

State of the UK Barn Owl population – 2018

‘Generally a poor year with few exceptions.’

Results from 37 independent groups collated by the Barn Owl Trust



Photo: Craig Jones

Conserving the Barn Owl and its Environment

State of the UK Barn Owl population - 2018

Contributing Groups

Barn Owl Trust
Brandon Ringing Group
Broxton Barn Owl Group
Bucks Owl & Raptor Group
Cam Valley Wildlife Group
Dumfries and Galloway Raptor Study Group
East Cheshire Barn Owl Group
East Riding Barn Owl Conservation Group
Essex Wildlife Trust
Gil Gaylor
Glamorgan Barn Owl Group
Gloucestershire Barn Owl Monitoring Programme
Jersey Barn Owl Conservation
Lewis Raptor & Owl Group
Manchester Raptor Group
Merseyside Ringing Group
Mid Cheshire Barn Owl Conservation Group
Middle Thames Ringing Group
North Cheshire Barn Owl Group

North-east Cheshire Barn Owl Group
North West Norfolk Ringing Group
Philip Hanmer - Nat. Hist. Soc. of Northumbria Hancock Mus. R.G.
Powys Species Habitat Protection Group
Shropshire Barn Owl Group
South Cheshire Barn Owl Group
South Warwickshire Barn Owl Survey
Staffordshire Barn Owl Action Group
Stour Valley Wildlife Action Group
Suffolk Community Barn Owl Project
Sussex Ornithological Society - Barrie Watson
Sussex Ornithological Society - Graham Roberts
Thornham Owl Project
Ulster Wildlife
Vale of Belvoir Barn Owl Conservation Group
West Berkshire Countryside Society Barn Owl Group
West Cornwall Ringing Group
Wirral Barn Owl Trust

Introduction

This original overview of Barn Owl dynamics in the 2018 breeding season is only possible thanks to all the valuable work carried out by independent groups and projects across the UK. We are particularly grateful to the 37 groups who provided their results for 2018. Between them, the contributors to this report monitored a staggering 7,190 sites and recorded 1,457 active nests. The fact that so many groups contribute data to this report was recently acknowledged when the BBC Countryfile featured Barn Owls in their 2019 Winter Special, presented by Steve Brown (see photo).

A full list of contributors is presented on Page 2 and the last page provides links to contributors' own webpages (where available). Although some contributors were unavoidably prevented from carrying out their monitoring work in 2018, we are glad to have received data from the Vale of Belvoir Barn Owl Conservation Group (VBOC) after a break, and we are pleased to include results from a wider area of Dumfries and Galloway than has previously been possible.

This report makes no attempt to estimate UK population level - since the only valid way of doing this is through the repeated cold-searching of randomly selected squares over a 3-year period (e.g., another Project Barn Owl). Although some possible reasons for year-on-year changes in nesting success are discussed, definitive answers to questions beginning with 'why' are well beyond its scope. However, answers to simple questions like 'how did Barn Owls do last year?' or 'how do my results compare to others?' may be found herein.



BBC Countryfile presenter Steve Brown (on the right), with David Ramsden, Rick Lockwood and Michael Park from the Barn Owl Trust

Definition of terms used in tables and text

Start year used - The year when the monitoring represented in this report was started.

Sites checked - The number of potential nest sites that were checked (inspected).

Nesting - The number of sites where nesting actually occurred (one or more eggs laid).

% Nesting (Nesting Occupancy) - The percentage of sites checked where nesting occurred.

Average of All Previous Years (AAPY) - A mean value calculated from the figures for each year from the effective start year, up to and including 2017.

% Change from AAPY (under Nesting Occupancy) - The percentage change between the proportion of sites occupied in 2018 and the average proportion of sites occupied in all previous years:

$$100 \times \frac{(2018 \text{ Nesting} \div 2018 \text{ Sites checked}) - (AAPY \text{ Nesting} \div AAPY \text{ Sites checked})}{(AAPY \text{ Nesting} \div AAPY \text{ Sites checked})}$$

Numerical change from AAPY - The difference between 2018 and AAPY in the number of sites where nesting occurred (2018 Nesting – AAPY Nesting).

Brood size - The number of live young counted at any time between hatching and fledging.

Mean brood size - The total number of owlets, divided by the total number of broods. This excludes: 1) sites where there was no nesting, and 2) nests where there were no live young.

% Change from AAPY (under Mean brood size) - The percentage change in mean brood size between 2018 and the AAPY:

$$100 \times \frac{(2018 \text{ Mean brood size} - AAPY \text{ Mean brood size})}{(AAPY \text{ Mean brood size})}$$

E - estimated.

Please note that apparent discrepancies in calculations of change from AAPY are due to rounding table values to whole numbers.

***Unusual Exclusions**

For two contributors, all the figures used in the calculation of Nesting Occupancy % change from AAPY are excluded from the Summary row for the following reasons:

a) Wiltshire – Lewis Raptor & Owl Group. There were 273, 314 and 383 sites checked in 2016, 2017 and 2018, respectively, as opposed to the usual c.620. The number of sites checked during these three years is less than in previous years for two reasons: 1) Kestrel and Tawny Owl nest boxes where Barn Owls did not nest were not included, and 2) Effort was concentrated on sites where there was a greater probability of finding breeding pairs. This rendered invalid any comparison between the nesting occupancy in 2018 and the average of previous years. However, in future years we hope to use the average from observations obtained from 2016 (when monitoring changed).

b) Somerset NE - Cam Valley Wildlife Group. This project is carried out entirely within three 10 x 10 km squares, which are now saturated in terms of nest boxes. In 2018 effort was concentrated on sites where there was a greater probability of occupancy, which renders invalid any comparison with the average of previous years, during which all boxes were checked.

