Mid-Cheshire Barn Owl Conservation Group

[incorporating North, North East, East and South Cheshire]

Newsletter

Issue No 49 - September 2017

Chairman's Chat

Apologies if I start this Newsletter with something that sounds like a bit of psychoanalysis, it's just that recently I've come across one or two circumstances which raised the question – why are people so attracted and supportive of barn owls?

Clearly, I must be at the top of the 'quite mad' brigade, being Chairman of the Group. The committee members must be equally questionable, as must some of you wonderful supporters and members of the Group.

Then there's the visitors we have at the likes of the Cheshire Show – who come to us to talk about, ask questions and generally show a genuine interest in the bird.

But then we have our Barn Owl Conference in October – and it looks as though we will have over 70 people attending, not just from Cheshire, but from around the country, to take part, listen and learn from each other – clearly all must be mad 'barn owlers'.

Finally, and more recently, we've been chosen by Waitrose in Northwich as one of their three charities/community groups for September, to receive a proportion of their regular £1,000/month donation through what they term their "Community Matters" programme.

As part of that donation the £1,000 is apportioned between the three groups based on the Waitrose shoppers allocation of their 'green tokens' to their preferred group.

So far (half way through the month) we've received around 50% of the tokens - clearly even the Waitrose shoppers are obviously captivated by the barn owl as well.

So what is it about the barn owl that attracts and captivates you all? – please let me know.

As for me – it's difficult to explain – but what I do know is that I get a great deal of satisfaction seeing our Group's work over the years help conserve and increase the number of barn owls in Cheshire.

A great feeling, and many thanks to you all for your continued help and hard work over the years, greatly appreciated.

Having got that 'off my chest' so to speak – how as 2017 been, so far?

We've not got final figures in yet for 2017 but current indications from our various area teams is very positive. We anticipated overall around 105 breeding pairs this year – which is some 15% up on last year – with brood sizes also expected to be slightly up on last year as well.

Cheshire numbers overall should be around the 150+ breeding pairs.

That's excellent news. However, given the good results over the last 2-3 years, does that mean we are due a poor year in 2018? We should always expect at least one poor year every 3-5 years or so, but nothing to be overly worried about – just the magical workings of Mother Nature.

I will conclude with my usual appeal – if you are fortunate enough to see any signs of [or hear] barn owls please can you let us know [email cheshirebarnowls@gmail.com or our website www.cheshirebarnowls.co.uk or phone 01606-75937 or 07970-235473].

John Mycock
[Chairman]

Wairose – Community Matters Programme

As mentioned above, Waitrose in Northwich has very kindly chosen our Group to be one of their three charities/community groups to receive a proportion of their £1,000/month donation for September 2017.

So please would you consider going to do some shopping at Waitrose in Northwich during September?

The proportion depends on the allocation of their 'green tokens' which they give to shoppers when they shop there.

The shoppers put the tokens into one of three boxes (one box for each of the three chosen charities/community groups).

At the end of the month the £1,000 is then divided between the three groups based on the number of tokens each group has received from the Waitrose shoppers – the more one group receives compared to the others, the greater proportion of the £1,000 it will receive.

So it's important we get our allocation of tokens as high as possible.

The Ears and Hearing of Barn Owls

Yes, barn owls do have ears. In fact its hearing is no less remarkable than its exceptional sight discussed below. The combination of its sight and hearing capabilities enabling it in penetrating the darkest of conditions.

Most birds have ear openings situated just behind the eyes and covered over by its head plumage but the ear tufts seen on many owl species have nothing to do with their ears or any hearing functions.

The barn owl does have enormously developed ear openings concealed behind the edges of its facial disc. These look like concave dishes and it is sometimes suggested that they act like parabolic reflectors to collect sound waves and funnel them down to the ear openings. This actually seems very unlikely as the position of the ear opening is well removed from the focal point of the 'reflector'.

The 'paraphernalia' associated with the ear would suggest that the barn owls sense of hearing is very highly developed and investigation of the structure of the inner ear and those parts of the brain which interpret the information from it adds further confirmation to this fact.

The ears of the barn owl are also tuned in to high pitched notes which has an important bearing upon its success in hunting and catching prey. The ears, and the way they are tuned, are modified

to pick up sounds that have a survival value with particular sounds having varying degrees of importance.

