Toad crossings in Plumpton

Since the formation of the PW&HG, identifying toad crossing points in the Parish has been an obvious goal. The tragically high toad mortality rates on our local road network this March (2013) have allowed us to pinpoint two major and one minor toad crossing sites in Plumpton and three in neighbouring parishes.

Historical context in Plumpton

Tony Hutson is the member of our committee with the longest ecological knowledge of the parish and he remembers a toad crossing point in the middle of the village near the shop. Toads regularly crossed to a pond that was once at the entrance to Riddens Lane. Toad numbers persisted in the vicinity long after the pond was filled in. Toads can live as long as 10 years or more in the wild, although most don't make it past four, but this year no evidence of a migration could be found here, and this population is now presumed to have died out.

At a county level, no known crossing sites have been recorded in Plumpton in the past, which is surprising given the numbers we have recorded this year and just goes to show that local knowledge and recording is vital in establishing crossing sites.

Why toads migrate

Toads spend most of the year away from water in their terrestrial habitats, typically woodland, hedgerows or gardens. However they need to return to water to breed. They are much fussier than frogs about their breeding ponds, preferring larger, slightly deeper water bodies, and they are more tolerant of fish than other amphibians. Toads will travel up to two kilometres to reach their natal ponds, despite the barriers we humans may have erected on their route. After breeding toads return to their terrestrial habitats but over a period of weeks, not en masse, so their movement isn't so obvious. Juvenile dispersal from the pond goes largely unnoticed in July/August.

The habitat over which toads have to cross plays an important role in movement corridors. New research suggests that toads have a marked dislike for crossing ploughed fields (Janin et al, 2012) and will avoid them if possible.

Toad crossing sites can be difficult to identify because, in any given year, peak numbers vary enormously with weather conditions. In years with dry February or March nights, as in 2012 and 2011, toad movements were sporadic locally, and recording efforts were inconclusive. Without the mass movement of toads, and consequent road fatalities, evidence of toads is harder to find. Toad remains, unlike those of larger animals, are very quickly obliterated by traffic movements.

However this year (2013), when the colder than average spring suddenly broke with three warm wet nights in a row on 6–8th March, a classic toad migration was unleashed.

The status of toads

The UK is experiencing sharp declines in all native amphibian populations and toads are suffering more than frogs. Theories focus on habitat change, development, landscape fragmentation and sharp falls in invertebrate prey species. Whatever the reason, the UK is not alone in this downward spiral: Italy (Bonardi et al, 2011) has had a 70% decline in recent decades.

Road casualty figures have in the past been seen as sustainable losses. However recent research in the UK (Cooke, 2011) and Europe (Elzanowski et al, 2008) suggest that road mortalities are perhaps more significant than was once appreciated, given the already precarious state of toad populations. Traffic volumes continue to rise in Sussex with increases in car ownership and population change. The population of Lewes District has increased by over 5,300 in the last ten years. But this increase in traffic is not even through the week. Some nights in the week can experience twice the traffic rates of others. Friday and Saturday nights are typically the two worst nights to try to cross the road if you are a toad.

Results from our survey

We recorded a total of some 340 deaths. A summary of the mortality rates and their locations is given below.

What happens now

Now we have pinpointed the crossing sites in the Parish we will strive to have these sign posted at the appropriate time each year. We will look at ways of improving accessibility to breeding ponds. We will investigate ways of improving the ponds for toads to increase breeding success and increase the population uptake of juveniles each year.

Thanks to all those who provided data and showed an interest in the plight of our toads.

JW 18.03.13

Table 1: Toad deaths Plumpton Parish March 2013

Date	Location of crossing	Location of breeding pond	Movement of toads	Toad numbers
06/03/2013 Movements started				
07/03/2013 JW night-time count	South Road TQ361188	Melbourne Farm	North to south	58 dead 5 alive
08/03/2013 JW night-time count	Plumpton Lane TQ364145	Novington Sand Pit	West to east	29 dead 1 alive
	Beechwood Lane TQ390143	Unclear	Unclear	4 dead 25 live
	Beresford Lane TQ368188	Lumberpits	West to east and along the road	12 dead 6 live
09/03/2013 TH morning count	Hundred Acre Lane TQ347183	North America Farm	West to east and along the lane from north and south	22 dead 28 alive
	Streat Lane TQ352169	Unclear	West to east and along the lane from north and south	14 dead 11 alive
	Plumpton Lane	See above	See above	100–115 dead
	South Road	See above	See above	103 dead