Caveats

1. The figures provided in the table are accurate (unless marked 'E'). However, methodological variation between groups means that they can only provide indications of what happened to the population as a whole (in terms of nesting occupancy and brood sizes).
2. For some individual groups, anomalies can arise with regard to year-to-year changes in numbers of 'Sites Checked' both in terms of the 'Average of All Previous Years' and 'Numerical Change'. This is because the authors have not imposed criteria for the inclusion/exclusion of individual sites.
3. The way in which potential nest sites are counted varies between groups and, to a lesser extent, may sometimes vary between years.
4. The probability of individual sites being occupied varies tremendously. Some datasets include sites that may never have been occupied whilst others only include sites where pairs have nested previously.
5. The proportion of nest sites that were monitored varies between counties.
6. The vast majority of sites were checked by inspection to confirm/discount breeding, and determine brood size. However, some groups accepted reports from trusted/knowledgeable site owners, particularly where nest cavities were inaccessible.
7. At most sites, only one nest inspection was carried out. Chicks may have died before this nest inspection or may die between inspection and fledging. Some sites were visited more than once and figures given for brood size may have been derived from either one of these visits.
8. The calculation of all-years average varies between contributors according to how many years the project in question has been running.
9. One or two individual years may be omitted from data sets due to restrictions on farm visits such as in 1996 due to BSE and 2001 due to Foot and Mouth Disease.

County / Group	Start year used	NESTING OCCUPANCY								MEAN BROOD SIZE			See notes
		2018			Average of All Previous Years (AAPY)			% Change from AAPY	Numerical change from AAPY	2018	AAPY	% Change from AAPY	
		Sites checked	Nesting	% Nesting	Sites checked	Nesting	% Nesting						
Berkshire - West Berkshire Countryside Society Barn Owl Group	2010	187	41	22	134	24	18	21	17	2.6	3.0	-12.9	1
Berkshire (N) & Buckinghamshire (S) - Middle Thames Ringing Group	2015	89	18	20	117	22	19	6	-4	2.4	2.8	-14.6	2
Buckinghamshire - Bucks Owl & Raptor Group	2006	200	24	12	208	25	12	0	-1	2.7	2.7	1.4	3
Cheshire Barn Owl Groups	2006	1816	195	11	1311	127	10	11	68	2.5	2.8	-9.8	4
Cornwall – West Cornwall Ringing Group	2011	85	47	55	42	24	57	-3	23	3.3	3.1	7.9	5
Devon & Cornwall (E) - Barn Owl Trust	1993	73	43	59	79	35	44	33	8	2.8	2.9	-0.9	
Essex Wildlife Trust	2016	186	39	21	151	31	20	4	9	2.7	2.7	1.5	7
Dumfries & Galloway Scottish Raptor Study Group	2016	264	90	34	326	123	38	-9	-33	2.5	2.9	-16.2	8
Glamorgan Barn Owl Group	2013	36	13	36	49	23	48	-24	-10	3.3	3.3	0.6	9
Gloucestershire Barn Owl Monitoring Programme	2014	102	13	13	70	15	21	-39	-2	2.6	2.5	5.1	10

Table 1. RELATIVE CHANGE IN NESTING OCCUPANCY AND BROOD SIZE

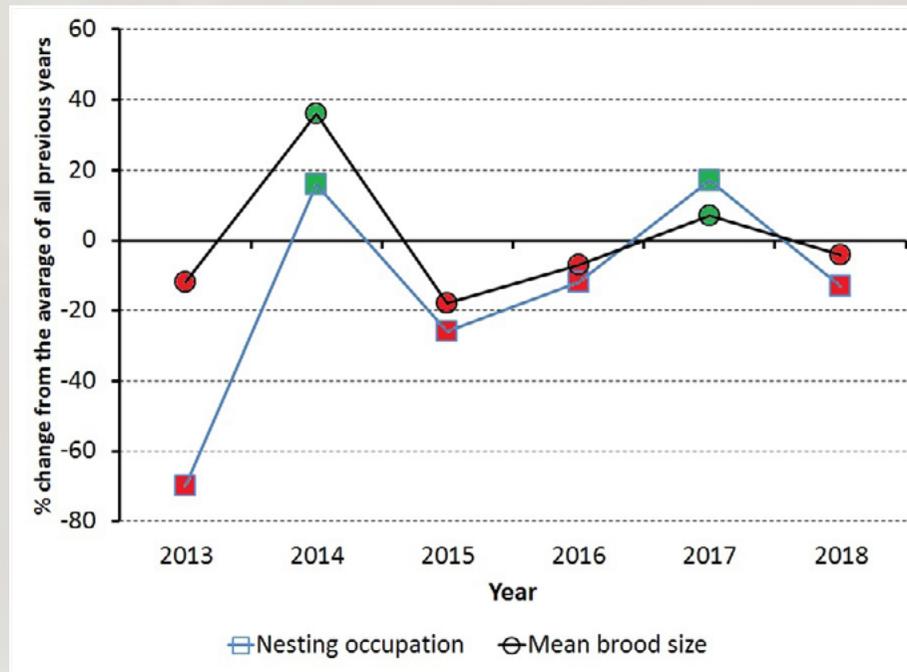
County / Group	Start year used	NESTING OCCUPANCY								MEAN BROOD SIZE			See notes
		2018			Average of All Previous Years (AAPY)			% Change from AAPY	Numerical change from AAPY	2018	AAPY	% change from AAPY	
		Sites checked	Nesting	% Nesting	Sites checked	Nesting	% Nesting						
Isle of Wight - Gil Gaylor	1997	46	33	72	44	41	95	-24	-8	2.6	3.0	-13.2	
Jersey Barn Owl Conservation	2006	165	35	21	106	38	36	-40	-3	2.3	2.5	-8.5	11
Manchester Raptor Group	2010	115	39	34	66	22	34	-1	17	2.3	2.6	-10.7	12
Norfolk - NW Norfolk Ringing Group	2002	270	71	26	450	194	43	-39	-123	2.1	2.2	-7.2	13
Northumberland (N) - Natural History Society of Northumbria Ringing Group - Philip Hanmer	2006	100	22	22	100	28	28	-21	-6	1.5	2.3	-33.3	14
Powys Species Habitat Protection Group	2014	69	26	38	58	21	36	5	5	3.3	3.1	4.1	15
Shropshire Barn Owl Group	2002	226	77	34	203	39	19	78	38	3.0	2.8	5.8	16
Somerset NE - Cam Valley Wildlife Group	1995	120	12	10	98	11	12	See unusual exclusions	1	2.5	2.5	-0.7	17
Staffordshire Barn Owl Action Group	2008	305	63	21	252	32	13	65	32	2.4	3.2	-24.6	18
Suffolk Community Barn Owl Project Thornham Owl Project, Suffolk Owl Sanctuary & others	2007	871	113	13	1240	226	18	-29	-113	2.2	2.1	2.1	

