# Reptiles and Amphibians of the Sheffield Area

## and North Derbyshire

Derek Whiteley

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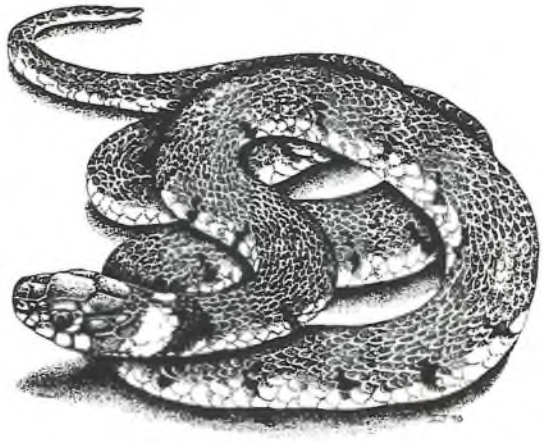

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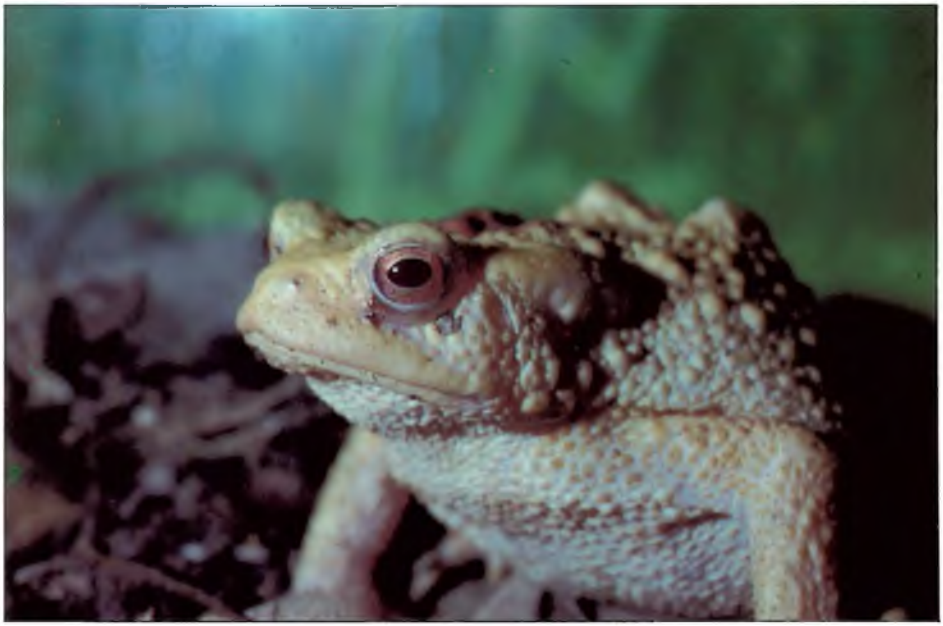


**"Albertina"** the albino Common Toad in Rotherham Museum 1984.

**Midwife Toad** male with eggs 1988.

# A BRIEF HISTORY OF LOCAL SURVEYS

In 1910 Alfred Denny published the first really useful summary of our local reptiles and amphibians in the **British Association Handbook and Guide to Sheffield.**

It seems that the following 55 years or so were the wilderness years for these groups. Very few records exist for the period 1910-1965. Indeed, David Herringshaw in the preview to his 1971 paper remarks "Conditions within the area have changed enormously since that time, but little or no further investigations have been carried out .....". Herringshaw (1971) reports on his 1969-70 survey, published in **The Naturalist** - a benchmark for modern recording. At the same time Colin Howes, working around Doncaster remarked that the "lack of information available, either from literature and, most particularly, from local naturalists, is surprising". Several years of intensive survey work resulted in a paper in **The Naturalist** (Howes 1973) which, for the first time, mapped local species at the 1 kilometre square level.

Surveys have continued without a break since this time. In January 1974 I became the Recorder for the Sorby Natural History Society and started a high profile reptile and amphibian survey which included a local mapping scheme. In 1975 Sheffield City Museum organised a public participation project called "Spot the Frog" in which the general public were invited to contribute records. These surveys captured the imagination of the local press and radio at a time when wildlife issues still had a novelty value, and information flowed in. A year or two later Rotherham Museum followed with a public amphibian survey, and Derek Yalden was accumulating a substantial dataset for the Peak District.

In 1977 I was able to publish a set of maps and an interim assessment of the amphibians in the **Sorby Record** (Whiteley 1977) intending to do the same for reptiles the following year. This was not to be, but the useful information sheet published by Sheffield City Museum in 1979 served the dual function of an aid to further recording and a summary of each species with up-to-date maps. (Whiteley 1979)

In the 1980s the study of reptiles and amphibians made a quantum jump forward. An insatiable thirst for information from the press, local authorities and the general public, was matched by the collection of records. Over 100 observers submitted information each year throughout the eighties and early nineties.

