STATE OF THE UK BARN OWL POPULATION — 2023



'Overall another good year for Barn Owls but with marked regional differences.'

Results from independent groups collated by the Barn Owl Trust





















































State of the UK Barn Owl population – 2023 Contributing groups

Barn Owl Trust

Barn Owl Conservation Oxfordshire

Bisham Barn Owl Group

Brandon Ringing Group

Broxton Barn Owl Group

Bucks Owl & Raptor Group

Cam Valley Wildlife Group

Derbyshire Ornithological Society

East Cheshire Barn Owl Group

East Cleveland Nest Box Network Project

East Riding Barn Owl Conservation Group

Garry Steele

Gil Gaylor

Glamorgan Barn Owl Group

Gloucestershire Raptor Monitoring Group

Greater Gwent Barn Owl Initiative

Goldcliff Ringing Group

Jersey Barn Owl Conservation

Manchester Raptor Group

Middle Thames Ringing Group

Mid Cheshire Barn Owl Group

Neath Port Talbot Barn Owl Group

North Cheshire Barn Owl Group

North-East Cheshire Barn Owl Group

Oxfordshire Ornithological Society

Philip Hanmer - Nat. Hist. Soc. of Northumbria Hancock Mus. R.G.

Powys - Species Habitat Protection Group

Scottish Raptor Study Group

Shropshire Barn Owl Group

South Cheshire Barn Owl Group

South Cleaveland Ringing Group

South Wirral Barn Owl Group

Staffordshire Barn Owl Action Group

Stour Valley Barn Owl Group

Suffolk Bird Group

Sussex Ornithological Society

Southam & District Owl Conservation Project

The Salisbury Plain Raptor and Owl Ringing Group

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

The State of the UK Barn Owl Population (SOUKBOP) report is an amalgamation of data from independent groups and individuals from around the UK, who all monitor a certain number of potential Barn Owl nest sites each year. While the report doesn't attempt to estimate current Barn Owl population size, it is a useful resource to evaluate how Barn Owls have fared regionally and how this compares to previous years.

Over the 2023 breeding season, an incredible 5,170 potential nest sites were checked by dedicated individuals; with 1,559 of these sites holding active Barn Owl nests. Checking a Barn Owl nestbox is an exciting and rewarding experience with often surprising results. Sometimes nestboxes that are assumed empty will contain quietly nesting Barn Owls, while other times you can be met by other cavity nesters including Jackdaws, Stock Doves, Kestrels, Grey Squirrels, Little Owls, Tawny Owls, Mandarin Ducks and Muscovy Ducks. Nestboxes may also be adopted by Bees, Wasps and Hornets - although hopefully their presence is noticed before ascending the ladder! As older, experienced monitors retire, we hope new indviduals become inspired and join Barn Owl conservation groups, nestbox checking schemes and ringing groups around the UK.

A full list of this year's contributors can be found on page 2, with links to their own webpages (where available) on page 31 and their comments on the 2023 season on pages 14-23. We are delighted to include new data from Neath Port Talbot Barn Owl Group in this year's report.



State of the UK Barn Owl Population - 2023

Definition of Terms Used in Tables and Text

Start year - The year from which we begin caculations of averages. For some projects, monitoring began well before this date.

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 observed or estimated figures for each year from the effective start year, up to and including 2022.

% change from AAPY under nesting occupancy - The percentage change between the proportion of sites occupied in 2023 and the mean proportion of sites occupied in all previous years:

Numerical change from AAPY – The difference between 2023 and AAPY in the number of sites where nesting occurred (2023 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: I) 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 2023 and the AAPY:

E - Estimated.

Please note that rounding table values to whole numbers can lead to apparent discrepancies in calculations of % change from AAPY.

Caveats

- I. The figures in Table I are accurate, unless marked 'E'. However, methodological variation between groups and the limitations of coverage mean that the summary row can only suggest how nesting occupancy and brood size changed in the UK population as a whole.
- 2. In some cases, averages of previous years are updated as projects accumulate enough years to rely wholly on observed data rather than estimates, or as corrections are incorporated.
- 3. Anomalies can arise due to year-to-year changes in numbers of 'Sites Checked', affecting comparisons both in terms of the 'Average of All Previous Years' and 'Numerical change'. This is because the editors have not imposed criteria for the inclusion/exclusion of individual sites.
- 4. How potential nest sites are counted and the proportion of nest sites that were monitored varies between groups and, to a lesser extent, may sometimes vary between years.
- 5. 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.
- 6. The vast majority of sites are checked by inspection to confirm/discount breeding and determine brood size, with a few sites relying on nest cameras for this purpose. However, some groups accept reports from trusted/knowledgeable site owners who have observed breeding behaviour without inspecting the nest place. This is particularly useful when nest cavities are inaccessible.
- 7. At most sites, only one nest inspection is carried out. Chicks may die before this nest inspection or may die between inspection and fledging. Some sites are visited more than once and figures given for brood size may be derived from either one of these visits.
- 8. The calculation of AAPY 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 calculations of averages because of restrictions on farm visits, such as in 1996 due to BSE, 2001 due to Foot and Mouth Disease, and 2020 due to Covid-19.

*Unusual Exclusions

For 3 contributors (see below), the figures used to calculate the percentage change in nesting occupancy from AAPY are excluded from the summary row. However, the change in mean brood size from the AAPY is still included.

Bucks Owl & Raptor Group, Buckinghamshire.

Following the sudden, sad passing of Norman Shepherd, understandably less boxes were checked than normal and so 2023 results cannot be directly compared against the AAPY. However BORG noticed a pattern of pairs occupying sites early in the year but abandoning or delaying nesting attempts. Despite this and the unsettled weather, the overall fledging rate in July, August and September was not too bad.

East Riding Barn Owl Conservation Group, Yorkshire.