Table 1. RELATIVE CHANGE IN NESTING OCCUPANCY AND BROOD SIZE - continued

County / Group	Start year used	NESTING OCCUPANCY								MEAN BROOD SIZE			See notes
		2018			Average of All Previous Years (AAPY)			% Change from AAPY	Numerical change from AAPY	2018	AAPY	% change from AAPY	
		Sites checked	Nesting	% Nesting	Sites checked	Nesting	% Nesting						
Sussex - Dr. Barrie Watson	2007	143	83	58	124	57	46	26	26	2.2	3.1	-26.6	19
Sussex (W) - Graham Roberts	SDNG	25	13	52	30 E	12	40	30	1	3.0	2.8	7.1	20
Ulster Wildlife	2016	96	2	2	95	3	3	-34	-1	3.5	2.1	69.5	21
Vale of Belvoir Barn Owl Conservation Group	2007	182	26	14	146	26	18	-21	0	2.4	2.4	0.5	
Warwickshire - Stour Valley Wildlife Action Group/ S War. Barn Owl Survey/ Brandon Ringing Group	2011	496	73	15	267	54	20	-28	19	2.3	3.0	-24.8	22
Wiltshire - Lewis Raptor & Owl Group	2005	383	146	38	597	128	21	See unusual exclusions	18	2.8	2.1	32.7	23
Yorkshire - East Riding Barn Owl Conservation Group	SNDG	540 E	100 E	19	580 E	150 E	26	-28	-50	2.5	3.0	-16.7	24
Summary		Grand total	Grand total	% Nesting	Grand total	Grand total	% Nesting	% Change	Numerical change	Mean	Mean	% Change	
		6687 E	1229 E	19	6247	1392 E	22 E	-13	-93	2.6	2.7	-4.2	

Table 1. RELATIVE CHANGE IN NESTING OCCUPANCY AND BROOD SIZE - continued

Figure 1. STATE OF THE UK BARN OWL POPULATION RESULTS 2013-18



Variation in UK summary figures for Barn Owl nesting occupancy and brood size from 2013 to 2018. The vertical axis shows percentage change in summary figures relative to the accumulating average of all previous years. Red and green points represent negative and positive changes, respectively.

General Summary

Data received from 37 monitoring schemes shows that in 2018 the number of nesting pairs at monitored sites in the UK was 13% below the average of all previous data-collection years and the average number of young in the nest was 4.2% down.

Overall, 2018 was a poor year for Barn Owls. The only groups that recorded an unusually high number of nesting pairs were in Shropshire and Staffordshire. All other results, both in terms of nesting pairs and brood sizes, were more or less within the range of typical variation and on the whole quite poor.

Many data contributors flagged up climatic factors as the possible cause of their disappointing results. They blamed two extreme weather events, the 'Beast from the East', eight days of extremely cold/snowy conditions (24/02 to 4/03), and the eight-week drought which was officially declared as a 'heat wave' by the Met Office on 22nd June. Both events were caused by unusual variations in the Jet Stream related to Arctic Warming (Climate Change).

Given that greenhouse gas emissions are still rising (Global Carbon Project, 2018), there is little or no doubt that the increasing frequency and intensity of extreme weather events will continue to affect Barn Owls and (of course) virtually all living things.

The current 6th Mass Extinction Event (Ceballos *et al.*, 2017), for which Climate Change is only partly responsible, has already seen the world's wildlife decline by an average of 60% in the last 40 years (WWF, 2018). Climate change is predicted to cause an estimated 2% reduction per decade in global food production (IPCC, 2014) and widespread crop failures can have profound effects on farmland wildlife as well as humans.

Climate scientists are ringing the alarm bells as loud as they possibly can. Whilst the emergence during the year of movements such as 'Extinction Rebellion' and 'School Strike for Climate' give some hope, much more action is urgently needed if catastrophic outcomes are to be avoided.



*A brood of five healthy owlets ringed in Northern Ireland.
(See number 21 of the Contributors notes/comments)*

2018 Regional round up

The North – poor

One has to admire the sheer determination of Barn Owl monitors in Northern Ireland who checked 96 sites only to find two active nests rather than the grand total of three found in 2017. Given that three years of expanded monitoring has now taken place, continuing low occupancy suggests that Barn Owls in NI are rare rather than hugely under-recorded. In terms of sample size, the number of sites checked certainly warrants inclusion in the Results table (although % changes must obviously be viewed with caution). Keep up the good work Ulster Wildlife!

Further east in Dumfries and Galloway, where Barn Owls are generally far more numerous, there was another decidedly poor year with nesting occupancy 9% below their all-years average and mean brood size 16% below. Geoff Sheppard put this down to a “lack of voles”. Further east again, Northumberland Barn Owls did worse with Philip Hanmer reporting “the poorest breeding year since at least 2006” and that “climate (or in simple terms the weather) was the predominate determining factor”. Nesting occupancy was 21% below average and mean brood size was down by 33%.

Mid/north Wales and mid/west England – average to good

Out of all 25 counties in this Report, the highest nesting occupancy recorded was in Shropshire (78% above average: well done Shropshire!) with adjacent Staffordshire a fairly close runner up at +65%. In nearby Cheshire nesting occupancy was a healthy 11% above their all-years average and in Manchester it was almost bang on (-1%).

The comment from Shropshire Barn Owl Group - “a productive breeding season” - was certainly not repeated around the country (see Contributors Comments - 16).

Helen Cottam’s comment (Comment 18) on behalf of the Staffordshire Barn Owl Action Group is well worth reading. She not only noted the ‘Beast from the East’ effect (which we all felt from late Feb into March) but also “...the long, dry, hot summer having an impact on prey abundance. The grass struggled to grow and dried out”.

In Powys the number of nests and mean brood size were both down on 2017, which Jonathan Sloan (Powys Species Habitat Protection Group) put down to “heavy snow & prolonged periods of heavy rain & high winds”. Nevertheless, 2018 was still a modest 5% above their all-years average. Jonathan went on to say “Overall we were pleased with the numbers of breeding pairs as we were expecting far less”.

