Shropshire
Barn Owl
Group

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2007 Report

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This report summarises the results and activities of the Shropshire Barn Owl Group (SBOG) for 2007. The SBOG formed in 2002 and aims to increase the breeding population of barn owls in Shropshire by providing nestboxes in areas of suitable habitat and working with farmers and other landowners to enhance their habitat. The group is a voluntary organisation and raises its own funds to accomplish its conservation work.

Following on from a lack of breeding activity in 2006 as a result of a low in field vole numbers, but evidence from monitoring indicating that pairs were still intact, we anticipated that barn owls would remain to attempt breeding in 2007. Much rested on a mild winter. What followed in 2007 took us by surprise and left us scratching our heads in amazement all year. The winter proved to be mild and spring got off to a fine and early start. Consequently, not only did barn owls start laying clutches in early April, a month earlier than normal in Shropshire, but many pairs were double-brooded and continued to have young in the nest well into October. Several barn owls formed new pairs at nestbox sites for the first time. The net result - more young were fledged in 2007 than in the previous five years combined! And all of this in a year when field voles numbers were only rising and not due to peak until 2008.

What we do

- Conduct site surveys and promote the conservation of barn owl habitat with farmers, landowners, statutory authorities and conservation organisations
- Operate a nestbox scheme for barn owls in Shropshire to replenish natural nest sites lost to decay and development
- Monitor nestboxes and natural sites for occupation by breeding and roosting barn owls on an annual basis under licence from Natural England
- Maintain a database of breeding sites, nestbox occupation and breeding success
- Provide advice and practical assistance to local authorities, developers and home owners where planning applications affect barn owl nest sites.
- Research aspects of barn owl behaviour and habitat requirements
- Share our findings on barn owls through reports, general articles, illustrated talks, guided walks and other events

Photos: Glenn Bishton, John Lightfoot, Mike Wootton.

Why Barn Owl Need Our Help

In 1932 there were 287 breeding pairs of barn owl in Shropshire. In 2002 the Shropshire Barn Owl Group estimated the population at 121 to 140 pairs: - a loss of around 150 pairs. The national population has declined from 12000 pairs to 4000 pairs and the barn owl is amber-listed (medium conservation concern) in the UK. The barn owl is on the UK Biodiversity Steering Group Conservation Concern List and a target species in the Shropshire Biodiversity Action Plan. The steep decline has been attributed to:

- The loss of prey-rich foraging habitat on farmland
- A reduction in the availability of nest sites in old trees and barns
- Urbanisation, pesticides and road casualties

How you can help

- Contact us if you see barn owls on your land and you have the right habitat and would like to encourage barn owls to breed. Barn owls require **large fields of permanent, ungrazed tussocky grassland or extensive grassy margins where the grass is maintained to a height of 20-40cm.** This provides barn owls with a high density of small mammal prey on which they depend.

- Contact us to arrange a site survey if you have created grassy areas under DEFRA's Entry Level or Higher Level Stewardships scheme.

- SBOG can construct, install and monitor nestboxes for a nominal cost of £60.

- Send us records of barn owl sightings during the breeding season March to August.

- Let us know of breeding sites so that we can update our site records.

- Report locations of dead barn owls.

The 2007 breeding season

The nestbox scheme

Of 212 barn owl nestboxes available at the start of the breeding season, 42 supported breeding pairs and 25 were occupied by roosting birds at some point in the year. Table 1 includes both successful and unsuccessful breeding attempts by barn owl pairs. The occupancy rate of nestboxes by barn owls in 2007 was 35.8 %.

Other nestboxes held little owl (a first), kestrel, stock dove, jackdaw and squirrel. SBOG had 259 nestboxes in place at the end of 2007.