Fewer nest sites were checked than usual and so a comparison with the AAPY is fairly uninformative on this occasion. Although less boxes were checked, Rob Salter reports 2023 as starting off slowly but with increased brood sizes for birds nesting later on in the season.

Suffolk Bird Group.

Fewer nest sites were checked compared to normal due to monitors stepping back and/or retiring which makes comparing against the AAPY fairly uninformative on this occasion. Mike Crawford however, does report 2023 to be a good year for breeding Barn Owls in general.

Table I. RELATIVE CHANGE IN NESTING OCCUPANCY AND BROOD SIZE

					Nesting C	Occupancy			Mean Brood Size				
County / group	start year	2023		Average of All Previous Years (AAPY)							%		
		sites checked	nesting	% nesting	sites checked	nesting	% nesting	% change from AAPY	numerical change from AAPY	2023	AAPY	change from AAPY	See notes
Berkshire - West Berkshire Countryside Society Barn Owl Group	2010	215	41	19	153	30	20	-2	11	2.6	2.8	-8	1
Berkshire (E) & Buckingham- shire (S) - Bisham Barn Owl Group	2015	82	21	26	97	21	21	20	0	2.5	2.3	7	2
* Buckinghamshire - Bucks Owl & Raptor Group	2006	141 E	46	33	226	30	13	See unusua	l exclusions	2.6	2.6	1	3
Cheshire Barn Owl Groups	2006	1010	205	20	1251	140	11	82	65	2.9	2.7	9	4
Cornwall – West Cornwall Ringing Group	2011	127	98	77	65	38	59	31	60	3.2	3.1	4	5
Derbyshire Ornithological Society	2019	57	12	21	71	16	22	-6	-4	3.8	3.2	19	
Devon & Cornwall (E) - Barn Owl Trust	1993	73	43	59	77	35	45	30	8	3.4	2.9	17	6
East Cleveland Nest Box Network Project	2019	158	57	36	107	40	37	-3	17	3.3	2.9	13	7
Galloway W - Scottish Raptor Study Group	2013	35	26	74	61	31	50	47	-5	3.1	2.6	21	8
Glamorgan Barn Owl Group	2013	59	26	44	47	22	46	-5	4	3.1	3.2	-3	9

Table I. RELATIVE CHANGE IN NESTING OCCUPANCY AND BROOD SIZE - CONTINUED

					Nesting C	ccupancy	Mean Brood Size						
County / group	start year	2023		Average of All Previous Years (AAPY)				numerical			%		
		sites checked	nesting	% nesting	sites checked	nesting	% nesting	% change from AAPY	change	2023	ААРҮ	change from AAPY	See notes
Gloucestershire Barn Owl Monitoring Programme	2014	197	36	18	108	26	24	-25	10	2.7	2.5	6	10
Isle of Wight - Gil Gaylor	1997	44	38	86	45	42	93	-7	-4	3.1	3.0	3	11
Jersey Barn Owl Conservation	2006	220	44	20	123	38	31	-36	6	2.1	2.4	-15	12
Leicestershire - Vale of Belvoir Barn Owl Conservation Group (VBOC)	2013	103	26	25	159	28	18	43	-2	3.0	2.3	31	13
Manchester Raptor Group	2010	155	63	41	91	34	37	9	29	2.8 E	2.7	2	14
Northumberland (N) - Natural History Society of Northumbria Ringing Group - Philip Hanmer	2006	100	36	36	100	29	29	23	7	2.7	2.3	16	15
North York Moors - South Cleveland Ringing Group	2018	37	30	81	34	26	75	8	4	3.2	3.5	-7	16
Barn Owl Conservation Oxfordshire	2018	256	43	17	178	69	39	-56	-26	2.6	2.4	8	17
Powys Species Habitat Protection Group	2014	69	34	49	63	26	41	20	8	4.0	3.4	19	18
Shropshire Barn Owl Group	2002	181	94	52	200	45	23	129	49	3.1	2.8	10	19

Table I. RELATIVE CHANGE IN NESTING OCCUPANCY AND BROOD SIZE - CONTINUED

		Nesting Occupancy								Mean Brood Size			
County / group	start year	2023		Average of All Previous Years (AAPY)			% change nu	numerical			%	See notes	
		sites checked	nesting	% nesting	sites checked	nesting	% nesting	from AAPY	change from AAPY	2023	AAPY	change from AAPY	
Somerset - Cam Valley Wildlife Group	1995	84	15	18	92	12	13	41	3	3.1	2.6	19	20
Staffordshire Barn Owl Action Group	2008	139	35	25	248	40	16	56	-5	3.0	3.0	-2	21
* Suffolk Bird Group	2007	635	153	24	1131	199	18	See unusua	l exclusions	2.6	2.2	17	22
Sussex - Terry Hallahan	2007	189	77	41	136	60	44	-7	17	2.5	2.9	-14	23
Ulster Wildlife - Katy Bell	2016	87	8	9	86	3	4	130	5	2.9	2.7	5	24
Warwickshire - Stour Valley Barn Owl Group /Brandon Ringing Group	2011	106	24	23	235	48	20	12	-24	1.8	2.9	-37	25
Wiltshire – The Salisbury Plain Raptor and Owl Ringing Group	2017	250	105	42	309	146	47	-11	-41	1.8	2.4	-24	26
* Yorkshire - East Riding Barn Owl Conservation Group	2013	300	88	29	471	100	21	See unusua	l exclusions	1.9	2.9	-34	27
Summary		Grand Total	Grand Total	% Nesting	Grand Total	Grand Total	% Nesting	% Change	Numerical Change	Mean	Mean	% Change	
		4033	1237	31	4136	1044	25	22	193	2.8	2.8	2.7	