The East of England across to South Wales – very poor

Oh dear. In East Yorkshire, Norfolk, Suffolk, Leicestershire, Warwickshire, Gloucestershire, and Glamorgan the number of nests recorded ranged from 21 to 39% below average. Only Buckinghamshire and Essex bucked the trend with the former only 1% down and the latter recording a modest rise in nesting occupancy of just 4%. Considering all nine counties, mean brood size varied between 25% below and 5% above average. Overall it was a pretty bleak picture.

According to John Middleton (NW Norfolk Ringing Group) it was their “Worst year ever” – in fact only the disastrous year of 2013 was worse. Paul Leadbeater (Stour Valley Wildlife Action Group et al.) commented “a poor year” and Gordon Kirk (Gloucestershire Barn Owl Monitoring Programme) reported “a very disappointing year - many pairs just didn’t get started”.

Like Helen Cottam in Staffordshire, Rob Salter (East Riding Barn Owl Conservation Group) blamed The Beast from the East for “barn owls not reaching their potential breeding success”. And again, like Helen, Lynne Lambert (Bucks Owl & Raptor Group) commented on the drought - “exceptionally hot summer weather made the situation worse. Fields were harvested early and grass was slow to regrow which undoubtedly affected the vole population”. On a more positive note, and despite their nesting occupancy being 24% below average, Steve Thomas (Glamorgan) commented - “our Barn Owl population demonstrated admirable resilience”.

SE, S, & SW England and Jersey – mixed results

On the positive side, in Sussex both Graham Roberts and Dr. Barrie Watson reported above average nesting occupancy (+30% and +26% respectively) and the Barn Owl Trust in Devon and E. Cornwall found 33% more nests than usual. Likewise the two monitoring schemes in Berkshire recorded 6 and 21% more nests than usual. John Dellow (West Berkshire Countryside Society Barn Owl Group) said “we rate it as a ‘good’ year”. On the negative side, mean brood size was 13% below average in John’s area, 15% below in the adjacent Middle Thames area (Carl Hunter Roach), and 27% below in West Sussex (Dr. Barrie Watson).

Some figures for Wiltshire (Salisbury Plain) and Somerset don’t appear in Table 1 (see Unusual Exclusions). However, the comments from Wiltshire (Major Nigel Lewis – Lewis Owl and Raptor Group) were decidedly negative - “21% of nesting pairs failed to raise young due to vole shortage caused by the unseasonal drought that killed off the grass, 23 pairs didn’t lay, there were 33 singleton owls, no second broods... a prolonged lack of food”. Down in Cornwall, Mark Grantham (West Cornwall Ringing Group) made a similar comment “... the dry summer and extreme lack of grass growth presumably limited rodent numbers”. On Jersey and the Isle of Wight, nesting occupancy was well below normal (-40% and -24% respectively) and mean brood sizes were also down. Despite this, Marc Peters (Jersey Barn Owl Conservation) remained optimistic (see Contributors Comments).

Although figures from Somerset (Andre Fournier, Cam Valley Wildlife Group) were almost exactly in line with their all-years-average, both for nesting occupancy and brood size, Andre reported “Nesting was about 4-5 weeks late as a result of the Beast from the East”.



Volunteers with the Essex Barn Owl Conservation Project.

2018 Contributor's notes/comments

1. Berkshire - West Berkshire Countryside Society Barn Owl Group - John Dellow

Our total of 107 fledged chicks was the third highest over the last 10 years. So, we rate it as a “good” year. We are not aware of any attempts at second broods and definitely none were successful. This was probably due to it being a late season. 21.9% of our boxes supported successful breeding. This was better than the long-term average but we had hoped for even better as we have gained experience in selecting new sites. The mean brood size of 2.61 was typical over recent years. The “Brood size” statistic is based on the number of birds believed to have fledged. Unhatched eggs and chick losses before fledging have not been counted. This is consistent with previous years.

2. Berkshire (N) and Buckinghamshire (S) – Middle Thames Ringing Group - Carl Hunter Roach

Fewer boxes were inspected this year compared with last as we focused our efforts on our RAS (Re-trapping Adults for Survival) sites [Eds. - which included the use of PIT Tags – see photo]. If we include roosts, 2018 had the fewest boxes occupied of the four years of our project (n=28). The boxes in proximity to The Thames had a greater chance of occupancy and success than those more distant sites; presumably driven by the long dry summer. [Editors' note: Middle Thames Ringing Group was previously known as Bisham Barn Owl Group]

3. Buckinghamshire - Bucks Owl and Raptor Group - Lynne Lambert

After a good season in 2017 we expected a poorer year but the exceptionally hot summer weather made the situation worse. Fields were harvested early and grass was slow to regrow which undoubtedly affected the vole population. Some early barn owl clutches were deserted and many birds chose not to breed. We had 12 traditional sites that did not have any barn owls present and another 12 that had birds there but they did not breed.

4. Cheshire Barn Owl Groups - Dr. John Wild

Another good year probably reflecting a decent summer despite a cold early spring.

5. Cornwall - West Cornwall Ringing Group - Mark Grantham

We have had some success in recruiting new sites (new and existing boxes), so the occupation figures are a bit unreliable, but the rest of the numbers are good. In summary, the year started off well with quite good occupancy and good clutch sizes, but the dry summer and extreme lack of grass growth presumably limited rodent numbers, so brood sizes were much reduced as the year went on. However, it was still a pretty good year.

Of most interest though were the large number of breeding first-year birds, which is also highlighted in the blog. Our presumption is that the cold late winter period really hit adults (even Cornwall had several days of snow



An adult Barn Owl fitted with a PIT tag, a passive device that is activated when it passes close to a reader. Photo: Carl Hunter Roach.

cover), with these birds being replaced by the survivors of a much larger pool of young birds. This seems a bit counter-intuitive, but it is maybe encouraging that the pool of non-breeding birds is in a very healthy state, so when sites become vacant they are quickly filled. See: <https://cornishringing.blogspot.com/2018/08/cornish-barn-owls-in-2018.html>

[Editors' note: In some previous reports, the West Cornwall Ringing Group results included sites that had been occupied, but were not used for nesting. We have now corrected the Average of All Previous Years to only include sites where nesting actually occurred. This inconsistency made almost no difference to the UK summary figures in previous years.]