Table 1. Occupation of nestboxes by Barn Owls

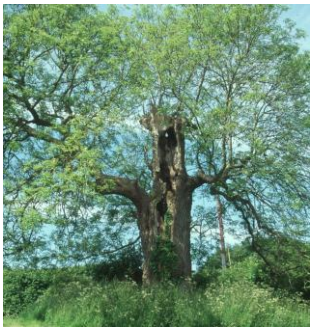
2007

Shropshire Barn Owl Group

Nestbox type	No. nestboxes monitored	No. nestboxes occupied		Total occupied	% occupied
		Breeding	Roosting		
Tree	101	25	14	39	38.6
Building	74	15	10	25	33.7
Pole	12	2	1	3	25.0
Total	187	42	25	67	35.8

Breeding success in nestboxes and natural sites

The SBOG confirmed barn owls breeding in nestboxes monitored by the group at Anchor, Attingham, Bagley (2 pairs), Buildwas, Childs Ercall, Chipnall, Colehurst, Colemere, Crudgington, Doley, Ellesmere, Elson, Haughton, Hordley (2), Kynnersley (2), Lyneal (2), Llwyn-y-Go, Mose, Norbury, Northwood, Puleston, Soundley (2), Spoonley (2), Sutton, Tunstall, Walton, Welsh Frankton (2) and Wem. The pair at Anchor is the highest breeding pair known to SBOG, breeding at 340 metres/feet above sea level.



In addition, breeding in natural nest sites monitored by the SBOG occurred at Adderley, Alkington, Almington, Bishops Castle, Cound, Cressage, Ellesmere, Hodnet, Lyneal Lodge, Nantmawr, Pipegate, Poynton, Upper Dryton, Upton Cressett, Waters Upton, West Lullingfields and Wolverley.

Breeding began early in 2007 with the first egg produced on 7 March and the first chick on 6 April. The season also extended later in the year than normal with young still in one nest in late October and probably fledging in

the first or second week of November Thirteen pairs were double-brooded, five of which were in the same nest site as the first brood.

Breeding occurred for the first time in a natural site other than a tree cavity or building when a pair successfully produced three young in a disused quarry. The nest site was in a hole behind the rock face approximately 10 metres above the quarry floor.

Table 2 summarises the breeding success of barn owls in 2007 in nestboxes and natural sites in Shropshire. The data is confined to successful breeding attempts, that is, pairs producing chicks and, in view of the difficulty in directly recording the fledging of young barn owls, breeding success of barn owl pairs is measured as chick productivity. 156 chicks were produced in the nestboxes and natural nest sites produced an additional 64 chicks. The total number of chicks produced in all sites monitored by the SBOG was 220.

The largest clutch size was 8 eggs in an internal building nestbox and broods ranged from 1 to 6 chicks, mean 3.66.

One chick ringed in Ellesmere on 10 June 2007 was found dead on a road in Trefechan, Dyfed, 62 days later on 11 August having travelled 99 kilometres.

Table 2. Number of barn owl chicks produced in nestboxes and natural nest sites 2007

Shropshire Barn Owl Group

Nest site	No. nests	No. chicks	Mean No. chicks
Tree nestbox	26	92	3.53
Building nestbox	15	56	3.73
Pole nestbox	2	8	4.00
Tree cavity natural	12	44	3.66
Building natural	4	17	4.25
Other natural	1	3	3.00
Total	60	220	3.66

Nestbox occupation

Table 3 summarises the occupation of nestboxes by barn owls for the six years 2002 to 2007. The average yearly occupancy rate is 36% and is greater for tree nestboxes, 38%, than building nestboxes, 34%, and pole netsboxes, 32%.

Barn owls are notably site faithful and the exceptionally high occupancy of 27% of nestboxes by breeding birds in 2007 compared to a previous maximum occupancy of 16% would suggest that several pairs are now permanently established as breeding birds in nestboxes and are occupying them on a regular basis. With new pairs occupying nestboxes for the first time each year this momentum of establishing permanent pairs can hopefully be maintained.

