

TOADS ON ROADS, IN CAR PARKS AND DOWN DRAINS

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ABSTRACT

Destruction of habitat caused by development and the particular hazard of drains for migrating toads are matters of general concern. A conference was held on the latter problem in 1996 but its proceedings have still not been published (!) so the following account seemed worthy of record.

INTRODUCTION

The site involved is a balancing pond at 'Saxon Gate', a new housing development just off the A1 at Biggleswade in Bedfordshire. Until 1990 the whole area formed part of Kennel Farm and was 'arable desert' i.e. intensively farmed arable land and allotments inimical to most wild life. There were, however, ditches with adjoining scrub, the remains of an old moat and a pond whose area was given on the map as 0.3 acres (0.121 hectares). The construction of a housing estate began in 1992 but was slightly delayed when a medieval village was revealed on the site. In 1993 a circular 'balancing pond' approximately 50 metres across was dug on the site of (or close to) the pond to take surface run off. We noticed a few toad tadpoles there in the spring of 1994. Since this pond is steeply shelved it was fenced off with metal railings. This did not stop quantities of refuse being dumped in it. Some shrubs have been planted alongside which are regularly sprayed with glyphosate ("Roundup"). An indoor swimming pool and car park was built in 1996 to the north of the pond. Raised flower beds, also sprayed, are a feature of the car park.

At present the pond is bounded by roads on the south and west which function only as access roads to the estate and car park. A boundary hedgerow running north to south has been retained. To the east of this is the site of a planned new road, at present still being archaeologically excavated. Building is continuing to the west and north but a linear wood some 45 metres deep will be planted to the east alongside the projected new road.

THE PROBLEMS

On the 9 March 1998 we were telephoned by Joel Carré, Project Officer of the Ivel Valley Countryside Project regarding toads trapped in a drain. He had been contacted by a resident of Saxon Gate housing estate who had heard the toads calling, had visited the site and released some caught in one drain. [drain A] The cover of a nearby one [drain B], which appeared to have far more toads in it was jammed on upside down and he had not been able to move it.