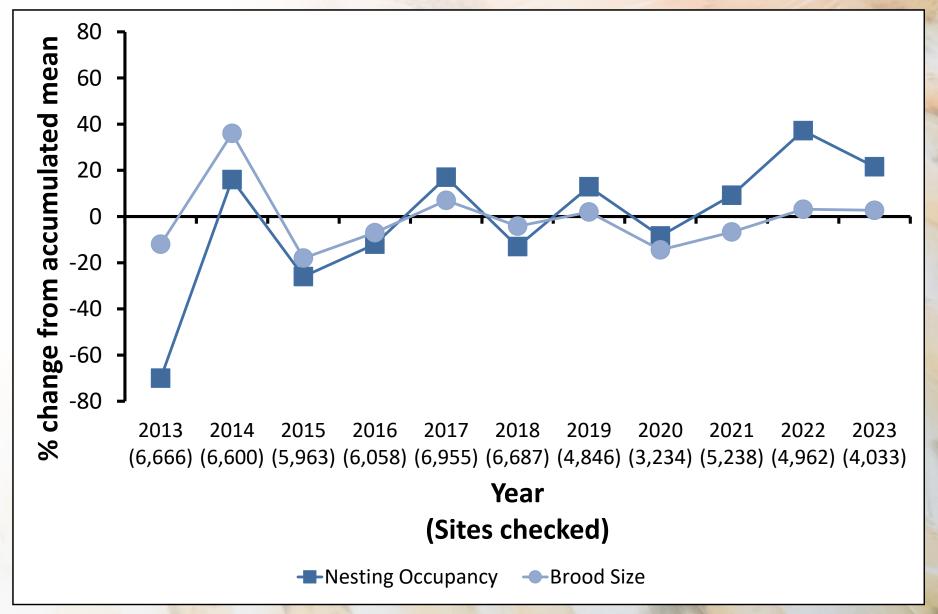


Figure 1. Variation in UK summary figures for Barn Owl nesting occupancy (squares) and brood size (circles) from 2013 to 2023. The vertical axis shows percentage change in summary figures relative to the accumulating mean of all previous years. 'Sites checked' refers to the sample size for calculations of percentage change in nesting occupancy.

General Summary

On the whole, 2023 seemed to be another good year for breeding Barn Owls across the UK. Nesting occupancy showed a fantastic 22% increase on average, although not quite as good as the 37% increase we saw in 2022. The West Midlands in particular had a great year with over 50% increases in occupancy reported by Cheshire (+82%), Shropshire (+129%) and Staffordshire (+56%). Ulster (+130%) also had a good year with a jump from 5 to 8 sites occupied - hopefully this is a trend we will see continuing in Northern Ireland. Although declines in occupancy were recorded in more regions compared to 2022, only Gloucestershire (-25%), Jersey (-36%), Oxfordshire (-56%) and Wiltshire (-11%) had declines of 10% or more.

Unfortunately, the increase in nesting occupancy was not supported by a significant increase in mean brood size, instead remaining very close to average with only a 2.7% positive change observed. Galloway (+21%) and Leicestershire (+31%) were the only regions to record more than a 20% increase in mean brood size with Derbyshire, Powys and Somerset (+19%) close behind. Unfortunately, noticeable decreases were observed in Warwickshire (-37%), Wiltshire (-24%) and Yorkshire (-34%).

The higher number of birds nesting was likely because of the dry, non-harsh winter we had in 2022/2023 (Fig. 2). However, this was then followed by a year of very variable weather across the breeding period with a very wet March, heatwaves in June and September and numerous named storms. This weather variability has been highlighted by regional differences in Barn Owl breeding success and was a likely contributor to the cause of an unexceptional year for brood size. Vole numbers and hunting opportunities were likely disrupted by the unsettled weather in July and August sandwiched by very hot periods in June and September. Supporting this further was the fairly common trend reported by groups that Barn Owls that nested later in the season tended to do better as the weather had settled down by then.

With the recent report that global warming has exceeded 1.5 degrees across an entire year (compared with pre-industrial levels), these unpredictable weather events are undoubtedly set to continue, along with their detrimental effects on Barn Owls, Field Voles and other wildlife.