Amphibian surveys are easy and fun, and other groups, public bodies, schools and conservation trusts joined in.

At the national level the 1982 NCC survey led to an important strategic document (Cooke and Scorgie 1983) followed by the NCC Great Crested Newt Survey contracted to Leicester Polytechnic.

Local information was fed into these national surveys, and more support came from the growing influence of the British Herpetological Society Conservation Committee through its series of leaflets, identification guides, and practical guides.

A network of local recorders and local groups was established in 1985 by HGBI (Herpetofauna Groups of Britain and Ireland) under the banner of FFPS and later HCIL (Herpetofauna Conservation International Ltd). This has grown and continues to be the main forum for exchange of information and advice.

Back home, the last ten years have seen a frenzy of recording activity. The Sorby Natural History Society continues to play a pivotal role for the Sheffield area, together with local Biological Records Centres; but a glance through the acknowledgements section provides a good idea of the number of people and organisations involved.

I originally intended to publish this account in 1987 and the colour covers were printed in 1990. So, I suppose the book has been gestating for ten years. The delay has been worthwhile, as much new field information has come to light.

Another important milestone came in 1991 when reptiles and amphibians were included in the Sheffield Nature Conservation Strategy (Sheffield City Council 1991) as local Red Data Book species.

The Sorby Reptile and Amphibian Recording Scheme continued to promote recording and gather data during the 1990s by publishing a series of working maps and targeting under-recorded areas.

## The Distribution Maps

- **These maps cover the 15 ten kilometre squares centred on Sheffield city SK38**

- **A dot on the map represents at least one record from a one kilometre square since 1970. A blank square does not indicate absence, merely that there is no record known to the author in 1997.**

- **Blank areas can be used as a guide to future recording for those who enjoy making new discoveries.**

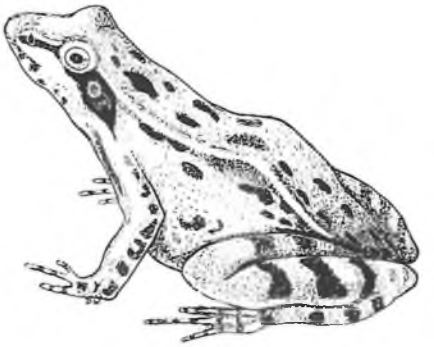
- **Maps are useful for summarising a dataset as well as indicating distributional patterns which might not be obvious from text lists.**

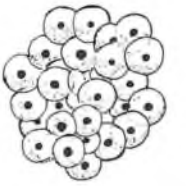
- **Dotted lines represent the approximate limits of Carboniferous Limestone and Permian Limestones**

**And you kill what you fear**
**And you fear what you don't understand**

***Phil Collins***

# COMMON FROG Rana temporaria





**Identification**

Differs from toads by way of smooth moist skin. Eye pupil round. Tadpoles have spiracle directed upwards and outwards with the anus/vent to the right.

**Distribution**

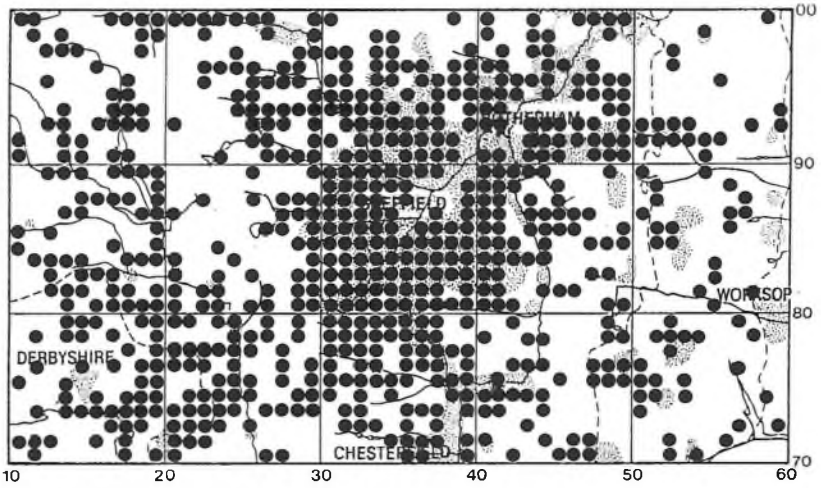
The Common Frog is our most widespread and common species; recorded from 43% of all local one kilometre squares. The supercluster of records in the central square SK38 correlates with the high density of garden ponds, park ponds, millponds and other suburban ponds. There is an apparent scarcity of records in the inner city and lower Don valley.

To the west, frogs are thinly distributed (although not absent) in Dark Peak high moorland areas. To the east distribution is quite patchy, particularly in areas of extensive arable agriculture. Wetlands are disappearing in these lowland areas, and amphibians are generally declining. There are already too many hedgeless prairies laced with agrochemicals. Ponds are urgently required in these areas.