Table 3. Nestbox occupation by Barn Owls
2002-2007
Shropshire Barn Owl Group

B= Breeding R=Roosting

Year	Total No. nestboxes monitored	Tree				Building				Pole				%. of nestboxes occupied by breeding pairs	% of all nestbox types occupied B and R birds
		No. Boxes	B	R	%	No. boxes	B	R	%	No. boxes	B	R	%		
2002	13	6	1	0	16	7	0	3	42	0	0	0	0	7	30
2003	48	22	1	6	31	26	2	4	23	0	0	0	0	6	27
2004	97	51	4	14	27	41	4	5	21	5	0	4	80	8	31
2005	135	76	13	18	40	48	9	10	39	11	0	3	27	16	39
2006	160	85	2	22	28	63	0	20	31	12	1	2	25	1	29
2007	187	101	25	14	38	74	15	10	33	12	2	1	25	27	35
Total	640	341	46	74	35	259	30	52	31	40	3	10	32	12	33

Breeding success in nestbox and natural sites

Table 4 summarises breeding success for nestboxes and natural nest sites monitored by SBOG for the six years 2002 to 2007. Only those nest sites successfully producing chicks are included for analysis. A total of 434 chicks have been produced in nest sites monitored by SBOG, with 262 chicks in SBOG nestboxes and 172 in natural sites. Nestboxes have produced an average of 3.4 chicks per nest site with productivity marginally highest in pole nestboxes. Natural nest sites have produced an average of 3.1 chicks. Productivity is highest in natural building nest sites at 3.7 chicks but the sample is small and the data should presently be treated with caution.

Table 4. Number of chicks produced according to type of nest site 2002-2007 Shropshire Barn Owl Group

Figures in parentheses refer to number of broods

Year	Tree nestbox		Building nestbox		Pole nestbox		Tree cavity natural		Building natural		Other natural		Total No. chicks	Mean No. chicks
	No. chicks	Mean	No. chicks	Mean	No. chicks	Mean	No. chicks	Mean	No. chicks	Mean	No. chicks	Mean		
2002	4 (1)	4.0	0 (0)	0	0	0	20 (6)	3.3	0 (0)	0	0	0	24 (7)	3.4
2003	2 (1)	2.0	6 (2)	3.0	0	0	18 (8)	2.2	2 (1)	2.0	0	0	28 (12)	2.3
2004	12 (4)	3.0	12 (4)	3.0	0	0	14 (5)	2.8	5 (1)	5.0	0	0	43 (14)	3.0
2005	40 (12)	3.3	27 (8)	3.3	0	0	39 (12)	3.2	6 (2)	3.0	0	0	112 (34)	3.2
2006	0	0	0	0	3 (1)	3	4 (2)	2.0	0	0	0	0	7 (3)	2.3
2007	92 (26)	3.5	56 (15)	3.7	8 (2)	4.0	44 (12)	3.6	17 (4)	4.2	3 (1)	3.0	220	3.6
Total Broods	44		29		3		45		8		1		130	
Total chicks	150		101		11		139		30		3		434	
Mean No. chicks	3.4		3.4		3.6		3.0		3.7		3.0		3.3	

Productivity for all sites is lowest in tree cavities at 3.0 chicks. Perhaps this reflects the relative openness of many tree cavities as a result of deterioration and decay the resultant exposure to the elements might affect the breeding condition of females prior to the breeding

season or during incubation or possibly the eventual development of the young whilst in the nest. We have also recorded incidents of barn owls in large open internal cavities being mobbed by jackdaws either at the hole entrance or actually entering the cavity, it is feasible that the stress the birds encounter in these circumstances, depending upon their intensity, may affect their condition.

The mean number of chicks produced per brood in Shropshire for the six years 2002-2007 is 3.3. Studies elsewhere suggest that a long-term average productivity of about 3.2 young per pair is required to maintain viable populations. SBOG's policy of targeting nestboxes at farms enrolled in agri-environment schemes with extensive areas of grassy margins and siting networks of new nestboxes near to existing pairs to allow for occupation by dispersing young is intended to assist the creation of viable populations of barn owl.

The signs for 2008 are particularly encouraging. The last year comparable to 2007, when vole numbers were rising, was 2004 when only 8% of nestboxes were occupied by breeding pairs and a total occupancy rate of 31%. An occupancy rate of 27% of nestboxes by breeding pairs in 2007 and an overall occupancy of 35% together with a substantial productivity rate of 215 chicks suggests that there is potentially a high breeding population of barn owls out there. Providing the 2007/08 winter follows recent trends and is relatively mild and there are no other unforeseen environmental blips. 2008 looks like it could be a bumper year.