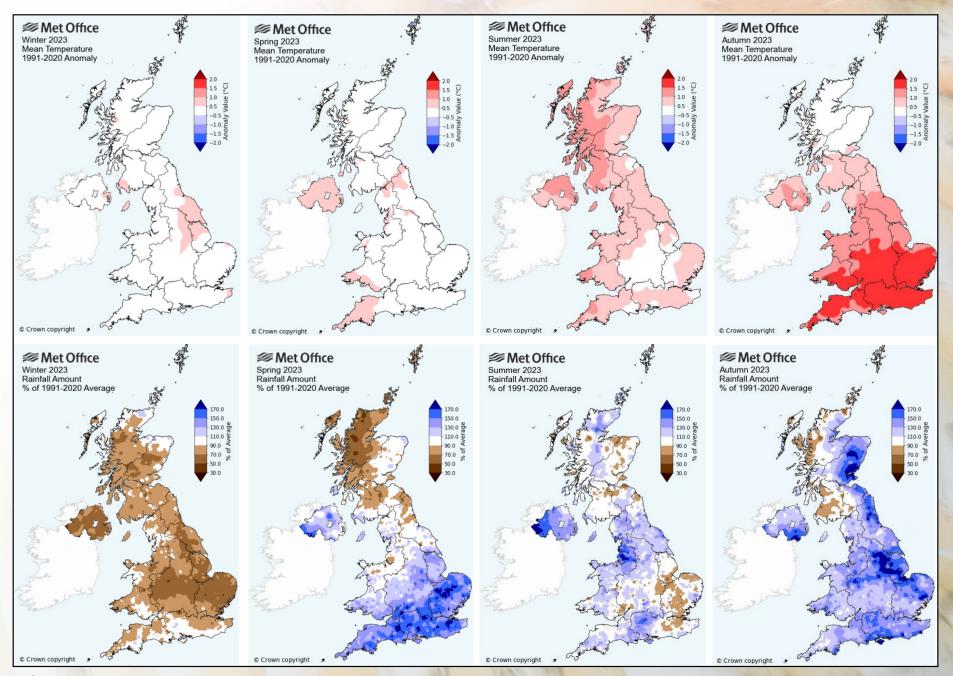
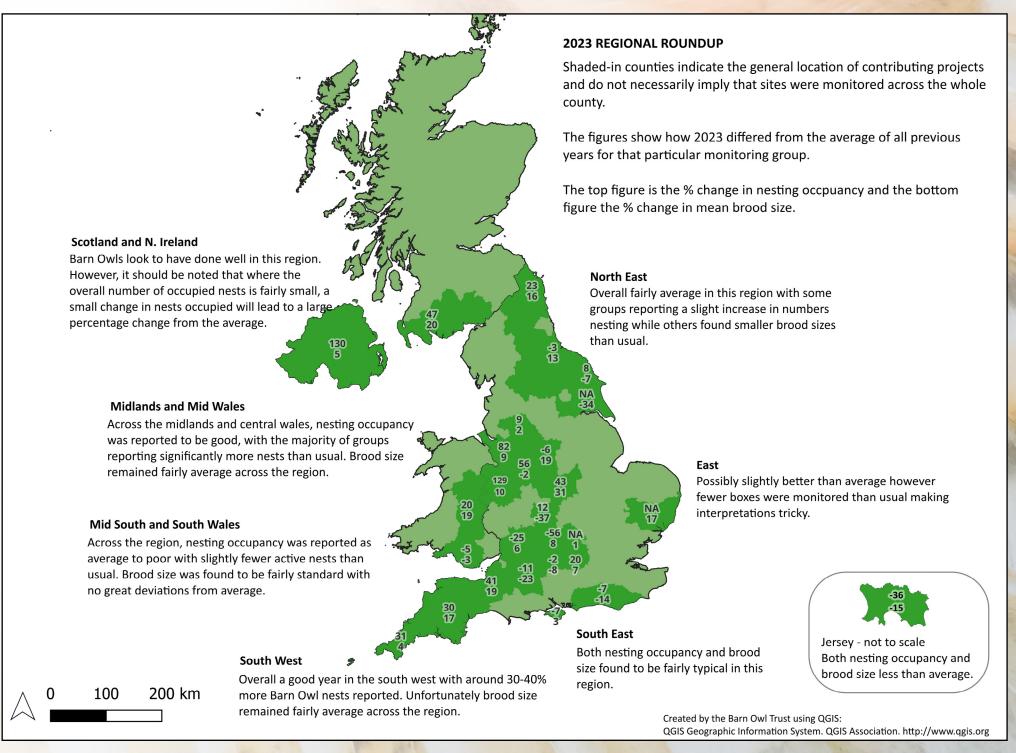


Figure 2. Deviations from mean temperature (top) and rainfall (bottom) in the UK across the seasons (left to right: winter, spring, summer, autumn). Graphs obtained from the Met Office Climate summaries accessed: https://www.metoffice.gov.uk/research/climate/maps-and-data/summaries/index



State of the UK Barn Owl Population - 2023

2023 Contributors' Comments and Editors' Notes

1. Berkshire - West Berkshire Countryside Society Barn Owl Group - Cathy McEwan

This year was more in line with our average after a poor year last year. The increase in box numbers monitored is due to taking on a new landowner who had installed 24 boxes which unfortunately had no owls in any of them.

2. Berkshire (E) and Buckinghamshire (S) - Bisham Barn Owl Group - Paul Warham

Egg-laying began later than in any previous year, the first egg not being until 19 April. Unusually, 5 nests failed at the egg stage and early broods managed only 1-2 chicks. Nest attempts later in the summer were more successful with brood sizes of up to 5, likely benefitting from an increased vole population.

The 2023 Annual report can be found here: BBOG Annual Reports

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

Our group was rocked in May by the sudden death of Norman Shepherd who had been the driving force of BORG for many years, consequently fewer nests than usual were checked. However, a pattern emerged of pairs on site early in the year but abandoning or delaying nesting attempts. We only found three nests with eggs in May and these all failed. When laying got underway in late May/June clutch sizes were fairly small, mostly 2-5 eggs, we only had two large clutches of 7 eggs and we found 19 boxes with adults present but no sign of nesting. Nonetheless, overall the fledging rate in July, August and September was not too bad despite the unsettled weather. We ringed our last chick on 11/10/23.



Norman Shepherd in full Barn Owl swing - he will be greatly missed by all.

4. Cheshire Barn Owl Groups - Dr John Wild

A very good year. Number of breeding sites and productivity very close to our best records.

5. Cornwall - West Cornwall Ringing Group

After one of the strangest springs weather-wise, the Barn Owl season seemed to be all over the place in 2023. We had regular sites unoccupied, non-breeding birds at some sites and some exceptionally late broods. Even now [November] we have a few sites where we need to revisit to ring chicks!

With some new funding from the FiPL project (Farming in Protected Landscapes) managed by the Cornwall AONB, we are continuing to expand our monitoring, this year onto the Roseland peninsula, with some new ringer recruits this year as well from the National Trust.

Unsurprisingly, there was again some variety in the brood sizes across the area, with the highest average again along the north coast (average brood size of 3.7), followed by the east of the county (3.5, compared to just 2.3 last year) and then 3.0-3.1 elsewhere. There seemed to be more movement between sites this year, with one adult even on its third site in as many years! [Editors' note: This text was taken from the West Cornwall Ringing Group blog, which you can read in full here: https://cornishringing.blogspot.com/2023/07/barn-owl-2023-update.html]

6. Devon & Cornwall (E) - Barn Owl Trust

Overall another fairly good year for Barn Owls in Devon with both nesting occupancy and brood size being higher than average. Of the 73 sites checked, 43 (59%) had nesting Barn Owls with an average brood size of 3.37 chicks. Brood size was a little lower (3.1) at ringing age. Only one site saw the nest abandoned early in the egg laying stage.