6. Lincolnshire - Gary Steele

Unfortunately Gary was unable to provide data for 2018 due to a serious leg injury. However, he did contribute the following comments:

I understand from colleagues who operate other birds of prey nest box schemes within Lincolnshire that Barn Owls didn't have a particularly good year breeding wise, with in many cases the start of egg-laying being delayed after birds endeavoured to get back into condition in the aftermath of 'The Beast from the East' followed by smaller than usual broods plus virtually NO double brooding. Also, I suspect due to the harsh 2017/2018 winter, several of the young Barn Owls I ringed in the summer of 2017 were subsequently found dead in late winter/early spring of this year through starvation following their dispersal.

7. Essex Barn Owl Conservation Project – Essex Wildlife Trust - Emma Ormond

Out of 186 sites checked, Emma reported that:

59 nest boxes inspected were occupied by Barn Owls (20 were not active nest sites).

30 adults and 105 chicks were discovered during inspections.

56 nest boxes were occupied by other species (mainly Stock Dove, a few squirrels, 1 hornets' nest and 1 Kestrel).

71 nest boxes were unoccupied by any species.

8. Dumfries and Galloway Raptor Study Group - Geoff Sheppard

A good start to the breeding season but a lack of voles as the year went on depressed the overall number of young ringed (most sites not checked later so number fledged may be less).

[Editors' note: Please note that the results that have been included in previous years only represented the most westerly area of the region. In contrast, the figures that are presented this year represent most of the area covered by the Dumfries and Galloway Raptor Study Group, which works within the Scottish Raptor Study Group.]

9. Glamorgan Barn Owl Group - Steve Thomas

It was with nervous anticipation that we began checking our established sites this year following exceptionally cold weather throughout March and April including some of the heaviest snowfall in the UK. Some notable failures of historically reliable nest sites were offset by successful newly established nest sites. As an area our Barn Owl population demonstrated admirable resilience against unaccommodating intensive farming practices and unforgiving weather conditions.

10. Gloucestershire Barn Owl Monitoring Programme - Gordon Kirk

Generally a very disappointing year - many pairs just didn't get started. Of the 34 chicks, 26 were ringed.

11. Jersey Barn Owl Conservation - Marc Peters

It feels to me, that our results (which were well below average) don't really reflect how Barn Owls did in Jersey during the year. There were a large number of fledglings seen that were never ringed or seen within the box. There was also an increase in the number of boxes being used as roosts. It felt like a good year for the Barn Owl in Jersey.

12. Manchester Raptor Group - Judith Smith

There were several more sites where we knew breeding took place but for one reason or another it was impossible to examine the nest. One problem this year was that the breeding season was extended, probably due to the 'Beast from the East' delaying laying. We followed those boxes with CCTV first, to give ourselves the best chance of finding young but found a few very reliable sites had almost certainly fledged and gone by the time we visited, as the cold blast hadn't affected them.

At a number of sites eggs were laid but never hatched (for various reasons). Personal problems involving carer responsibilities and ill-health also affected us this year. Second visits to nests found 12 dead chicks or remains of chicks, at five nests. I put this down to the heat - some pairs caught out by the heat having been delayed laying due to the 'Beast from the East'. These 12 were included in the total of 95 known young.

The extreme heat meant that one brood had to have fluids administered. One of these was already dead but the rest survived. In total an average year but the average brood size of 2.3 may be an underestimate. Six sites were used for the first time.

13. North-West Norfolk Ringing Group - John Middleton

Worst year ever following 2017 which was the second best ever.

14. Northumberland (N) – Natural History Society of Northumbria Ringing Group - Philip Hanmer

This study (of around 100 sites) indicates that this was the poorest breeding year since at least 2006 for Barn Owls and that the climate (or in simple terms the weather) was the predominate determining factor in this outcome. Only 22 pairs tried to nest; and only 13 succeeded in raising young.

Consequent on the poor winter and appalling spring weather many birds did not even try to nest; others laid eggs as the weather improved towards the end of May but then lacking the body reserves to incubate them successfully gave up (there were 9 failed broods). Many adult birds seemed to be under weight.

While the weather improved in the summer, becoming remarkably warm (not to say hot) no late or second broods were located. This was probably because it also became very dry which suppressed the small mammal population; essential as the owl's food supply.

The average number of eggs laid was 4 (little different than usual); although one pair laid 8 and then abandoned them. The average number of owlets fledged was only 1.4 but one pair raised 4 and 4 pairs raised 3. Only 30 owlets were ringed and fledged.

Ten new adult Barn Owls were ringed and 23 were re-trapped; including one female which is 9 years and another 7 years old. The 9 year bird was ringed as an owlet in 2009 and has itself bred successfully (always early) every year since 2012 in a box close to the sea; only a few miles from its natal site. The 7 year old bird is our now resident female owl from Dumfries (ringed in 2011) and bred again successfully, as she has done every year since 2012, raising 3 young. A female that failed to breed last year (when she was only a year old) did breed successfully north of Wooler (raising one young); while another that was hatched on the coast in 2014 and had moved inland to Whittingham to breed successfully in 2017 failed to hatch her eggs this year. Similarly a female with 'Guttata' characteristics (of North Eastern Europe) which had bred successfully near Craster in both 2016 & 17 also failed.

However, another Guttata type owl raised young (for probably the second time) near Crookham. Two of the pairs of owls that failed were only one year old; as were another two that occupied boxes but did not breed; and another pair found in a Goldeneye Duck box at the end of August, just roosting. It's to be hoped these birds will all survive the winter to breed successfully in 2019.

Generally the successful nests were in the north and towards the coast; while inland towards the south and west very few owls bred successfully. Jackdaws again occupied a number of nest sites but were less of a problem than normal. Kestrels did not seem to be able to take advantage of the owl's failure and only two pairs used nest boxes. A pair of Tawny Owls took over one Barn Owl box and raised 2 young; although this box is near a conifer plantation so perhaps this is not surprising. Successful Barn Owl nests were near: Longhorsley, Netherwitton, Warkworth, Howick, Craster, Wooler, Berwick upon Tweed and Lindisfarne.