Current nestbox projects

An update on some of SBOG's main projects across Shropshire

The Shropshire Barn Owl Group's nestbox scheme is viewed in the long-term and nestboxes installed on sites where barn owls have not been recorded in recent years or where the habitat has only recently been improved take on average 17 months before they are occupied by breeding pairs. One or two nestboxes are installed, depending on the size and quality of the habitat. The ideal combination, where feasible, and which covers all eventualities, is to install both a tree nestbox and a tea-chest in a farm building. Many farmers and landowners offer to cover the cost of the nestboxes which allows us to be proactive in targeting other sites across the county.

The Weald Moors Project

The Weald Moors comprises an area of mixed farmland covering 50 square kilometres immediately north of Telford. Historically marshland, much of the land has been continuously drained by drainage ditches since at least 1576. The water table remains near the surface and barn owls are able to hunt along the grassy ditch banks, marshes and grassy headlands created under in agri-environment schemes.

Heavy rains in July caused the inundation of some grassland habitat around nestboxes but this does not appear to have affected the outcome of breeding birds. It is always extremely rewarding when our efforts result in the establishment of a new pair of barn owls and our hopes that a pair found occupying a nestbox in 2006 for the first time since it was installed the year before would remain to breed in 2007 were realised with the pair producing 3 chicks. To our great satisfaction, the pair went on to raise a second brood in an adjacent internal nestbox similarly installed in 2006! Breeding was confirmed in three other nestboxes on The Weald Moors producing an additional 12 young. 57 young barn owls have now been produced in the 28 Weald Moors nestboxes.


Barn owls bred for the first time in a pole box on a site owned by Ironbridge Power Station

The River Severn and River Tern Project

This project aims to establish additional breeding barn owls along the River Severn and River Tern southeast of Shrewsbury. The project comprises 25 nestboxes on 11 sites.

The hard work put in by Mary Thornton and her team from Eon Power of Ironbridge Power Station in co-operation with SBOG at a confidential site along the River Severn finally paid dividends with the occupation of a pole nestbox by a pair of barn owls. SBOG had been working with the power station since 2003 to establish a pair of barn owls on the site and this suffered a setback in 2004 when nestboxes, one of which supported a pair of barn owls, were tampered with and hopes of breeding were dashed. With increased monitoring of the site and security initiatives in place the pair successfully raised 5 young, the first confirmed breeding of barn owls ever on this site and the first known breeding in the area for probably fifteen years or more. 9 young barn owls have now been raised in nestboxes on two sites in the Severn and Tern corridor.

The Bridgnorth Project


Our first successful nestbox in Bridgnorth

Analysis of SBOG and Shropshire Ornithological Society records in 2002 suggested that there were probably only 7 pairs of barn owl in the Bridgnorth area. SBOG was eager to instigate a nestbox project in Bridgnorth to enhance the barn owl population and now monitors 12 nestboxes on 8 sites.

For the first time in the Bridgnorth area a pair of barn owls raised four young in a nestbox in 2007. The nestbox was one of two installed in 2004 on isolated oak trees on a farm at Mose and managed by a farmer who is particularly sympathetic to the plight of the barn owl and other birds. With extensive areas of grassy margins and fields to provide potential hunting habitat in the vicinity the immediate future of this particular pair of barn owls appears to be secure.

Whixall Barn Owl Project

SBOG has been helping the Whixall Environment Group and Shropshire County Council to encourage barn owls to breed on farms and other land in the Whixall area. SBOG constructed and helped install 11 nestboxes for the project in 2007 and will assist in their monitoring in 2008.

Baggy Moor Environmental Agency project.

Over the past few years the SBOG has been assisting the Environment Agency (EA) in a project along the River Perry and the wetlands of Baggy Moor. The EA funded the purchase of barn owl nestboxes and erected them in areas of suitable barn owl habitat with advice from the SBOG. The programme is proving successful and barn owl numbers in the area have grown steadily since the boxes were erected. In 2007 SBOG monitored the boxes on behalf of the EA and recorded 21 barn owl chicks.

River corridors are excellent habitats for barn owls which feed on mice and voles, which in turn require long grass and buffer strips for their habitat. The installation of the nest boxes complements the Environment Agency's work in meeting government targets for habitat improvements in the Severn catchment.