7. East Cleveland Nest Box Network Project - Tees Valley Wildlife Trust - Kate Bartram & Colin Gibson

This nest box network continues to grow due to the support and interest of landowners. In the past year the number of sites increased from 136 to 158. Results were slightly down compared to last year in terms of occupancy rates, average clutch size and mean brood size. The first clutch of eggs was found around the same time as last year. Clutch sizes were initially good being five or six eggs and then the number of eggs and owlets began to fall as the season progressed. Very few boxes totally failed (nine) but where four or five chicks were expected the numbers dropped to two or three. We continue to have a high number of boxes occupied by other bird species (Jackdaws, Tawny Owls, Kestrels and Stock Doves). Overall, two in three boxes in the network provided breeding habitat for wildlife including Barn Owls.

8. Galloway (W) - Scottish Raptor Study Group - Geoff & Jean Sheppard

We had a reasonable year though slightly hampered by not being able to do our "early circuit" to catch the adults.

The continual loss of traditional sites is reflected in the smaller number of sites checked but of those checked, over 75% were occupied by a pair. As with last year, only one pair failed to lay eggs; this pair were likely to be the pair from an adjacent site where dead chicks had been found. All of those that laid, successfully hatched chicks and the majority reared large young with every chance of fledging. Brood sizes were very variable with one brood of 7, another of 6 and four broods of 5 but also two broods of I and three broods of 2. This suggests that vole distribution was patchy as most sites were visited within a relatively short time frame.

9. Glamorgan Barn Owl Group - Guy Evans & Steve Thomas

There were mixed fortunes for our checked nest sites this year with failures resulting in a fall in occupancy to 44% from 55% recorded in 2022. A wetter than average summer here is likely to be a contributing factor however there was only a small drop in mean brood size to 3.1 from 3.2 in 2022.

This year's new nest boxes moved us another step closer to achieving our long term goal to provide nest box coverage across the whole area of the Vale of Glamorgan. As always a huge thank you to those farmers and landowners who make this ongoing project possible.

Extracurricular activities this year included educational talks to the Cowbridge U3A Group and Pencoed College.

Steve reached minor celebrity status appearing with Hannah Stitfall (Springwatch) on The One Show as well as featuring in a great article in The Farmers Union of Wales Monthly Newspaper Y Tir.



Guy and Steve of Glamorgan Barn Owl Group being interviewed by Hannah Stitfall for the One Show.

10. Gloucestershire Raptor Monitoring Group - Anna Field and Rich Harris

The number of active nests was down in 2023, with just over half the number of nests monitored last year. Brood sizes were similar to last year but not particularly large - the largest being a brood of five in the North Cotswolds but I's and 2's were much more common. No second broods were located in 2023.

II. Isle of Wight - Gil Gaylor

Gil reports that 38 of the nestboxes checked had Barn Owls nesting this season with a total of 117 owlets. At the time of writing Gil was busy getting around to sites for box maintenance and clearing out pellet debris. The Editors.

12. Jersey Barn Owl Conservation - Marc Peters

We have seen an increase in the number of ringed chicks this year, up nearly 40% on 2022, this is down to a well-maintained box population (with most of our boxes now being under 5 years old) and a good relationship with the island bird ringing team, meaning they can be onsite shortly after a visit. The island was hit hard by storm Ciaran, with many well-established trees uprooted, we lost at least 10 boxes, which we have been working hard to recover and relocate in time for next year's season. There have been few reports of dead birds post the storm which is encouraging and a number of our busy boxes remain active. Hopefully a quieter period of weather and a mild winter will ensure good numbers next year.

13. Leicestershire - Vale of Belvoir Barn Owl Conservation Group - Bill Glancy & Don Pritchett

Early indications suggest it was an average breeding season in terms of numbers of birds and productivity. Nesting occupancy has dropped, however mean brood size has increased on last year.

14. Manchester Raptor Group - Judith Smith

I would describe 2023 as slightly above average, but we didn't find any second broods. There were 2 broods of 6 - one of these fledged all 6 young as they received supplementary feeding, and the other, monitored carefully on CCTV, fledged only 2 chicks - the older ones ate the younger ones even though no shortage of food. However, it was at the time of the heatwave in June so thirst could have been the reason.

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

This study (of around 100 sites) in North Northumberland (outside the National Park) indicates that this was a poorer year than 2022 but still better that 2021; and nothing like as good as 2020. At 36% occupancy it was above the long-term average of 30%; although only 29 were successful at raising young.

The influence of the weather seems very stark this year as the mild winter encouraged birds into starting to nest (particularly inland) but then the wet and cold spring caused delays. This seems to have particularly affected coastal sites as we came across some adult owls which were underweight occupying nest sites but did not go onto actually breed. It was very notable how few of the usually reliable coastal sites did well this year. Towards the end of June and into July there seems to have been a loss of eggs/young around hatching time. I emphasise the geographical area of this study because there have been reports of better productivity further west. As the summer moved on the weather did not improve and this mitigated against second or late broods.

A total of 77 owlets were ringed and mostly fledged. Although in two instances young owls left their nests early (possibly searching for food) and perished early. 20 new adult Barn Owls were ringed and 33 re-trapped/controlled; including females that are 8 and 6 yrs old

respectively. One coastal female that I had ringed (in the nest) at Lesbury in 2011; had nested most years (near Boulmer) since 2012 and was unfortunately found dead in September (12 years). She almost certainly had not nested this year.

Jackdaws continue to be a problem occupying owl nest sites. Kestrels seemed to make a bit of a come-back occupying four owl boxes (although one had lost its roof during Storm Arwen – which did not seem to bother the kestrel overmuch!). Two Tawny Owl put Barn Owls off using boxes; one of which was rather late.

