

## **“Appeal for scientists to investigate”**

*Adapted from an article written by Patti Larard for Mammal magazine (not published)*

Hedgehog conservationist Andrew Jackson of Brackley Hogwatch, spent many years seeking to bring UK wildlife experts' attention to what he believed is the reason for the decline in hedgehogs.

Through years of his own research work, including collaboration with a local vet, Andrew found that infestation from a range of parasites was a major contributory factor to wiping out first litter hedgehogs in increasingly large numbers. This means that the hedgehog breeding cycle is disrupted, contributing to these creatures rapidly disappearing from our gardens and countryside, as many no longer survive their first year.

*Whilst wildlife experts are already well aware of the parasite issues in hedgehogs, a very relevant factor that Andrew discovered was that many hedgehogs found late in the year, traditionally thought to be second litters, were in fact first litters that had failed to grow and thrive.*

His research showed that up to 80 per cent of the small autumn hedgehogs found in Brackley were in fact poorly developed first litter juveniles, failing due to parasitical infestations.

A local vet practice worked with Hogwatch to clinically examine hedgehogs and used x-ray monitoring to determine their age through looking at growth plate closure. This can be used as a reference for hedgehog developmental stages. It was found that the majority of local juvenile hedgehogs are not surviving their first winter.

Andrew spent 12 years observing and studying them in and around the town. Although lacking an academic background, his expertise and knowledge was well known and local people turned to him for help and advice as 'the hedgehog man'.

In 2011 Brackley Hogwatch was on the BHPS contact list as a recommended local rescue, but that year only two sick hedgehogs were reported. This contrasted sharply with the number of sick hedgehogs that he was observing and recording himself, leading him to conclude that the number of sick hedgehogs was being under-reported. From his tracking and monitoring work, Andrew also became aware of something unusual in the hedgehogs that he investigated – increasing numbers of juveniles were being found sick with parasite infestations. After building up more awareness in the local community he found that by December 2012 he was treating over 100.

Crucially, it was found that juvenile hedgehogs that he had marked in the spring were turning up as sick in the autumn/winter. He was determined to find out why parasitism was such an issue and if this phenomenon was in any way significant in the overall decline in hedgehog population.

His research showed that locally hundreds of juveniles were dying every winter and that 80 per cent of these were first litters failing in their first year, not late second litters failing to thrive, as had always been thought. The assumption that all the sick/small hedgehogs found in winter are late born assumes that the first litter is safe and thriving somewhere, which is sadly not the case.

As the local studies confirmed that there was indeed under-reporting of sick autumn juveniles this rang alarm bells with Andrew who felt that scientists might be missing evidence of the change in hedgehog populations.

If found and treated, most hedgehogs will survive – unfortunately, most are not reported and whilst treatment is a conservation strategy, it is important to find out why these hedgehogs are failing to get to the root of the problem.

Brackley Hogwatch worked closely within the community to increase awareness of the need for all daylight sightings to be reported, regardless of how healthy the hedgehog may appear. On investigation, 97 per cent were not developing at the expected rate, showing emaciation and dehydration and often on the point of death.

What is not yet clear is whether this is peculiar to the investigated area, or a nationwide phenomenon; nor why the development of the first litters is so catastrophically delayed.

Collection of data in other areas could help confirm Andrew's findings.

Clearly, we need to understand why the juveniles are dying in such large numbers of parasitical infestation. The questions needing further research are:

- Are juvenile's immune systems less able than previously to cope with parasites?
- Has the nature of the parasites changed or are there now increased amounts of parasites in the hedgehog diet?
- Hogwatch found that most slugs are now infested with parasites such as lungworm – is this significant?
- Do hedgehogs rely on slugs for a greater part of their diet? Are other food sources declining?

It is a generally accepted phenomena that local hedgehog populations do not travel outside their local area, meaning they become insular and isolated, with no interbreeding. With reduced rural populations of hedgehogs, they are becoming increasingly isolated in urban colonies. If these colonies are subject to juvenile failure resulting in reduced breeding, this will have a significant influence on the future survival of the species.

Hopefully the scientific community will consider these questions and carry out further research. Brackley Hogwatch would be very pleased with assisting in the funding of any research to further Andrew's theories.