To the South-west there are good clusters of records in the White Peak, and along the valleys of the rivers Derwent, Noe, Ashop and Alport extending well up to the headwaters of each river.

The Dronfield and Chesterfield areas are well-endowed with frogs; and suburban Rotherham and neighbouring towns show up as a cluster of records in SK49.

By comparison to other parts of England, the region as a whole has good populations of Common Frogs. There is probably a small recording bias towards garden ponds, but this is offset by intensive surveys and 'grid-square bashing' in other habitats.




**Common Frog all records 1970-1997**

**Altitude**

Altitude records range up to 1700 ft above sea level (Holme Moss) 1625 ft (Fairbrook Naze) 1600 ft (Snake Summit) 1600 ft (Westend Head) Records in the range 1000 ft to 1300 ft are frequent and of course records below 1000 ft are common. Frogs at higher altitudes sometimes spawn later than their lowland brethren because ponds remain iced over for longer or adults remain in hibernation longer.

**Habitats of Common Frogs in the Sheffield Area**

| Sample Size: 1110 | Number of Records | % |
|---|---|---|
| Garden Ponds/Gardens | 368 | 33.2 |
| 'Dew' Ponds/Field Ponds | 73 | 6.5 |
| Natural Wet Slacks/Flushes/Marshes | 65 | 5.9 |
| Park Ponds/Village/Ornamental Ponds | 57 | 5.1 |
| Millponds | 57 | 5.1 |
| Reservoirs | 43 | 3.9 |
| Moorland Ponds | 40 | 3.6 |
| Rivers/Streams/Ponded Streams | 40 | 3.6 |
| Mining/Ore Settling Ponds | 40 | 3.6 |
| Woodland/Woodland Ponds | 40 | 3.6 |
| Quarry Ponds | 28 | 2.5 |
| Fishponds | 26 | 2.3 |
| Troughs | 20 | 1.8 |
| Canals | 14 | 1.3 |
| Other Ponds/Unspecified Ponds | 147 | 13.2 |
| Other Habitats | 52 | 4.7 |

Other ponds included old sinks, buckets, an old tin bath, sheep-dipping pools, ditches, gravel pits, cart tracks, puddles, wells, forestry fire ponds, lakes, disused septic tanks.

Other habitats refer mainly to terrestrial adults. These include wasteland, derelict land, demolition sites, roadsides, railway tracks, underground (in caves or tunnels), hibernating in compost heaps, drainage pipes, empty outdoor bathing pools, rubble-filled manholes and a variety of urban microhabitats.

The above table shows that gardens and garden ponds have a key importance for frogs in the region. The trend towards suburban garden ponds in the 1960's, 1970's and 1980's has probably now peaked. Frogs are now almost certainly at their highest densities ever within suburban areas. The past six years has provided bumper crops of spawn, and people have been encouraged to move excess spawn to new sites. Various 'frog hot-line' and 'spawn-swap' activities have promoted such actions nationally. The arrival of 'red-leg' disease has recently led to a rethink of the wisdom of moving frogs around.

The so-called 'dew' ponds and similar field ponds are important amphibian sites in the White Peak area where very little standing water occurs naturally on the limestone plateau. Monk (1986) found Common Frogs in 89 White Peak ponds, the majority of which were circular clay or concrete-lined agricultural ponds of the type commonly called 'dewponds'.

Closer to Sheffield, millponds, formerly associated with the early steel industry, are very important amphibian sanctuaries.

Fishponds are quite low in the frog league table, presumably because well-stocked fishponds will have a high predation rate on tadpoles and young frogs. Nevertheless there are records from 26 such ponds.

**Common Frog. First recorded emergence and first recorded spawn dates for the Sheffield Area 1973-1993**

| | First Emergence | Late Adults | First Spawn | Spawn Day Number (Jan 1st = 1) | |
|---|---|---|---|---|---|
| 1973 | 27 February | | 27 February | 58 | |
| 1974 | 15 February | | 21 February | 52 | |
| 1975 | 2 March | | 2 March | 61 | O.T. |
| 1976 | 11 February | | 11 February | 42 | O.T. |
| 1977 | 11 February | | | | |
| 1978 | | 18 October | | | |
| 1979 | 4 February | 13 October | 7 March | 66 | |
| 1980 | 17 February | | 23 February | 54 | |
| 1981 | 10 February | | 4 March | 63 | |
| 1982 | 21 January | 1 November | 8 February | 39 | O.T. |
| 1983 | 23 January | 9 December | 8 February | 39 | |
| 1984 | 11 January | 13 December | 6 March | 66 | |
| 1985 | 2 February | 5 November | 8 March | 67 | |
| 1986 | 21 January | 10 November | 17 March | 76 | |
| 1987 | 9 January | 1 November | 28 February | 59 | |
| 1988 | 27 February | | 11 March | 71 | O.T. |

| | First Emergence | Late Adults | First Spawn | Spawn Day Number (Jan 1st = 1) | |
|---|---|---|---|---|---|
| 1989 | 22 January | | 18 February | 49 | O.T. |
| 1990 | 20 January | | 21 February | 52 | |
| 1991 | 20 January | | 13 March | 72 | O.T. |
| 1992 | 6 January | | 25 February | 56 | O.T. |
| 1993 | 6 January | | 24 February | 55 | O.T. |