16. North York Moors Nestbox Scheme (South Cleveland Ringing Group) - Wilf Norman

Very moderate season – broods mostly small 2s and 3s. Productivity more or less back on a par with that for 2018- 2020.



Ringed Barn Owl chicks, a deserted Mandarin duck nest and South Cleaveland Ringing Group in action!

17. Barn Owl Conservation Oxfordshire/Oxford Ornithological Society – Ally Bunning, with notes by Prof. Stewart Thomson

The teams managed to monitor 256 sites in 2023 as compared to 232 in 2022. Of these, 201 were unoccupied with only 105 pulli ringed as compared to 173 the previous year, although there were two sites which we were unable to access which produced a further 7 chicks fledged bringing the total to 112.

Whilst this was disappointing given the expansion in nest box numbers installed in recent years in our network, it was not unexpected given the erratic weather patterns experienced and the impact of this upon prey availability. It is worth noting that as a result of the unpredictable weather, the breeding season was delayed by 3 weeks as compared to the previous year and was ultimately accompanied

by a first for the team - ringing first broods in November! The season in general was challenging for the birds, having a very "stop, start" feel to it in terms of clutches laid and subsequently not incubated, with the added disappointment of some of our "regulars" failing to brood at all. This made for a much busier season than usual as a great many "re-checks" were required to confirm occupancy or otherwise.

Finally, as we have entered into the cleaning/box maintenance phase of our work we have already fallen foul of the difficult on-site

conditions - a euphemism for getting stuck in the mud for an hour and a half. Hopefully this does not befall any of the other teams!

18. Powys - Species Habitat Protection Group - Jon & Jan Sloan

2023 was not such a good year as last year, but 2022 was an exceptional year for us. We had to monitor and advise on timing of work on a natural site in an old oak tree which needed branches trimming which were interfering with electric cables. Attached is a photo of parent bringing food for chicks.

19. Shropshire Barn Owl Group - Glenn Bishton & John Lightfoot

The total number of chicks produced in 2023 was 291. This is the most productive year since the Shropshire Barn Owl Group was formed in 2002 and an advancement on last year's record number of 235 chicks. Eighteen new pairs were produced, that's 46 in the last few years. Two pairs were double broaded always an indication of a productive broading season in Shropshire and one

Natural tree cavity nest site monitored by Powys Species Habitat Protection Group

were double-brooded, always an indication of a productive breeding season in Shropshire, and one pair produced an exceptional clutch of nine eggs.

20. Somerset NE - Cam Valley Wildlife Group - Gary Kingman

Gary reports that 2023 was a strange year for Barn Owls in the Somerset area with the weather being very up and down. While 2023 wasn't bad in terms of the numbers nesting, it was nowhere near as good as 2022. Brood sizes were largely 2s and 3s and in general the owls seem to be nesting earlier and earlier each year which makes them vulnerable to unpredictable bouts of weather in spring. Gary has been conducting many talks on Barn Owls to local groups detailing their biology, ecology and the threats facing them and reports that interest and concern for these birds is incredibly high. The Editors.

21. Staffordshire Barn Owl Action Group - Helen Cottam

Unfortunately, this year we have been unable to monitor much of the Staffordshire Moorlands, which is our Barn Owl stronghold. We are in the process of trying to inspire new volunteers to join our group! As a result, the number of boxes checked for 2023 is much lower than usual which is reflected in our results for Staffordshire. Included in our data are reports of breeding activity by landowners but brood sizes were unknown (the calculations made have been in accordance with BOT guidance for unknown brood size).

On a positive note, our monitors (a father and son team) in South Staffordshire are seeing an increase in Barn Owl chicks, as a result of their efforts over the years, in this region.

Whilst ringing, it was noted that some owlets were well grown and fledging the nest by the end of June to the middle of July. Eighty six chicks were recorded with 33 chicks ringed. Only one chick was found dead outside the nest box and no abandoned nest sites were found.

Over the years we have recorded % occupancy rates that have varied, some as low as 6% in 2013 (when we had snow cover in March) to 30% in 2022. With data that ranges from 6% to 30% providing an average over time, it is hard to compare that data with a single year. Since 2017 annual occupancy rates have ranged between 20-30%. So, 25% for 2023 is in line with annual occupancy rates for the last six years. From 2013-2016 they have ranged between 6-15% which is much lower and has brought the overall average down.

22. Suffolk Bird Group - Mike Crawford

It's been a good year generally for Barn Owls but we have a serious lack of monitors due to sickness and ageing. Of the 1,932 boxes registered with us only 635 were physically checked.

23. Sussex Ornithological Society Barn Owl Study Group - Terry Hallahan

189 boxes were visited of which 81 were occupied by Barn Owls, our highest occupancy percentage since measuring 'like for like' visits during the past 4 years.

4 boxes contained single roosting Owls (2 male, 2 female), whilst 77 produced successful breeding pairs (40.7%). I of these broods subsequently failed due to the death of the adult female.

Mean average brood size was our lowest in 4 years at 2.5.

An excellent effort from the team in 22 adults, trapped in boxes post hatching period, this was, by far our largest annual total.

A fabulous control: A pullus ringed by the Salisbury plain ringing group was caught in a box in East Sussex, a non-breeding female aged Euring code 5. A 157km movement!

24. Ulster Wildlife - Katy Bell

We had 3 new nest sites this year but we couldn't access 2 of them. The birds at one site moved into a tree cavity and we know there were at least 2 chicks. There were definitely chicks in Nest 6 and although we don't know exactly how many, we know there was at least 1.