The barn owl is a great rodent hunter [voles, shrews, mice etc] with such animals having high pitched squeaky voices and not very loud ones at that. In addition these furtive rodents scurry around the hedgerows and dodge beneath twigs and leaves on the ground and these noises might provide the hungry barn owl with its clue as to its prey's whereabouts. Noises of this kind contain a great number of high frequencies and barn owls are well equipped to react to them.

Perhaps the most remarkable feature of all is the fact that barn owls are successful in catching living prey even in absolute darkness providing the animal squeaks or makes a noise to give the bird a clue as to where it is. So efficient is the barn owl in this respect that it can home in on its prey on a flight trajectory that is accurate to within 1 degree using its ears alone.

Experiments have been carried out to show just how important the high frequencies emitted by prey is in terms of giving direction-finding clues to the barn owl. Under normal conditions the flight path or subsequent strike rate of the barn owl was accurate to within 1 degree. The experiments showed that the accuracy was reduced to between 5 and 7 degrees when frequencies above 8.5 Kh were filtered out with the owl refusing to strike at all if all the frequencies beyond 5 Kh were removed. Clearly the barn owl cannot glean enough directional information from sounds below 5Kh.

How then can sound be used to yield information about direction and what is so special about the sensitivity of barn owls ears that they can be used to intercept prey so accurately.

One method appears to rely upon the fact that when the source of a noise is to one side of the head, then the sound waves reach one ear before the other. The breadth of a barn owls head facilitates this method since the ear openings are far enough apart to create a sufficient time lapse between the arrival of sounds in each ear. The owl translating such time lapses into direction and distance information.

Another method relies upon the fact that the barn owls head forms a 'sound shadow', in other words the sound is only perceived clearly in the ear nearest to the sound source. Again the owl translating such 'sound' information into direction and distance information.

But there is probably much more to sound location in barn owls than the above explanations alone. An owl flying in to the kill has to make allowance for the fact that its talons are following a different trajectory from that of its head. When there is sufficient light to see its prey the barn owl launches itself into the air and makes for the rodent in one decisive glide; but just before striking it raises its wings, throws its head back and the talons are projected forwards. When striking in total darkness the owls behaviour differs [as has been seen using infra-red photography]. When the prey makes a noise the owl turns its head towards the prey and, once orientated like this, it needs to hear one more sound before striking. If it does not receive another sound clue, the flight towards its prey is not a quick sure glide, but the owl flaps vigorously with the feet swinging beneath its body like a pendulum. When it has arrived over the prey, again the head is thrown back and the talons swept forwards into the same path as the head was taking a moment before. So when the barn owl is flying 'blind' it is its head which is flying on a collision course with the prey, and not until the last moment are the talons substituted for the sound detectors.

Whatever your understanding of the technicalities of the above may be there can be no doubt that the combined effects of the barn owls remarkable sight and hearing capabilities make it an exceptional night hunter.

Just How [and What] Do Barn Owls See at Night?

Barn Owls are predominantly birds of the night. They hunt for food for themselves and their young, they defend their territory and they attract and woo their mates under the cover of darkness.

For us humans we find it difficult to perceive how anything can survive in such conditions and hence create the ideas and myths that anything which lives outside our world and understanding must be eccentric or possess supernatural powers.

We clearly have a problem, therefore, in imagining how such nocturnal owls are able to live and survive during a period we think of as being total darkness.

However, survive they do and the success of such [particularly hunters] depends upon their sense organs, which are adopted to work efficiently after dark and make the birds as much at home in such conditions as we humans are in bright sunlight.

In this respect the lives of birds are dominated by vision. Indeed, one of the most appealing features of barn owls to humans is their large eyes. The forward position of the eyes on their

face, together with their ability to blink with their upper eyelids, gives them an uncanny, human faced appearance.

This frontal position is no accident and has great survival value for barn owls and other hunting species. Barn owls use their vision for locating their prey and need to judge distances accurately to know just where and when to pounce. It is for this purpose that the eyes have come to occupy a more forward-facing position on the head, so that a part of the visual field is scanned by both eyes, i.e. overlapping or binocular vision, and is the best type of vision for such requirements.

Humans have a total visual field of 180 degrees of which some 140 degrees are 'binocular'. Barn owls, by comparison, have a total visual field of 110 degrees but with an overlap of some 70 degrees. This high proportion of overlapping vision gives them an extremely well developed three-dimensional visual sense – vital for judging distances. The farther the eyes are apart the better the three-dimensional effect.