O.T. = overwintering tadpoles

Spawning dates vary by up to 5 weeks depending on weather conditions. The prolonged severe weather of the 1985/86 winter delayed spawning until 17 March. Mild late winters or early springs lead to spawning in February. The mean first spawning date is day number 58 (27 February)

Emergence can take place at any time from early January during periods of mild weather.

The first spawning dates have changed very little since 1973, although there is a large variation from year to year - 7 February to 17 march - the latter in 1986 our last notable severe late winter. Malcolm Smith (1969) quotes day No.57 as the earliest date for frog-spawn in the North Midlands (1941-1947) and day 61 for the period 1926-32.

There is sufficient evidence that a prolonged cold winter delays the spawning period. 1988, 1986, 1979 and 1978 are good examples.

In average years the main spawning period is early March continuing into April, and early May on high ground.

In general, the appearance of active (non-hibernating) frogs in January has become more frequent in recent years during a series of mild winters.

The phenomenon of overwintering tadpoles seems to be more common in recent years, particularly in garden ponds. Tadpoles failing to metamorphose by the autumn, suspend further development until the following spring. They usually overwinter as large tadpoles sometimes with hind legs.

A severely cold late winter/early spring period can lead to mass mortality of hibernating frogs in shallow ponds.

In April 1979 I found 20 dead frogs in a concrete pond at Deep Rake (altitude 900'). Local 'dew' ponds also had dead frogs, females with eggs, even a dead pair in amplexus. Similar reports came from Hardwick, Frith Wood, Oakes Park and Norton Lees (Whiteley 1980). A severe cold 'snap' in April is the likely cause of death.

In February 1982 many were reported dead in the shallow 'dew' ponds of the White Peak following a thaw after severe weather.

Beebee (1985) considers that such mass deaths are due to suffocation. Oxygen levels in iced-over ponds gradually drop as rotting vegetation from the autumn decays and releases poisonous gases such as carbon dioxide, hydrogen sulphide and methane. Some frogs in very shallow pools may be frozen to death, caught in the ice.

Malcolm Smith (1969) also suggests that as frogs become sexually mature in the spring, their oxygen demand rises and if they cannot reach the air they perish.

In 1996 many dead frogs were reported bloated and floating in Sheffield ponds following a prolonged cold spell in February and March.

Adult frogs are often reported on snow or ice in early spring, and spawn is occasionally iced in, but seems to survive as normal.

In 1995 frogs spawned on 11 November at Parson Cross Sheffield, during an extraordinary mild spell of weather. In southern England "First Spawn" dates have frequently gone into December (T. Beebee pers. comm.) in recent years. It is difficult to say whether the November record is late for 1995 or early for 1996, but I suspect the latter.

## Red-leg in the Sheffield Area

The fatal disease or condition known as 'red-leg' has been recorded in Sheffield in recent years. The first record came from Button Hill, Ecclesall in May 1992 (Mr Wassail) then Newfield Green Road in 1993, Totley 1996, Highcliffe Road 1996, and a couple of other unlocalised verbal records. These are all garden ponds.

The term 'red-leg' has been applied to frogs with external symptoms such as open sores, haemorrhaging or ulceration on the legs and other body parts. They have a blood red appearance and look poorly. They should not be confused with healthy red-coloured frogs, which do occur at low frequency in the region. Red is a natural colour variation of the Common Frog.

'Red-leg' is a name for a generalised set of haemorrhagic symptoms rather than a specific disease. It is thought to be associated with invasion of bacteria such as *Aeromonas hydrophila* after an initial infection or affliction by some other pathogen, pollutant or stress-inducing agent. A viral disease is a possibility.

Only frogs are affected. Toads, newts and fish have not yet shown any signs of the symptom.

Dead frogs should be removed from the pond and buried or incinerated.

Live but sick frogs should be left to die naturally then removed. At present there is no advice on how to treat frogs with red-leg symptoms.

For the time being movement of all frogs, spawn and tadpoles is best avoided until we know more about these diseases. Perhaps an exception can be made for moving fresh fertile spawn to new or frog-less garden ponds, taking care not to translocate any alien water plants.

Report all suspected outbreaks to the address in this publication. If possible keep a freshly dead 'red-leg' specimen and take it to Weston Park Museum, Sheffield either fresh or frozen in a polythene bag, well-labelled.