Thanks are due to all those who have helped with this project; in what has been a frustrating year.

15. Powys Species Habitat Protection Group - Jonathan Sloan

It is hardly surprising that numbers are down on last year given the bad winter we had in this part of Wales, heavy snow & prolonged periods of heavy rain & high winds. However overall we were pleased with the numbers of breeding pairs we had as we were expecting far less. Some of the old sites didn't breed, however some new sites bred for the first time. Brood sizes were also down on last year, which was our best year ever.

16. Shropshire Barn Owl Group - Glenn Bishton and John Lightfoot

2018 proved to be a productive breeding season following another productive season in 2017, with 201 chicks produced in 2018 compared to 225 in 2017. A two-year cycle in breeding productivity in Shropshire, probably correlated with fluctuations in the field vole population, is increasingly evident from our records since 2002, with peak years in productivity followed by a decline (often steep) the following year. Therefore, the relatively small decline in 2018 following a high in 2017 is interesting.

17. Somerset (NE) - Cam Valley Wildlife Group - Andre Fournier

A late start due to illness caused us to not check all the boxes this year so we omitted those unlikely to be occupied. Sites were checked either by inspection, from ground level or by asking site owners. Nesting was about 4-5 weeks late as a result of the 'Beast from the East' weather. As a result we carried out inspections 4-5 weeks later than usual. We had at least 2 sites where the pair failed to breed, 4 with a single bird when we inspected, and 2 sites which were empty but where owners had seen birds.

18. Staffordshire Barn Owl Action Group - Helen Cottam

Barn Owl pairs have remained high again for 2018 despite a cold winter with regular bouts of snow brought in by the Beast from the East! However, brood size was down this year, compared with 2017, with the long, dry, hot summer having an impact on prey abundance. The grass struggled to grow and dried out, farmers in the area even struggled with the number of cuts and quality of silage. We counted 7 nest sites with abandoned eggs and 6 sites where chicks died in the box or were found dead outside, close to box. We were mostly finding nests with 2-3 chicks, three nests with 5 and one nest with 7. Interestingly, the average brood size in the Staffordshire Moorlands (on higher ground) was 2.69 compared with the rest of Staffordshire at 1.96.

19. Sussex Ornithological Society - Dr. Barry Watson

One site had 7 eggs in May and was not re-checked. There were 4 broods of 5 young. One box had 3 dead chicks, one looking sick and only two considered fit to ring. At five sites one or two chicks were found well grown but freshly dead at the time of the heat wave/drought that we had.

20. Sussex (W) - Sussex Ornithological Society - Graham Roberts

38 young were ringed from 13 broods (one chick was too small to ring). This included two broods of 5 young and two broods of 4 young. All were in nestboxes.

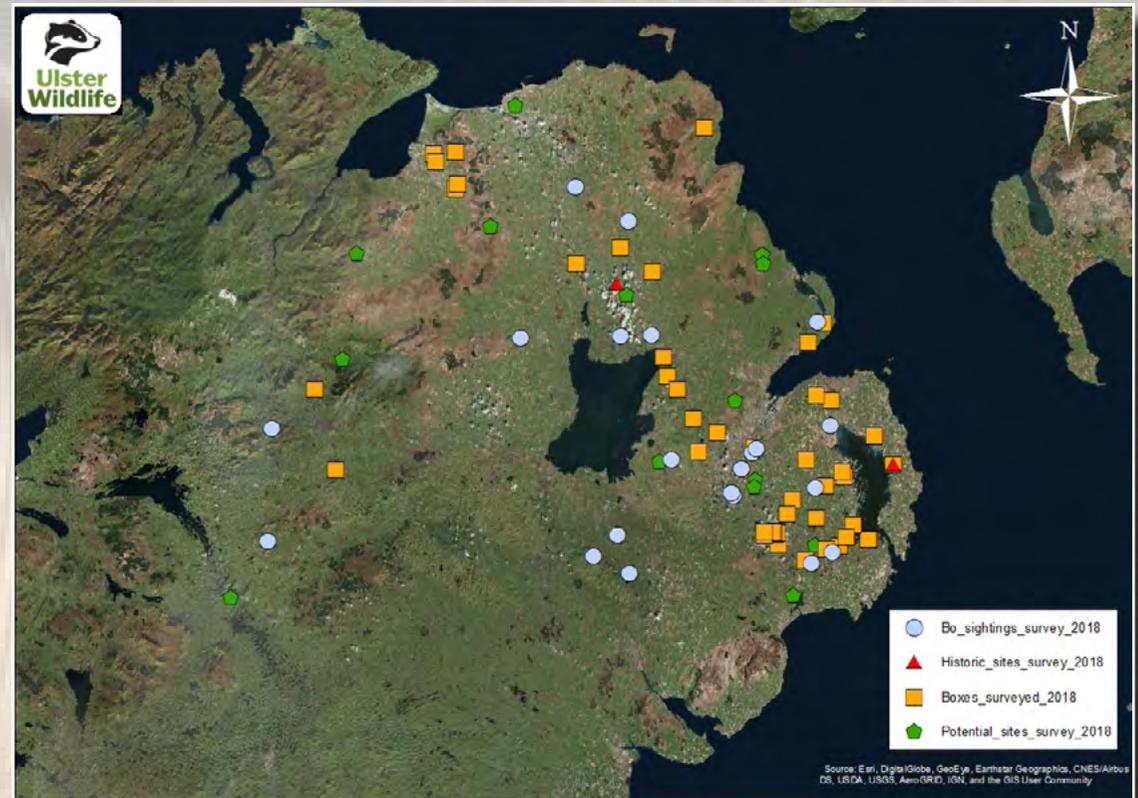
21. Ulster Wildlife - Solène Loiseau

In Northern Ireland, Barn Owls are still very scarce and hard to find. Unfortunately, despite the huge effort deployed by our 49 volunteers to check 96 sites, no additional evidence of Barn Owl was discovered during the annual survey. Moreover, one of the three known active nest sites of last year, where the male was injured by a car and unable to be released, was recorded as inactive this year. One barn owl was also found dead on the side of a road in August 2018.