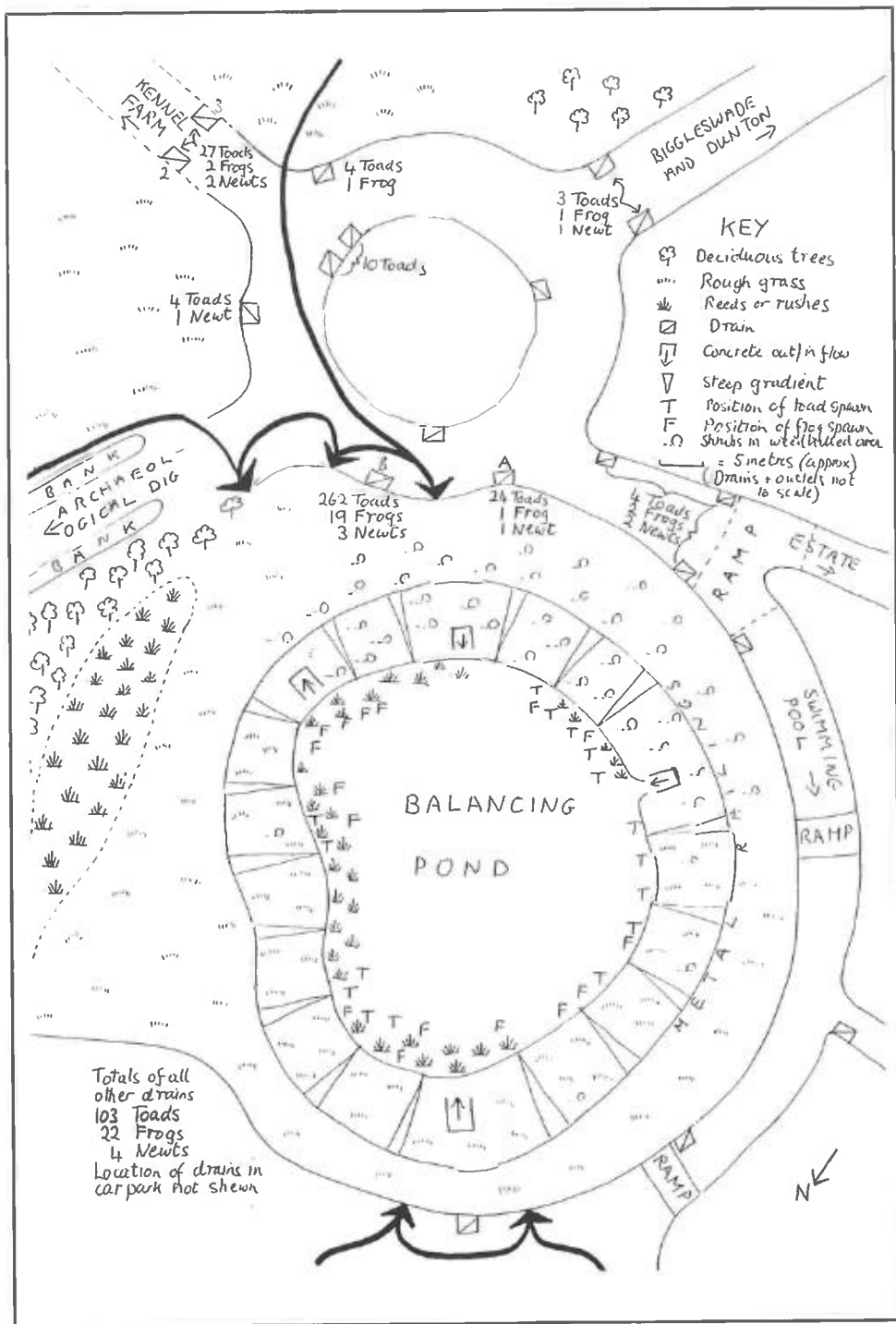


Fig. 1
 Sketch map of pond and surrounding area described in text.

Next day one of us (MSP) went to the drain in the hope of being able to rescue at least some of the toads with a net. This proved difficult but a passing lorry driver from the building site kindly helped lever off the cover. A total of 98 toads, nine frogs and two Smooth Newts, all alive were removed. (Is this a record?) Since the drain was dry, and we were uncertain as to whether the road had been salted, all the amphibians were washed in two changes of water before being released near the pond.

Further visits to the site, carried out by both of us, indicated that this drain in particular was trapping a large number of toads though for a while we did not appreciate the extent of the problem caused by certain others. The results are set out in the accompanying tables.

The two drains, designated A and B on the map, were quite dry, being completely choked with silt. All the animals removed from these were still alive with the exception of a female newt. All the others had water in them. Extricating amphibia from these was difficult as they tended to try and avoid capture by diving into the opaque water or retreating into the pipe at the side. This pipe presumably leads to the pond so in theory the amphibia may be able to reach the pond that way unless some filter or other blocking device was built in. On the other hand several of these drains had dead toads in them or else pairs in amplexus where the female had drowned. In some drains the side pipe was blocked.

With two exceptions all drains were 45 cm. square, the gap between the bars being 3.5 cm. The drains on the road to Kennel Farm, 2 and 3, were 40.5 by 35.5 cm. but the gap between the bars was the same.

The figures in the table suggest that the drains were indeed having a very serious impact on the toads and also harming frogs and newts. Two sets of factors, however, have to be taken into account.

First there are a number of gaps in the records which need explanation.

1. Our initial plan was to inspect the drains periodically and rescue any amphibia trapped in them. We made no attempt to visit the site at night for the two nights after our initial visit since it was cold and we assumed that the main run had probably finished. A casual visit the next evening proved that this was far from the case. Not only were there about 150 toads on the roundabout and verges but we could hear plenty of males calling in the fields who had still a fair way to go to the pond. After that we tried to visit the site every night but this proved impractical.