For more information see Froglife Advice Sheet 7 **Unusual Frog Mortality.**

**Some Interesting Records of Frogs**

A frog with a 4" goldfish in its mouth was recorded at Hilltop, Dronfield, 11 March 1983.

Fresh frogspawn was found as late as 7 May 1983 in the Upper Derwent Valley and 10 May 1981 in Alport Valley and on 19 May 1986 at Moscar Top.

Frogs were found in Tawny Owl pellets from Ecclesall Wood in 1981 and Hallam Moors in 1994 and in Long-eared Owl pellets from the Snake in 1982 and Dunford Bridge in 1984.

There are several records of frogs being caught by cats producing a high trilling squeak.

Frog spawn has frequently been recorded covered in orange 'okker' or ochre, a naturally occurring oxide of iron, in local streams and ponds. The spawn developed as normal.

On 20 January 1979 Krys Zasada found a torpid frog under a large rock in the River Loxley. On 27 November 1977 Eric Smith found frogs submerged in 2 feet of water in Alport Valley. On 10 December 1988 Eric Smith found a torpid frog under a stone in a cave at Pin Dale.

There are several records of frogs finding new garden ponds and breeding in the first year.

About 400 pairs of have bred at Midhope (Lunn 1987).

Red-coloured frogs have been found at Endcliffe (one with a sulphur yellow underside) Langsett, Agden Bog, Parkhead, Shirebrook Road, Crabtree Road, Stanton Moor (red with bright yellow sides).

Common Crows were seen catching and eating frogs at Linacre Reservoir on 14 April 1987.

Albino frog spawn has been found at Brockwell Reservoir, Chesterfield (1985) Brinsworth (1989) and Dore (1994). Spawn developed into white tadpoles in each case. The Brockwell tadpoles were creamy white but turned dark as they grew.

On 14 November 1995 at Chapel-en-le-Frith Derek Yalden noted "2 males 'singing' in garden pond; mild wet night, and autumn, they must think it is spring". Three days earlier frogs had spawned at Parson Cross, Sheffield (Mr Spiers). November and December 1995 were amongst the mildest on record.

On 22 November 1994 Jack Singleton noted frogs croaking at 3am in his garden pond at Endcliffe.

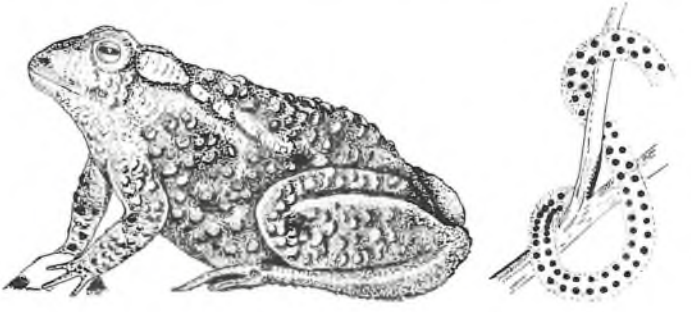
200 frogs were breeding at Wire Mill Dam in 1988, and another 118 died on Whiteley Wood Road (G.S.).

On 9 April 1987 Chris Vasey counted 12-16 lots of spawn at his garden pond. A Hedgehog stayed at his pond and next morning the spawn was missing.

On 3 April 1990 frogs spawned in two plastic cat litter trays in a garden on City Road.

Sheffield City Council Engineers working on a development at Cherry Bank Road in January 1977 caused a landslip along a spring line between Greenmoor Sandstone and shales. An old retaining wall collapsed revealing hundreds of hibernating frogs.

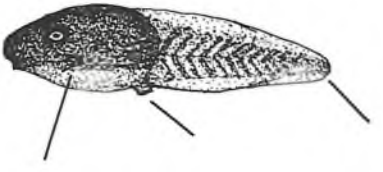
# COMMON TOAD Bufo bufo



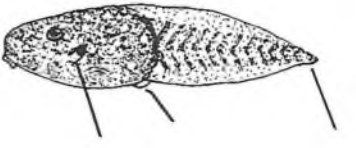
**Identification**

Differs from frogs by way of warty skin; squat, plump body; eyes with horizontal pupils. Spawn in strings not clumps. Tadpoles have spiracle directed backward. (Frog tadpoles have spiracles upwards and outwards). Anus/vent is medial (to the right in frogs). Calls of frogs and toads are different. Refer to tape (Bern Museum 1987). Also be aware of Midwife Toad in SK58. Natterjack toads do not occur naturally in our region.