2023 nests:

Nest I:4 chicks

Nest 2: 3 chicks

Nest 3: I chick

Nest 4: 5 chicks

Nest 5: 2 chicks (Moved to tree cavity)

Nest 6: NEW nest in tree cavity - don't know the number of chicks but at least I

Nest 7: NEW nest in old building - don't know the number of chicks

Nest 8: 4 chicks. Same female as nest 3, late brood fledging in November

25. Warwickshire - Stour Valley Barn Owl Group and the Brandon Ringing Group - Paul Leadbeater

Notes: Three pairs not proved to breed + six single birds - a poor season.

26. Wiltshire - The Salisbury Plain Raptor and Owl Ringing Group - Lt Col Richard Clayton

A reasonable start to the year was disrupted by heavy rain in July causing the death of a significant number of pulli. The result was a low average successful brood size and very few second broods.

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

2023 got off to a slow start with the cold Spring combined with low vole numbers. East Yorkshire faired better than other parts of the UK.

Low vole numbers meant small broods for the earlier breeding birds. As the Spring/Summer went on the vole numbers increased significantly resulting in some late broods with increased brood sizes. If I rechecked all my boxes again in late summer I would of found more breeding pairs. 2024 looks set to be a good year for the Barn Owl.

Extra Comments and Contributions

Lincolnshire - Garry Steele

Once again this year my opportunities to check Barn Owl nest boxes were extremely limited compared with years in the more distant past, due to no longer being able to find anyone to assist me and most importantly - foot my ladder. Thus as per 2022, the only sites I visited were ones where the owners believed there may be breeding taking place and they were on-hand to foot my ladder when I attended on site.

NOTE: this year secondary breeding took place at three of the 12 sites I checked. Of these, some supplementary feeding was being carried out by the owners at two of them.

There is currently a general consensus of opinion, including my own, of those in Lincolnshire involved in Barn Owl conservation, that the recent heavy flooding seen over vast swathes of Lincolnshire Fens farmland, particularly following 'Storm Barbet', may well have had a negative affect on small mammal populations and potentially paints a gloomy prospect for the 2024 Barn Owl breeding season, but time will tell.

Greater Gwent Barn Owl Initiative, Goldcliff Ringing Group - Richard Clarke

This is the second year of reporting about this developing project in south-east Wales. At the end of 2023, I30 sites were included in the initiative with most being nest boxes in the southern half of Gwent but with others having been installed in the Lower Usk valley and in the east of the area around Trelleck and Earlswood.

In the table below the number of sites checked refer mostly to those where breeding or roosting birds were present in earlier years. In the main, occupied boxes were those that have been installed the longest, the majority of which are on the Caldicot Levels between Newport and Chepstow. This was however the first year that a nestbox in the Lower Usk valley and a church tower nestbox on the Wentlooge Levels were used successfully.

	2023	2022	2021
Number of sites checked	49	29	9
Number of active nest sites	23	18	7
Mean brood size	2.93	3.00	3.29
Number of roost sites	8	4	2

The increase in the number of active nest sites again reflects the increase in the number of nest boxes being provided and although there continues to be encouraging early signs of an increasing population, it's far too soon to draw any meaningful conclusions at this stage of the initiative.

Neath Port Talbot Barn Owl Group - Cedwyn Davies and Dafydd Richards

This partnership has been operating since 2019, covering an area including Neath Port Talbot, Swansea, parts of Southern Powys and this year, in conjunction with 'Initiative for Nature Conservation Cymru' we have been monitoring boxes in the Amman Valley, in Carmarthenshire. Cedwyn reports that the 2023 breeding season saw a total of 86 Barn Owl chicks ringed.



Rough grassland - Barn Owl heaven! Photo: Pip Laker

Previous Years: 1995 to 2022

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 was carried out that same year and this entailed the rechecking of all known roost sites as well as nest sites. 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 second 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.

2018

It was a generally poor year, with both below-average nesting occupancy (-13%) and brood size (-4.2%). Surprisingly good results from Shropshire (+78%) and Staffordshire (+65%) were swamped by negative reports from widespread groups, particularly northern and eastern England and south Wales. Notably poor nesting occupancy was recorded in Gloucestershire (39% below their average), Norfolk (-39%), Jersey (-40%), Suffolk (-29%), Warwickshire (-28%), and East Yorkshire (-28%).

Why did so many pairs not attempt to nest? In early 2018 an exceptionally cold easterly flow brought snow to many parts (the infamous 'Beast from the East'), including a depth of 57 cm in Gloucestershire on March the 4th. Just as relevant for the Barn Owls were the cold temperatures (down to –11 °C in Hampshire on February 28th) and prolonged periods of heavy rain and high winds in February and March. These adverse conditions must have impacted on preparation for egg-laying and influenced the low nesting occupancy.

Following on from this treacherous start to the breeding cycle, in 2018 the UK had the warmest and driest June on record since 1910. There was only 48% of the average rainfall across the nation and in some southern counties it was down to just 10%. This drought must have reduced the availability of fresh shoots to eat, imposing a negative effect on vole numbers, and consequences that moved up the food-chain at a period when Barn Owl nestlings should have been developing. Hence, an average brood size at 4.2% below previous records could also have been partly caused by the weather. Unfortunately, one of worst results came from Staffordshire (–24.6%), effectively undermining the reasonable nesting occupancy established earlier in the year. None the less, Essex, Shropshire, Powys, and West Sussex had higher than normal values for both nesting occupancy and brood size.

2019

This was a fairly good year with, nesting occupancy clearly above average and brood size marginally so. Regarding nesting occupancy, there was a wide range of results, from highly positive such as Gloucestershire (+101%), Shropshire (+94%), Buckinghamshire (+78%), Berkshire (+43%), and Staffordshire (+71%), to fairly negative in Galloway (-41%), Leicestershire (-19%), Powys (-21%) and some areas of Sussex (-25%). In general, however, a fairly mild start to the year seems to have stimulated a fairly high rate of nesting attempts.