Fortunately, 2018 also had some exciting news. Out of the two other known nest sites, one successfully fledged 2 chicks, one male and one female. Because it was a very tough winter, the nest-minder of the last site started to supplementary feed the parents. This extra help enabled the pair to raise 5 healthy Barn Owl chicks. At both sites, the chicks were ringed. A lot of effort was put into these two areas, especially by erecting additional barn owl boxes.

In addition, we received two very encouraging records of potential nest sites. Barn Owl chicks were heard this summer in a new location, and even though the precise location was not found, we are hoping to pin-point it soon. Finally, a farmer reported the presence of Barn Owls on his land later on this year, and feathers and pellets were found in two of his Barn Owl boxes.

Because of the difficult situation that we are experiencing in Northern Ireland, two ambitious projects are under discussion for the near future. We would like to radio track the young and install a permanent webcam in one of our known nest sites. This will enable us to gather essential information about Barn Owl ecology and behaviour and to raise awareness amongst local people. We are really looking forward to 2019 to continue our conservation work on this iconic species.



Barn Owl observations reported by Ulster Wildlife in 2018

22. Warwickshire - Stour Valley Wildlife Action Group, South Warwickshire Barn Owl Survey, and Brandon Ringing Group - Paul Leadbeater

The 73 active nest sites recorded include 1 second brood and 1 re-lay. In addition to the breeding pairs, 30 non-breeding pairs and 23 single birds were recorded at other sites. A poor year.

23. Wiltshire - Major Nigel Lewis

In 2018, 21% of nesting pairs failed to raise young due to vole shortage caused by the unseasonal drought that killed off the grass. It does not reflect the overall Barn Owl situation in Wiltshire.

Additionally, there were 23 pairs that did not breed (no eggs laid) and there were 33 singleton owls that had not paired off, presumably because they were underweight and had not reached breeding condition. These owls would have made a significant difference to the breeding pairs in Wiltshire.

Finally, we found no owls with second broods. A final indicator of the prolonged lack of food.

24. Yorkshire - East Riding Barn Owl Conservation Group - Rob Salter

A below average year. It had huge potential for a good year. All pulli I ringed were very well fed. The extremely cold weather in early spring was to blame for the Barn Owls not reaching their potential breeding success.



Monitoring a Barn Owl nestbox in the Stour Valley. Photo: Paul Leadbeater.

Previous years: 1995 to 2017

1995-2009

The only reliable estimate of Barn Owl numbers in the UK was c. 4,000 pairs in the period 1995-97 (Project Barn Owl Report, 2000) and there is some evidence that numbers increased in the period 1997-2009 particularly in eastern England. Additionally, the BTO Bird Atlas 2007-11 showed a northerly range expansion since the previous 1993 atlas. These increases were probably the result of a general climate warming in the period 1989-2009 and the erection of numerous nestboxes in, for example, parts of The Fens and East Anglia. It is quite probable that in 2009 the UK Barn Owl population level was substantially greater than 4,000 pairs.

2009-2012

There can be little doubt that the unusually severe winters of 2009/10 and 2010/11 reduced total population size although 'before and after' population levels will never be known. In spite of these setbacks, additional data submitted to the authors suggest that 2012, with the hottest March since 1997, was quite a reasonable year. For example, the Suffolk Community Barn Owl Project which monitored a staggering 1,191 boxes in 2012 recorded 319 nests which, at the time, was the highest number since monitoring started in 2007. However, in some parts such as SW Scotland (Geoff Sheppard pers. com.) and Cumbria (Ian Armstrong pers. com.) 2012 was a very poor year and in Devon widespread nestling mortality resulted in the average brood size dropping from 3.68 to 2.75 during the wettest June since 1766.

2013

Given that 2012 was a relatively good year (overall) and winter '12/'13 was much less severe than the preceding three, Barn Owl numbers at the start of 2013 were probably quite reasonable (probably lower than in 2009 but possibly still higher than 1995-97). March 2013 was the coldest since 1962 and during that month the number of dead Barn Owls reported to the BTO was 280% above normal.

Without exception, every monitoring scheme that contributed data reported a high proportion of nest sites with no signs of occupation and Major Nigel Lewis's comment summed it up very well: "the worst year in the 30 years I have been owling in Wiltshire". The State of the UK Barn Owl Population 2013 showed that nesting occupancy in 2013 was an estimated 72% below the all-years average and mean brood size (2.63) was down by 12% (based on information provided by 26 data contributors who between them checked an estimated 6,344 potential nest sites).

The widespread absence of adults from annual nest sites and exceptionally high mortality recorded by the BTO suggested that the missing birds were dead. Conversely, the exceptionally high nesting occupancy the following year suggested that the missing birds had been simply roosting away from their nest sites. Fortunately, the UK's largest county-wide survey, which included the rechecking of all known roost sites as well as nest sites was carried out that same year. If the birds were alive and roosting elsewhere, the big drop in nesting occupancy should have been mirrored by a similar or bigger increase in roost occupancy (bigger because of birds roosting singly). In the event this was not the case. The 2013 Devon Barn Owl Survey report, based on the checking of 1,070 sites, showed a 65% drop in nesting occupancy and an increase in roost occupancy of only 16.9%. These figures support the view that a high proportion of the missing birds were not simply roosting elsewhere but were in fact dead.

This begs the question "where did all the Barn Owls come from that nested in 2014?" They must have been a combination of those that survived 2013 and young birds produced very late in 2013 who were all probably helped by the fact that winter-spring 2013-14 was so mild that Field Voles were even breeding in mid-winter (see State of the UK Barn Owl Population 2013).

2014

With a mild winter followed by an early spring and a long and pleasant summer, 2014 turned out to be the warmest year ever recorded - according to the National Climatic Data Centre. Great weather happened to coincide with a peak year for small mammals and Barn Owls had a very productive year in many areas. Berkshire, Lincolnshire, Shropshire and Warwickshire did particularly well with nesting occupancy 71 to 193% above normal (UK average +16%). Brood sizes were phenomenal in many areas with records broken in Suffolk and Wiltshire. Broods in Somerset were, on average, 84% bigger than normal (UK average +35%).