toad taddy
blackish with a rounded tail



frog taddy
brownish with a pointed tail

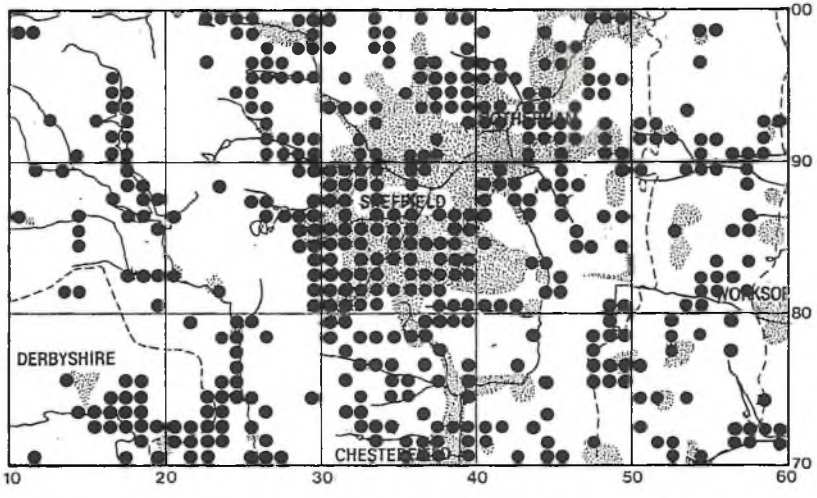


**Distribution**

A widespread distribution across the region but not as dense as Common Frog. Absent from most high ground and high moorland, and generally scarce on the high limestone plateau in the White Peak. For example Monk (1986) found only 8 sites for Common Toad in an intensive survey of the southern White Peak. There is an apparent absence between Millers Dale, Peak Forest and Bradwell in SK17, despite several surveys. Toads seem to have their stronghold in the dales, and ornamental ponds in the White Peak.

In the gritstone northern Peak District virtually confined to valleys, e.g. along the Derwent to Slippery Stones; in the Ewden Valley to Ewden Beck; Rivelin to Hollow Meadows and Moscar Top. It is interesting to compare this map with that of the Common Frog which has

a wider distribution in upland areas and in the White Peak. The maximum altitude record is from a pond at Bradwell Moor (1380'). The single record from Leash Fen is also interesting, as are records on Abney Moor at 1100' altitude and a moorland pool at Ewden Beck (1100').




**Common Toad all records 1970-1997**

In central areas the Common Toad has a stronghold in larger garden ponds and suburban parks with lakes and millponds. Shallow neck-ends of reservoirs are favoured, e.g. at Agden, Rivelin, Damflask, Morehall, Wharncliffe, Linacre, Ulley, Harthill, Pebley, Underbank and Thrybergh Reservoirs.

To the east the distribution is widespread, but more localised. Larger water bodies such as Welbeck, Sandbeck, Langold and Gateford Sand Quarries have good populations; but smaller lakes and ponds in rural gardens also have toads. Angling is a popular pastime in this region, and fishponds are common, and readily colonised by toads, which seem to be compatible with fish.

In the Rotherham Borough, Ely (1991) found Common Toads to be less common than frogs in the suburbs, but more common on the Permian Limestone.

In the Doncaster District, Howes (1973) noted that toads returning from their spawning ground at Old Denaby march uphill through the village to the heights above Denaby Common. Generally toads were found to be common throughout the Doncaster District, although our map indicates a scarcity in SK59. Howes noted the importance of flashes, marshes, ponds and oxbows along the Don and Dearne valleys, and the carrs around Doncaster.

**Habitats of Common Toads in the Sheffield Area**

| Sample Size 569 | No. of Records | % |
|---|---|---|
| Roads and roadsides | 139 | 24.4 |
| Gardens/Garden Ponds | 75 | 13.2 |
| Millponds | 75 | 13.2 |
| Reservoirs | 51 | 9.0 |
| Park Ponds/Ornamental Ponds | 39 | 6.9 |
| Woodland | 37 | 6.5 |
| Under logs/stones/metal sheet | 37 | 6.5 |
| Rivers and Streams | 25 | 4.4 |
| Quarry Ponds | 20 | 3.5 |
| Fishponds | 19 | 3.3 |
| Large Lakes/Flashes | 19 | 3.3 |
| 'Dew' Ponds/Field Ponds | 12 | 2.1 |
| Slacks/wet flushes/rush beds | 7 | 1.2 |
| Canals | 7 | 1.2 |
| Mining Ponds | 6 | 1.1 |
| Other Habitats | 26 | 4.6 |

'Other habitats' include unspecified ponds and water bodies, pasture, moorland edge, horse troughs, dykes, stone tanks, oil drums, refuse tip, Sphagnum bog, fire-pools, and urban rubble. One in a discarded bottle. One alive in a Longworth Trap. One immature resting in a Harvest Mouse nest.

It is interesting to note that 24% of records are from roads of which the vast majority are traffic casualties. (c.f. 1% Common Frogs). The difference is explained by toad behaviour. The Common Toad is known as an "explosive breeder", that is all sexually mature individuals migrate from hibernation sites to their breeding ground within a few days of each other - usually in March or April. Their migration routes often oblige them to cross roads, with fatal results.