Technical Officer of the EA, Simon Cuming, said: "The barn owl programme is part of our wider habitat creation programme. It has been very successful and we hope that this year's brood will soon be occupying the new nest boxes we have installed this summer, and raising families of their own, which will increase the population of barn owls even further."

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Shropshire Barn Owl Road Casualties 2002-2007

Road	Male	Female	J	F	M	A	M	J	J	A	S	O	N	D	Total
A5 Telford–S'bury-Oswestry	4	3	1	5	3	2	1			2	1	1	6	2	24
A49 Ludlow-S'bury-Whitchurch		1	1		3		1				3	2			10
A53 Market Drayton Bypass	1			1	1	1					3	1			7
A483 Pant–Oswestry	3	1		3	2				1				1		7
A495 Oswestry-Whitchurch		3		1					1				2		4
A41 Albrighton-Whitchurch		1										2	1		3
A458 Halfway House-B'north		1										2	2		4
A442 Alveley-Telford-Prees				1											1
Other A roads	1	1		3							3	1	1		8
B roads						1			1	1		1			4
Total	9	11	2	14	9	4	2		3	3	10	10	13	2	72

SBOG has been collating data on barn owls found dead on roadsides since 2002. 94% of casualties occur on 'A' roads with relatively few birds found dead on 'B' roads. The A5 causes the most deaths and is a serious threat to barn owls. Of the 71 road victims identified 86% relate to the winter period October to March. This period correlates with the dispersal of juveniles from the natal site and an increase in the hunting range of adult barn owls of up to 5km from the nest site.

Four of the 12 casualties found in 2007 were on the Nesscliffe bypass section of the A5. The bypass only opened in 2004 and the SBOG recorded the first road death in

March 2005. Five casualties have been recorded on the bypass so far. The extensive grassy verges are clearly proving attractive to hunting barn owls but in combination with the volume and speed of the traffic this is proving to be a bitter-sweet pill. Two road casualties were recorded for the first time in May in 2007. One male found dead in March weighed 300g, below the normal weight for males of 330g and two females weighed 250g and 270g in May and September respectively, significantly below the normal weight for females of 370g. Death can be attributed to starvation when male and female body weights fall below 240g and 250g respectively.

Bird Atlas 2007-2011
Mapping Britain and Ireland's birds

The British Trust for Ornithology (BTO) is organising a survey to plot the wintering and breeding distribution of birds across Britain from 2007 to 2011. The Shropshire Ornithological Society (SOS) is participating in the national surveys but is also taking the opportunity to produce a publication for the county at a more detailed level and incorporating a new Breeding Bird Atlas.

A lot of changes have occurred since the last SOS Atlas of 1985-1990 and much of the data is now unreliable. The new data will inform conservation work and help show whether barn owls have stabilised or are finally increasing after years of decline.

Volunteers are needed across Shropshire to record all bird species in tetrads (2 km squares) in both winter and the breeding season. If you wish to take part please contact: Allan Dawes, BTO Shropshire, Representative, Rosedale, Chapel Lane, Trefonen, Oswestry SY10 9DX. 01691 654245. allandawes@btinterent.com.

Set-aside is Cast-aside

The decision by the government in 2007 to reverse its policy of providing grants to arable farmers to take land out of production and leave it fallow for the benefit of birds and other wildlife is worrying and could have a serious detrimental impact on bird populations. As early as summer 2007, set-aside farmland, that for many years had provided weedy stubble attractive to farmland seed-eating birds and, over which barn owls hunt wood mice and other small mammal prey was being ploughed up and reseeded with crops. Let's hope enlightened farmers put pressure on the government to rethink this policy.

