is improving.

The barn owl nest box total for Wrexham CB stands now at 61 and a further eight tree-hole nest sites have been found. Four new tree boxes have gone up in the Maelor and three near the Wrexham Industrial Estate, both areas previously poorly covered by the project.

Our first box in the Ceiriog Valley went up in 2011 and it remains our only box in the area. Encouragingly the number of active nests

known to us rose from 11 in 2009 to 16 in 2012.

Of the 18 boxes put up since 2008, only four have been in buildings. Our earlier experience of a similar but larger scale barn owl projects in Cheshire and Shropshire, shows that few barn owls in the lowlands now breed in barns or other buildings. Only two of our indoor boxes are used and these are in sites where owls had already been breeding on ledges, but preferred the extra security of a box.

Pleasingly, the take-up of our outdoor boxes has risen from only one in 2009 to six in 2011. In one case, in the Borras area, the owls had bred in a rickety ash overhanging a busy road, where the owlets were often killed by traffic. As an experiment, we put a box on a tree 400m distant, well away from the road and two years later the owls had moved in, abandoning the dangerous ash site.

To date, in Wrexham there has been no repeat of the bumper barn owl breeding year of 2007. The warm, dry March of 2012 triggered early breeding by the owls and our colleagues running the Cheshire and Shropshire Projects reported very promising numbers of young in their boxes. However, several young died before fledging, probably due to the exceptionally wet summer. In Wrexham, fewer young fledged than in 2011 and, in contrast to Cheshire and Shropshire, there was no increase in numbers of pairs breeding. As the lowland parts of the three counties are very similar and owls do not respect county boundaries, it is hard to understand this difference.

Since 2010 we have changed the emphasis of our winter activities. We now build fewer boxes and spend more time searching for 'missing' barn owl nests. Our aim is to find all the nesting pairs in Wrexham, east and north of the Ceiriog Valley. Helpfully, in areas with similar amounts of voles and mice, barn owl pairs spread themselves out fairly evenly, each defending its own patch of ground or ‘territory’.

At the moment, in Wrexham, the average distance between nests seems to be around two miles. This means that by marking the known nest sites on a map and spotting the ‘empty' areas, we can work out which parts might repay searching for undetected nests.
To narrow our search, we gather reports from farmers or other country people. These often involve owls spotted in car headlights, or seen hunting during evening harvesting operations. Next, with landowners' permission, we walk what can be miles of hedgerow (barn owls rarely nest in the denser cover of woods) checking every tree for suitable holes and signs of occupation in the form of pellets, droppings and feathers. Sometimes, but rarely, we hit lucky straight away. Mostly the nests are tantalisingly elusive.

There are five areas of the County where we know there are barn owls, from finding roosting birds or pellets in our boxes or in buildings, but where we are yet to find their nests. These are near Llay, west of Burton, south-west of Holt, near Drury Lane and north of Hanmer. There must be barn owls near Brymbo, too, though we have yet to search there. If you see or hear of barn owls in any of these areas (or elsewhere) please let us know. The best clues are the young owls – they are 'dopy'-looking, perch close together and bob their heads like puppets.

It's hard to believe that chicks looking like this turn into graceful adult barn owls!

In 2012 Mike Jones of Dudleston Heath joined the Wrexham project team. Mike has at least 50 years' experience of finding barn owl nests in the Wales-Shropshire borders. John

Lightfoot, who runs a county-wide barn owl project in Shropshire, still finds time to cover the Mosses and surrounds for us.

We are particularly grateful to Graham and Jan Rowlands (Talwrn) and Raymond Jones (Abenbury) for showing us barn owl nests and giving us leads and contacts resulting in further finds. It is thanks to people like them, and the 130 or so other farmers and landowners who have welcomed us onto their land that the project in Wrexham has taken off.

John Lawton Roberts and Emma Broad

Location, Location, Location

A room with a view? Open plan kitchen-diner? A conservatory? They might not be quite as fussy as we humans are when it comes to their dream home, but as Rhian Pierce found out as part of her MSc research project, barn owl roost sites still need to measure up.