In recent years more people have monitored these deaths and 'toad patrols' set up to "help a toad cross a road" following the Toads on Roads Campaign which began in 1985. The Derbyshire Wildlife Trust is particularly active in this area rescuing many thousands of toads across the county.

Nearer to Sheffield, Graham Sedgewick organised a patrol at Wire Mill Dam for many years and some results are detailed here.

Other sites for mass toad mortality include:

Underbank Reservoir
Damflask
Rivelin Reservoirs
Ulley Reservoir
Cressbrook Millpond
Whirlow Park
Ladybower Reservoir
Agden Reservoir
Oakes Park - School Lane
Beauchief Ponds
Derwent Reservoir
Greenside - Moss Valley
Chatsworth Park
Combs Reservoir
Cawdor Quarry
Owday Lane
Carburton
Thurgoland

Common Toads show a tendency to use larger bodies of water for breeding. Hence relatively higher numbers were found in reservoirs, millponds, park, village and ornamental ponds, with a corresponding decrease in 'dew' ponds and garden ponds, compared with Common Frogs. Indeed large bodies of water may be necessary for an "explosive breeder".

Nevertheless, the significance of suburban gardens should not be underestimated. Although relatively few Common Toads use small ponds for breeding many find food and refuge in gardens. Some even become long-standing 'friends'.

The retiring and mainly nocturnal habits of Common Toads are reflected by the number (6.5%) found on land under stones, pieces of corrugated tin, polythene and wood. These are hideaways where toads spend the day after the mating season is over.

**Common Toad. First emergence and main migration dates for the Sheffield Area**

| | First emergence | | Main Migration |
|---|---|---|---|
| 1979 | (19 February) | | 13 April |
| 1980 | 2 March | | 4-7 April |
| 1981 | 28 March | | 3-8 April |
| 1982 | 20 March | | 6 April |
| 1983 | 16 March | | 31 March-17 April |
| 1984 | 27 March | | 16-26 April |
| 1985 | 31 March | (16 March) | 2-6 April |
| 1986 | 20 April | (23 February) | 25-27 April |
| 1987 | 17 March | (10 January) | 6-14 April |
| 1988 | 20 March | | 2-8 April |
| 1989 | 3 March | | 6-8 March |
| 1990 | 18 February | | 15-24 March |
| 1991 | 11 March | | 17-21 March |
| 1992 | 7 March | | 20-21 March |
| 1993 | 13 March | | 16-18 March |

Dates in brackets are adult toads disturbed in hibernation.

The mild winters of 1989-1993 have had a clear effect on the main migration period, but no significant effect on the earliest recorded toad emergence dates. The prolonged severe winter of 1985/86 delayed the main migration and breeding season to the end of April.

**Some Interesting Records of Toads**

A female road casualty at Broomhead Reservoir on 3 April 1981 had been feeding on small beetles and beetle larvae.

A male toad in Whirlow Park was found in amplexus with a dead female (road casualty) on 28 March 1981. The male was difficult to remove.

On Christmas Eve 1989 a toad was crossing the road at Catcliffe Flash on a mild wet night.

Two red-coloured toads were found under a log in Chatsworth Park in 1988, and very dark grey, almost black, toads were found in the slag pools at Treeton Dyke in 1992.

In 1979 skeletal remains of a toad were found in a discarded milk bottle at Conkesbury Bridge.

In 1994, 1323 adult toads were moved from Arkwright Ponds to Erin Pond by Paul Townsend. Arkwright Ponds were destroyed by opencast coal extraction.

At Wentworth lakes an immature toad was found resting in a Harvest Mouse nest on 1 November 1987.

On 10 February 1979 one adult toad was found dead lying on snow in Dore.

In 1976 spawn was found in a horse trough at Baslow.

Adult toads have been found in a number of cellars in local houses.

Adult toads were seen under trees sugared for moths at Wharncliffe Wood in 1978.

## Wire Mill Dam-Whiteley Wood Road Toad Counts 1987-1994

| Year | No. Dead on road | Main Migration | Pond Counts by torch |
|---|---|---|---|
| 1987 | 649 | April 5-April 6 | 1500+ |
| 1988 | 358 | April 2-April 8 | 500+ |
| 1989 | 264 | March 28-April 1 | |
| 1990 | 174 | March 17-March 22 | Few |
| 1991 | 242 | March 17-March 21 | |
| 1992 | 453 | March 20-March 21 | |
| 1993 | 338 | March 16-March 18 | Few |
| 1994 | 65 | early March | 20 max. |
| 1995 | 147 | April 1-April 6 | 60 max |

counts and toad patrol organised by Graham Sedgewick and his assistants

Road casualty figures are cumulative counts for the migration period. Dead toads were removed each morning. General trends are towards a decline in numbers from a mid-1980s peak, with main migration dates becoming earlier in the year. In recent years a succession of mild winters seems to be having a profound effect on migration and spawning dates.