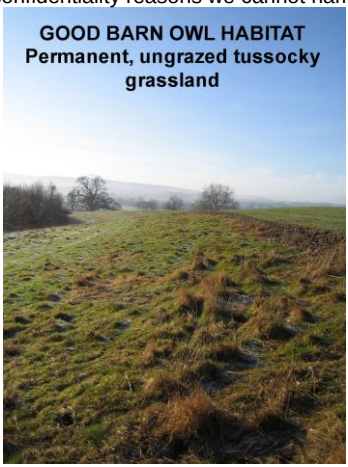
THANK YOU

Much of the conservation work undertaken by the Shropshire Barn Owl Group is accomplished in partnership with a variety of organisations and we wish to express our thanks to the following for their support: The Barn Owl Trust, Shropshire Ornithological Society, Shropshire Wildlife Trust, WildAid, Allscott Sugar Factory, Ironbridge Power Station (Eon Power), Harper Adams University College, Severn Trent, The Forestry Commission, The Environment Agency, South Telford Rights Of Way Partnership, Madeley Parish Council, Asda Telford Town Centre and Ellesmere Round Table. A special thank you to the Trustees of the William Dean Trust for supporting us over the last six years and to Joyce Humpage who asked for guests attending her 40th wedding anniversary celebrations to make donations to SBOG.

Several 'silent' helpers have provided invaluable support on various projects during the year, either willingly or by default! They are Richard Camp, Martin Grant, Bill Hodgkiss, Neil Jones, Dave Ellis and Shaun Burkey of Shropshire County Council.

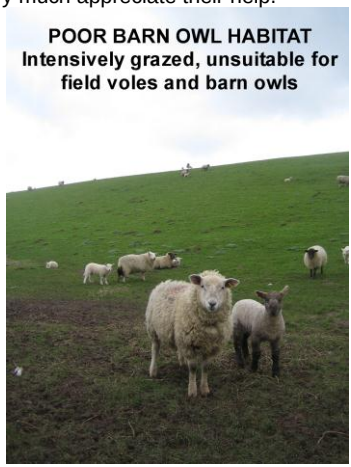
We are also grateful to the many people who keep us informed of barn owl nest sites and sightings. These records enable us to maintain an accurate database of breeding barn owls and sites in Shropshire and to intervene when nest sites are threatened by development or decay.

We are indebted to the many farmers and landowners across Shropshire who have contacted us for assistance or have responded to our requests to install nestboxes on their land. For site confidentiality reasons we cannot name them here but we very much appreciate their help.



HABITAT

What Barn Owl's Need



A breeding pair of barn owl range over around three square kilometres, depending upon the habitat, and hunt mainly within 1 kilometre of their nest site in summer but will feed or roost up to 5 kilometres away in winter. Within their range a breeding pair require a minimum of 4 hectares (10 acres) of damp, tussocky grassland which is permanent and ungrazed or 8 kilometres of 3 to 5 metre wide grassy margins. The structure of the grass is important and should comprise a thick sward 20-40 cm high which is largely unmanaged to allow a dense thatch of fallen stems and leaves to develop at the base of the tussocks. This will create shelter and nest places for field voles, the barn owls primary prey.

Suitable tussock forming perennial grasses include false oat-grass, timothy grass, cocksfoot and meadow foxtail. A Mix that incorporates some softer, less fibrous grasses such as Yorkshire fog, smooth meadow grass, meadow grass, small cat's-tail, sweet vernal grass or velvet bent to provide nutritious food for voles is preferable.

Grassed linear edge features on farmland such as hedgerows, margins, drainage ditches, fence lines, bank slopes and woodland edge provide habitat for field vole and other small mammal prey such as wood mice and common shrew and are therefore important foraging areas. Grassy margins sowed around arable fields under the agri-environment schemes are an increasing and valuable hunting habitat for barn owls. In urban areas, road verges, railway embankments and development land provide suitable foraging habitat. Intensively grazed land, hay meadows, silage fields and rough grazing are poor or transient habitats and offer few opportunities for field voles to establish.

Other things farmers and landowners can do to improve the habitat for barn owls

- Retain large, old trees to provide nest and roost sites.
- Retain old barns and stock shelters, or where they are to be developed, consider incorporating a loft space for breeding barn owls.
- Retain posts as hunting perches.
- Where rodent control is unavoidable use less toxic first generation rodenticides such as warfarin rather than the more toxic second generation brodifacoum.

The barn owl is on Schedule I of the Wildlife and Countryside Act 1981 under which it is an offence to take, injure or kill any wild barn owl, or take or destroy an egg or damage a nest whilst it is in use.