With the help of over 200 landowners who graciously replied to Rhian's leaflets requesting information about barn owls on their land, past and present, she went on to find out what barn owls really want in a roost. With the help of Ian Spence and John Lawton Roberts, she put up 60 nest boxes to see which ones would find an occupier and which ones would not. After some time, she selected nine unoccupied sites and 11 occupied sites to study.

It is generally thought that barn owl numbers have declined in the last 100 years because of hard winters making hunting prey and raising young difficult, the loss of rough grassland grazing habitats, providing fewer habitats for their small mammal prey and the increased use of organochlorides having an effect on the birds of prey through the food chain.

Rhian collected data from various sources, on topography and climate, habitat type and composition, and small mammal numbers, to compare between the occupied and unoccupied sites, to find any clear preferences.

She carried out mammal trapping on eight common habitat types, and then used those data, along with the habitat data to estimate the number of small mammals within 1km of each box.

The table below shows the results from Rhian's small mammal trapping, alongside results from a similar study carried out by Taylor et al in 1992.

Habitat	**Taylor *et al*, average voles caught** (re-calculated by Rhian to account for her 4 days of study)	**Rhian's results for small mammal numbers caught over 4 days**
Semi-natural broadleaved woodland	63.5	78
Planted coniferous woodland	71	49
Semi-improved neutral grassland	13.5	36
Improved grassland	51.5	7
Bracken	Not surveyed	47
Dry acid heath	Not surveyed	14
Arable	1	29
Buildings	Not surveyed	4

Rhian found that barn owls have their own list of preferences when it comes to selecting a roost.

<u>Habitat</u>

1. High **habitat diversity isn't important** for the barn owls.
2. …But the kind of habitat around the roost is important. **Woodland and semi-improved grassland** featured a lot near the occupied boxes, probably because

both kinds of habitat provide a high predator density for the owls.

3. Barn owls showed a **dislike for sites where dry acid heath was dominating** the surrounding habitat, probably because of the low prey abundance there.
4. Despite having very high prey abundance, sites with a **large areas of bracken dominating the habitat often had unoccupied boxes**, suggesting that they can't hunt well in the tall bracken vegetation.
5. **Buildings and tracks seemed to attract barn owls** to the sites. Tracks often have rough grass running along side, which might explain the preference, and buildings could be used as shelter.

Environment

1. The results show that **sites below 150m elevation are more likely to be occupied.**
2. Barn owls showed a **preference for sites where the annual average minimum temperature is higher than 3.8°C** but preferably where the average is more than 5.2°C.
3. They also showed a **preference for sites where average annual rainfall was less than 1209mm.**

These criteria for barn owl sites are certainly guidelines more than they are rules.

Even in the small number of boxes that Rhian examined, there was an exception to every rule.

The results of this study will help the North East Wales Barn Owl Project to target its limited resources effectively, including putting up barn owl boxes in areas where they are more likely to be used. We can now use this information found by Rhian and do just that, provide the ideal homes for our barn owls.

Nia Watkin

Landowner's Perspective

To know that I have barn owls on my land is a privilege, and I find that having a barn owl box is a very useful way of keeping track on what years the barn owls are around. When I was younger it was easy to tell when the barn owls were around as driving up to my house at night you would see them hunting or sitting on bows of the trees. However, for a few years we have not seen them like this, but have seen the feathers inside the nesting box; showing they are still around.

Sadly this year (2013) there are no barn owls present in the nesting box however, it is home to redstarts, which I find is still an achievement. Although the barn owls are not around as much as they used to be, the nesting boxes will stay in place so that we can keep checking, in hope that one day I can find that once again they are inhabited by the barn owls.

Victoria Hughes – a barn owl box owner

Do you know of any 'natural' nest sites that barn owls may be using? We'd love to hear from you: contact your local biodiversity officer.

For more information about the project, contact your local biodiversity officer:

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