Sadly, 2014 was not an amazing year everywhere. Brood sizes in parts of SW Scotland, east Wales and the Isle of Wight bucked the trend by being no higher than normal and the mean brood size of the biggest UK Barn Owl monitoring scheme in Lincolnshire (the Bowden and Ball Ringing Group) was only 13% above their all-years average (see State of the UK Barn Owl Population 2014).

2015

Overall, 2015 was a poor year for Barn Owls in the UK with nesting occupancy down by 26% and mean brood size down by 16%. Some quite extreme geographical variation occurred between regions, within regions and even within counties. Barn Owls in Lincolnshire experienced an even worse year than in 2013 with nesting occupancy 95% below the all-years average and mean brood size 41% down. In Mid Sussex nesting occupancy was 47% down but, in complete contrast, in West Sussex it was 16% up despite the fact that these areas are immediately adjacent and even overlap a little. Further north, where the Bisham BOG straddles the Berks/Bucks border, nesting occupancy was only 7% below average but the Bucks ORG reported it to be a disappointing 66% below.

Given that winter 2014/15, and 2015 itself, were generally mild it is most unlikely that the poor results were due to the weather but due to a general lack of prey. It is well known that annual variations in small mammal abundance are not synchronised across the whole country and that certainly seems to have been the case in 2015.

2016

Sadly, 2016 was another poor year. Data received from 32 monitoring schemes shows that the number of nesting pairs in the UK was 12% below the all-years average and the average number of young in the nest was 7% below. Barn Owls had a poor to very poor year in SW and S England, Jersey, N Norfolk, parts of Lincs. and E Yorkshire, parts of Powys in Wales and West Galloway in Scotland. Conversely, Barn Owls in the west of England (from Cheshire down to Buckinghamshire), and in North Northumberland, Suffolk, and the Isle of Wight had a quite good to good year.

Globally, 2016 was once again the warmest year ever recorded. Here in the UK, winter 15/16 was the third warmest and seconded wettest recorded since 1910. With few exceptions, such as November flooding thanks to Storm Angus, long-duration extreme weather events were not a major feature of 2016. Therefore the observed temporal changes in nesting occupancy and brood sizes were probably more influenced by variations in small mammal abundance than by the weather.

2017

Overall 2017 was a better year. Nesting occupancy was 17% above average and mean brood size 6.6% above average. This positive result coincided with weather that was slightly warmer than average, with marginally lower rainfall. In particular, unusually warm weather prevailed between February and June, when Barn Owl nesting commences. In fact, the Met Office reports that the spring of 2017 “was the equal-warmest on record, with 2011.”

In Northumberland 64% of boxes had active nests in them, as opposed to the previous average of 25%. In the east of the country Norfolk had a notably high nesting occupancy, with 60%, and Suffolk also had a 51% increase on the average of all previous years. These areas also produced relatively higher brood sizes. Further west, Shropshire, Staffordshire and Warwickshire showed nesting occupancy that was 84%, 72% and 77% above average, respectively, and to the south Buckinghamshire reported 53% above average. Unsurprisingly, the trend was not without its exceptions. Poorer results came in from Galloway, Lincolnshire and Glamorgan, where nesting occupancy was 22%, 39% and 30% below average, respectively. Nesting occupancy and average brood size was also lower than average on the island of Jersey and the Isle of Wight.



Learning about Barn Owl ringing with Carl Hunter Roach of the Middle Thames Ringing Group

Further information

Barn Owl Conservation Handbook, a comprehensive guide for ecologists, surveyors, land managers and ornithologists.

Barn Owl Trust (2012) Pelagic Publishing, Exeter.

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

BTO Bird Atlas 2007-11: The Breeding and Wintering of Birds in Britain and Ireland. Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S., & Fuller, R.J. (2013) BTO Books. British Trust for Ornithology, Thetford.

Carbon Budget 2018. Global Carbon Project (2018) [www.globalcarbonproject.org/carbonbudget].

Climate Change 2014 Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the IPCC (Intergovernmental Panel on Climate Change) [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

Population Trends in British Barn Owls (*Tyto alba*) and Tawny Owls (*Strix aluco*) in Relation to Environmental Change. Percival, S.M. (1990) BTO Research Report, 57. British Trust for Ornithology, Thetford.

Project Barn Owl Final Report. Toms, M.P., Crick, H.P.Q. & Shawyer, C.R. (2000) BTO Research Report No. 197. HOT Research Report No. 98/1. British Trust for Ornithology, Thetford.

State of the UK Barn Owl Population 2013. Barn Owl Trust (2014) Ashburton

State of the UK Barn Owl Population 2014. Barn Owl Trust (2015) Ashburton

State of the UK Barn Owl Population 2015. Barn Owl Trust (2016) Ashburton

State of the UK Barn Owl Population 2016. Barn Owl Trust (2017) Ashburton

State of the UK Barn Owl Population 2017. Barn Owl Trust (2018) Ashburton

WWF. 2018. Living Planet Report - 2018: Aiming Higher. Grooten, M. and Almond, R.E.A.(Eds). WWF, Gland, Switzerland.

Links

Berkshire	Middle Thames Ringing Group West Berkshire Countryside Society Barn Owl Group
Buckinghamshire	Buckinghamshire - Bucks Owl & Raptor Group
Cheshire	Cheshire Barn Owl Groups
Cornwall	West Cornwall Ringing Group
Devon	Barn Owl Trust
Essex	Essex Barn Owl Conservation Project
Galloway	Scottish Raptor Study Group
Glamorgan	Glamorgan Barn Owl Group
Gloucestershire	Gloucestershire Barn Owl Monitoring Programme
Jersey	Jersey Barn Owl Conservation
Manchester	Manchester Raptor Group
Norfolk	NW Norfolk Ringing Group - John Middleton
Northern Ireland	Ulster Wildlife
Northumbria	Nat. Hist. Soc. of Northumbria Hancock Mus. R.G.
Powys	Powys Species Habitat Protection Group
Shropshire	Shropshire Barn Owl Group
Somerset	Cam Valley Wildlife Group
Staffordshire	Staffordshire Barn Owl Action Group
Suffolk	Suffolk Community Barn Owl Project
Sussex	Sussex Ornithological Society
Warwickshire	Warwickshire - Stour Valley Wildlife Action Group