2. We badly underestimated the duration of the migration and mating period. This is discussed below.

3. Our timing was also erratic. This was partly because visits had to be fitted in with other things but we did not at first appreciate the scale of the problem. Commuter traffic into the estate finished about 2000 hrs but it was impractical to work in the car park until after 2200 hrs when the swimming pool turned out. Our initial visits were confined to the area of the roundabout since we assumed that most amphibia would be approaching from

the east. We did not inspect the drains on the route to the car park until March 20 and did not check those in the car park itself until later still. When we did so we found several toads trapped in drains and a number on the road. There seemed to be a second migration here, starting some two weeks after the main one at the roundabout. We did not notice many dead toads in the drains indicating that they had not been using that route for long. That is why visits after March 25 tend to be much later than those before.

Second, and more to the point, the site itself has a number of peculiar, though not necessarily unique, features which must be taken into account.

1. The pond is an altered, but still acceptable, established site. Other breeding ponds in the area which may have existed, have been destroyed by the development and consequent lowering of the water table – by about a metre according to an archaeologist we spoke to.

2. The routes to the pond are being constantly interfered with. Until this year toads approaching the pond from the east had only a footpath to cross. The archaeologists have now thrown up a large spoil heap along their excavation which has the effect of directing the toads either to the roundabout or on very long detour via the car park.

3. This may explain the long migration period. On March 20 we first saw a spent female toad leaving the pond and on March 28 drain B was empty for the first time. On the other hand the same evening found several toads in amplexus still making for the pond and there was enough calling and croaking to indicate that breeding was continuing. We fished a pair in amplexus out of a drain in the car park as late as April 4. A casual visit on April 22 found a pair in amplexus in drain B.

4. With regard to overall numbers it is possible that the development may have temporarily helped increase the local population. We have no data on the amphibian population before the development started but a substantial area to the north of the pond has been temporarily allowed to revert to scrub thereby improving terrestrial habitat and the pond itself has nearly doubled in size.

To sum up although the figures show large numbers of amphibia caught in drains this may be partly the result of their being forced to head for a single, unfamiliar, site which has been surrounded with every obstacle, hazard and pit fall imaginable. One has to admire the animals' persistence in getting there at all!

It would require more intensive monitoring than we were able to conduct to gain a precise figure for the percentage of migrating toads that were being trapped. It was certainly far more significant than the numbers being run over. We never saw more than five road casualties and usually less on any one evening. On March 18, however, although all the drains were cleared at dusk and all visible toads moved, 5 had fallen into drain B by 2130 hrs though what proportion that represented of the total on the move is difficult to say. Our guess is at least 10% of the toads trying to cross the roundabout were caught.

Drain B and the most productive drain in the car park were all next to kerbs too high for toads to climb. The road to the car park from the roundabout, however, had a number of ramps flush with the top of the kerb but plenty of toads managed to fall down a drain directly adjacent to a ramp. Likewise there is no kerb at all by the drains on the Kennel Farm road and yet frogs and toads seemed to fall down them with monotonous regularity. The road is little used and the toads, may be, were in the habit of walking along it or alternatively the drains happened to be at a preferred crossing point. At all events making it easier for amphibia to negotiate kerbs may mitigate but not eliminate the drain problem.

The same applies to devices placed in the drain to enable amphibia to climb out. As already mentioned toads were often in amplexus and mating balls of three or more were not uncommon. It seems that trapping animals together in the drains increases the likelihood of these clusters forming. Females are unable to climb out under such circumstances and the males hang on long after the female is dead.

CONCLUSION

Balancing ponds are, we gather, increasingly being constructed in new housing developments. It would be interesting to know if similar ponds have generated comparable amphibia colonies. If there is any likelihood of their doing so then various design features could easily be incorporated to overcome at least some of the problems detailed above.

The new road will greatly increase traffic and much of the present terrestrial habitat will disappear. Approaches are being made to the County Planning authorities via the IVCP to see if tunnels, or other measures, can be constructed under or beside the road. By coincidence one firm dealing with such items, ACO Wildlife, Shefford, is local to the area. There is also the possibility of constructing a pond in the proposed linear wood. Next year there will be time to organise proper toad patrols if there is sufficient response.

AFTERWORD

The April rain brought out plenty of small frogs and a number were observed in the drains particularly in the opening of the side pipe. Removing them was tricky and we wondered if it was worthwhile. The *Telegraph Magazine* of 11 April 1998 has an interview with a sewer Operations Assistant responsible for the North East London area which mentions large colonies of frogs in some sewers. Are the frogs happy to live there?