Brood size was especially good in Leicestershire (+34%), Manchester area (+45%), Northumberland (+37%) and Suffolk (+37%), but also reasonable in Gloucestershire (+12%), Buckinghamshire (9%), Shropshire (11%) and Somerset (11%). However, brood size was notably poor in West Berkshire (-11%), North Berkshire/South Buckinghamshire (-18%), Cheshire (-16%), north Norfolk (-32%), Sussex (-18% and -24%) and Wiltshire (-22%). An overall result of under 2% above average suggest that good nesting occupancy may not have realised its full potential in terms of fully fledged owlets joining the population.

2020

A very poor year for Barn Owls, with nesting occupancy down by 8.5% and brood size down by 14% when compared to the average of all previous years.

Particularly terrible nesting occupancy was observed in Gloucester (-78%), Leicester (-75%) and Warwickshire (-87%), with poor rates seen in N Berkshire and Buckinghamshire (-43%), Galloway (-36%), Suffolk (-30%) and Yorkshire (-54%). There were some positive changes in Northumberland (89%), Shropshire (80%), Staffordshire (61%) and Ulster (70%). However, with restraints on field work imposed by the Covid-19 pandemic, it is possible that overall nesting occupancy across the regions was actually overestimated as efforts to check nests were likely concentrated on sites where Barn Owls were more likely to be present.

Mean brood size was unlikely to be affected by a bias stemming from selective monitoring and showed an alarming reduction in the average number of owlets reared. A total of 16 out of 22 regions reported a decrease in brood size, with W Berkshire (-38.4%), N Berkshire and Buckinghamshire (-50%), Leicestershire (-59.5%), Norfolk (-35.2%), Sussex (-30.2), Wiltshire (-38.7%) and Yorkshire (-44.4%) reporting the biggest declines. Worryingly, this means that overall, 2020 contributed considerably fewer new recruits than a normal breeding season should.

The weather in 2020 was a year of extremes and likely led to this unproductive year. A generally mild winter was followed by the wettest February on record since 1862, which will have negatively affected females trying to get into breeding condition. In contrast, the spring months were incredibly dry and hotter than normal, which consequently will have inhibited the emerging vegetation and thereby likely reduced field vole numbers during the critical period of nestling feeding. June through to September then provided very wet conditions just as young were growing and juveniles were fledging and starting to become independent.

2021

2021 showed a reasonable start for Barn Owls, with overall nesting occupancy 9% higher than average. Unfortunately, brood size did not continue this upward trend and was 7% below average.

Despite the overall increase in nesting occupancy, there was considerable variation across regions with substantial 50%+ increases in Leicestershire, Cheshire, Gloucestershire, Powys, Shropshire, Staffordshire and Ulster, and considerable decreases (>30%) observed in Galloway, Dorset, Northumberland and Suffolk. Mean brood size was slightly less variable across regions, with most groups reporting a drop in brood size but with Galloway showing the most catastrophic decrease of a 75% drop.

Given that nesting occupancy and brood size usually follow the same pattern within a year, (i.e. they both increase or both decrease), this led us to speculate that mild/normal weather conditions early in the season allowed prospecting adults to get off to a good start, but this was unfortunately followed by difficult weather conditions. A very dry and cold April likely inhibited spring grass growth, which in turn reduced field vole numbers just as many Barn Owls were incubating. This was then followed by an unusually wet May (171% of average rainfall) which would have negatively affected hunting when many Barn Owls were feeding nestlings or still incubating. Thus both these factors may well have restricted brood sizes.

2022

2022 was generally a very good year for breeding Barn Owls across the UK. Nesting occupancy was 37% above the average value, with over 50% increases recorded in Cheshire, Leicestershire, Oxfordshire, Shropshire, Somerset, Staffordshire, Ulster, Warwickshire, Wiltshire and Yorkshire. Despite the substantial increase in active Barn Owl nest sites, the overall mean brood size was only 3% higher than the average of all previous years.

Across the UK, the whole of 2022 was much warmer and drier than normal. The winter of 2021/2022 was incredibly mild with a mixture of settled spells and wetter weather. This was then followed by a reasonably warm and dry spring and so these favourable conditions could well explain the increase in Barn Owls nests recorded. Unfortunately, the weather became hotter and drier throughout the summer, with an unprecedented heatwave observed in July and a significant drought throughout July and August with only 56% and 54% of normal rainfall in these months. This drought drastically reduced grass growth which will have almost certainly reduced prey availability just as owlets were developing and so likely limited brood sizes and second broods.

Perhaps this uncoupling of the normally correlated nesting occupancy and brood size is a reflection of changing climates and indeed follows on from the pattern observed in 2021. Is it possible that milder winters are allowing more birds to survive, get into breeding condition and begin nesting, but then unpredictable and unseasonal spring and summer weather conditions limit brood sizes and nestling survival?

Further Information

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Links to contributor's own web pages:

Berkshire Bisham Barn Owl Group

Buckinghamshire Bucks Owl & Raptor Group

Cheshire Mid Cheshire Barn Owl Conservation Group

Cheshire Wirral Barn Owl Trust

Cornwall Ringing Group

Devon Barn Owl Trust

Derbyshire Ornithological Society

Galloway Scottish Raptor Study Group

Glamorgan Barn Owl Group

Gloucestershire Gloucestershire Raptor Monitoring Group

Jersey Barn Owl Conservation

Manchester Manchester Raptor Group

Northern Ireland <u>Ulster Wildlife</u>

Northumberland Nat. Hist. Soc. of Northumbria Hancock Mus. R.G.

Powys Species Habitat Protection Group

Shropshire Shropshire Barn Owl Group

Somerset <u>Cam Valley Wildlife Group</u>

Staffordshire Staffordshire Barn Owl Action Group

Suffolk Suffolk Bird Group

Sussex Ornithological Society

Tees Valley <u>East Cleveland Nest Box Network Project</u>



Barn Owl chick. Glamorgan Barn Owl Group