Barn owls then use the parallax method in judging distances. This involves them in their attractive, if sometimes comical, habit of bobbing and weaving. The movements enable the birds to get several viewpoints of an object, to observe any relative movements within its field of vision and to establish very precisely the location of that movement.

However, no matter how good eyes may be we should not forget that they are light receptors and any creature, human or otherwise, are blind in absolute darkness.

Such conditions are, luckily, rare in nature and barn owls are well equipped to make use of whatever light is available and can detect objects in conditions humans would think of as pitch blackness.

A detailed study of the visual capabilities of barn owls in 'night' conditions was undertaken at Cornell University some thirty years ago. The method was very simple. All the tests took place in a barn loft with a floor area of 6m x 9m. and involved birds flying from one perch to another. White cardboard strips 5cms wide were hung from the roof at 1.5m intervals midway between the perches and could be moved as necessary to remove the possibility of learning certain flight paths. The strips were illuminated at different intensities and the behaviour of the owls monitored during their flights.

Such was the sensitivity of the barn owls vision that on the first night of the tests moonlight getting through cracks in the walls and roof provided enough light for them to steer clear of the obstructions. Future tests were carried out on dark, cloudy nights but even then the levels of light at which the birds could operate were so low that the people carrying out the tests were unable to see anything even when they had become used to the dark conditions.

The tests ultimately showed that the barn owls vision was sensitive enough to permit identification of the barriers at a light intensity of 0.00000002 foot candles [please don't ask what a foot candle is – but as a comparison on a normal moonless, cloudy night the level of light intensity rarely drops below 0.004 foot candles]. The lowest level of illumination which was effective in preventing the birds flying without collision being 0.000000003 foot candles. This being the visual barrier for barn owls.

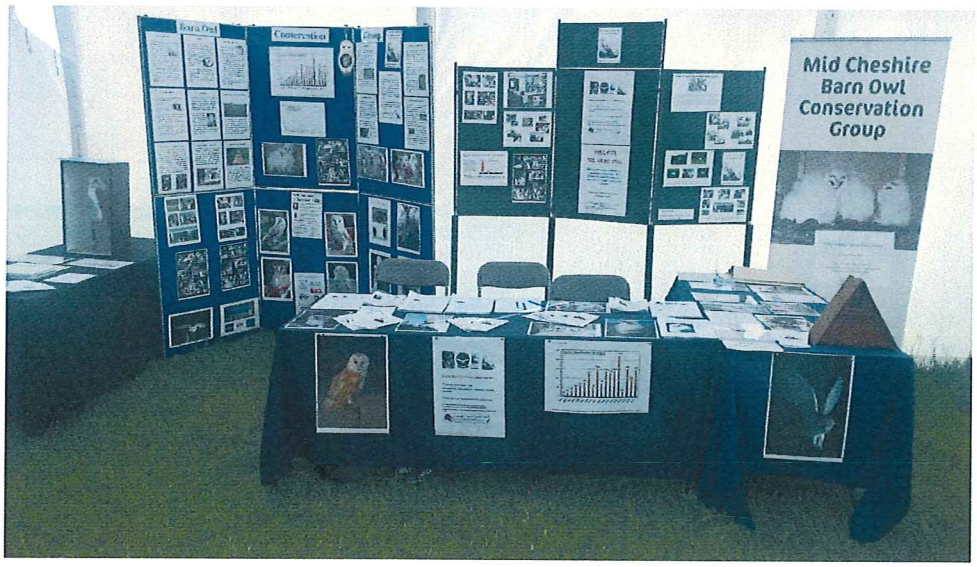
The above experiment clearly showed not only just how good the barn owls eyesight is at night but, by determining a level when the owls became 'blind', dispelled any myths of supernatural powers.

With a visual sensitivity possibly as much as 100 times better than a human, owls obviously have no difficulty in discerning details in night time conditions that would leave us helpless, and to them even a cloudy, moonless night would appear no more than an overcast day does to us.

Cheshire Show 2017

We had another excellent couple of day at the Cheshire Show in June with our display boards and leaflets.

It's always been a great show case for us, meeting not just old aquaintances, but many new and interested people from around the country who come to the Show, but who also have a great interest in barn owls.



And Finally

If anyone has any comments or queries on the above matters or anything they would like to contribute to future Newsletters [articles, letters, comments, concerns, questions, etc] please contact John Mycock on 07970-235473 or 01606-75937 or cheshirebarnowls@gmail.com or www.cheshirebarnowls.co.uk