ACKNOWLEDGEMENTS

We would like to thank the unknown lorry driver mentioned above; the receptionist and staff at the District Council offices in Biggleswade for their courtesy in answering our questions; and the manager of the swimming pool for facilitating our access to the pond.

Table 1: Summary of numbers of Toads rescued from drains and roads

Date	Time	D		R	A	I	N	S	ROADS TOTAL	GRAND TOTAL
		A	B	Ken. Farm	Round about	Swim pool	DRAINS TOTAL			
10.3.98	1530-1615		98					98		98
11.3.98	1215-1300	3	6			1		10		10
12.3.98	1500-1545		10					10		10
13.3.98	2130-2230								150	150
14.3.98	0730-0815	11	14					25		25
	2130-2230			3				3	75	78
15.3.98	2130-2230	6	16	3	3			28	66	94
16.3.98	2245-2320		32	2	1			35	48	83
17.3.98	1000-1030		22					22	2	24
	2210-2300		7	3				10	50	60
18.3.98	1030-1215	1	25					26	4	30
	1845-1915			1	2			3	40	43
	2120-2220		5	2	3			10	30	40
19.3.98	2000-2030		10		1			11	10	21
20.3.98	2110-2210		1	5	4		3	13	11	24
21.3.98	2145-2230		2				5	7	3	10
23.2.98	1915-1950	2	1	3	2		2	10	10	20
25.3.98	2115-2200		1		1			2	2	4
27.3.98	2200-2315		8	1	1		18	28	11	39
28.3.98	2215-2340			2	1		23	26	7	33
29.3.98	2050-2140		1		3		8	12	13	25
30.3.98	2145-2220		1	1	1		9	12	6	18
1.4.98	2150-2300	1	1	1	1		12	16	5	21
4.4.98	2200-2245		1				11	12	2	14
5.4.98	2100-2140						9	9	0	9
7.4.98	2130-2225						3	3	1	4
TOTALS		24	262	27	25	103	441	546	987	

Table 2: Summary of numbers of Frogs rescued from drains and roads

Date	Time	D		R	A	I	N	S	ROADS TOTAL	GRAND TOTAL
		A	B	Ken. Farm	Round about	Swim pool	DRAINS TOTAL			
10.3.98	1530-1615		9					9		9
14.3.98	0730-0815	1	1			1		2		2
	2130-2230								4	4
15.3.98	2130-2230								1	1
16.3.98	2245-2320		2					2		2
17.3.98	1000-1030		1					1		1
	2210-2300		1	1				2	3	5
18.3.98	2120-2220		1					1		1
21.3.98	2145-2230		1				1	2		2
27.3.98	2200-2315		2					2		2
28.3.98	2215-2340				2		4	6	2	8
29.3.98	2050-2140		1					1		1
30.3.98	2145-2220						2	2		2
1.4.98	2150-2300			1			5	6		6
4.4.98	2200-2245				2		4	6		6
5.4.98	2100-2140						1	1		1
7.4.98	2130-2225						5	5		5
TOTALS		1	19	2	4	22	48	10	587	

Table 3: Summary of numbers of Newts rescued from drains and roads

Date	Time	D		R	A	I	N	S	ROADS TOTAL	GRAND TOTAL
		A	B	Ken. Farm	Round about	Swim pool	DRAINS TOTAL			
10.3.98	1530-1615		2					2		2
12.3.98	1500-1545		1 (dead)					1 (dead)		1
14.3.98	0730-0815	1						1		1
	2130-2230			1				1		1
15.3.98	2130-2230			1	1			2		2
17.3.98	1000-1030				1			1		1
21.3.98	2145-2230		1					1		1
27.3.98	2200-2315						1	1		1
1.4.98	2150-2300				1	1		2		2
4.4.98	2200-2245				1	1		2		2
5.4.98	2100-2140					1		1		1
TOTALS		1	3 (+ 1 dead)	2	4	4	14 (+ 1 dead)	0	14 (+ 1 dead)	