# Food of a Free Range Toad

*Alan Lazenby*

This toad was found under a pile of rubbish and rubble in Sheldon Road Abbeydale (SK344847) on 16 March 1985. It was given a new home in my greenhouse at Stannington, a 6' x 8' glass to ground aluminium type, secured to a 150mm concrete strip foundation.

I weighed and measured the toad. After eight months of looking after itself in the greenhouse it measured 75mm across the belly and 90mm from nose to vent. It appeared to be quite content hiding under the lettuce leaves or between the gro-bags. Its hind foot measured 60mm and from knee to toe tip 80mm. It weighed 154g but promptly reduced this by excreting a copious amount of fluid over me and the scales. This slimmed the toad down to 137g.

Early the following year (30 March 1986) after four months of winter sheltered in the greenhouse it weighed in at 125g - a winter weight loss of 8g.

The toad had a free range in the greenhouse and usually remained concealed. It was apparent that some patrolling of the narrow concrete foundation ledge occurred as toad droppings were deposited along the ledge. Although the greenhouse was well screwed down there was a small gap up to 5mm between the aluminium and the concrete. This allowed invertebrates in and out of the greenhouse which was sited next to the compost heap, a rich source of insect life.

Some of these droppings were collected. They were cylindrical, about the thickness of a pencil and up to about 40mm long, sometimes curved but with straight ends giving a broken-off appearance rather than tapering. They were dark grey, smooth and earthy, not unlike the texture of worm casts.

It is well known that toads will eat any invertebrates that come along, waiting motionless until the prey passes within tongue distance. The results of the droppings analysis reflect those species I know to exist in and around my greenhouse, plus a few surprises.

| **Species List of Prey Items** | | **No. of Items** |
|---|---|---|
| Woodlice | Oniscus asellus | -large numbers eaten |
| | Porcellio scaber | -large numbers eaten |
| Rove Beetles | Staphylinus ater | 18 |
| | Tachinus signatus | 1 |
| | Philonthus sp. | 1 |
| Weevils | Otiorhynchus sulcatus | 9 |
| | Otiorhynchus singularis | 4 |
| | Barypeithes pellucidus | 2 |
| | Phyllobius sp. green | 1 |
| Ground Beetles | Carabus violaceus | 1 |
| Carabidae | Nebria brevicollis | 1 |
| | Notiophilus biguttatus | 1 |
| | Amara plebeja | 1 |
| Dung Beetles | Colobopterus fossor | 1 a common species which often flies to light |
| Froghopper | | 1 |
| Common Earwig | Forficula auricularia | 2 |
| Centipede | Lithobius forficatus | 1 |
| Caterpillar | | 1 small head capsule |
| Spiders | | very many large ones |

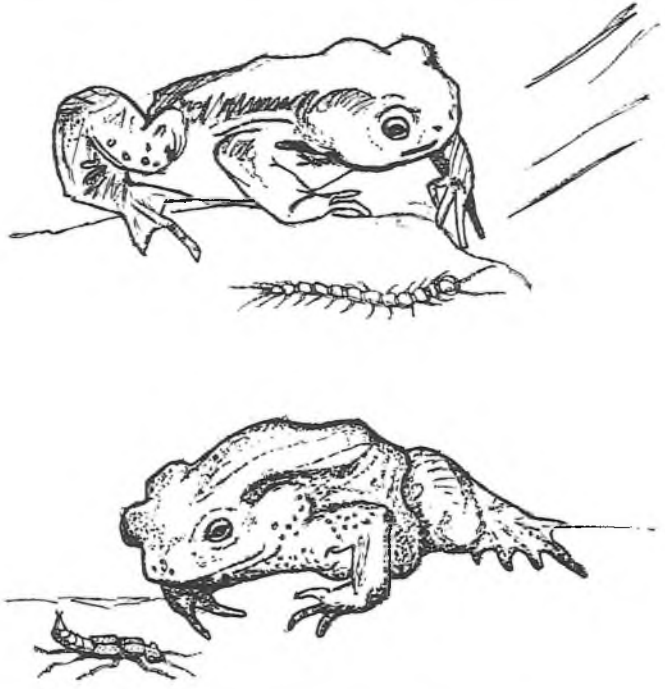
The largest prey item and a species I have not seen in the garden was the Violet Ground Beetle, *Carabus violaceus*, 20-30mm long. Three other small carabids were identified. The common weevils *Otiorhynchus sulcatus* and *Otiorhynchus singularis* -the Strawberry Weevil were also easily identified. Three species of rove beetle were eaten. They provided the greatest number of prey items. The large rove beetle *Staphylinus ater* ( 18 specimens ) is an uncommon species generally but it appears quite abundantly around my compost heap.

Earwigs. *Forficula auricularia* were identified from pincers, and the body plate and toothed forcipular coxosternite indicated the large red centipede *Lithobius forficatus*, a common species. The dung beetle *Colobopterus fossor* was one of the larger beetles which are sometimes attracted to light. The tough leathery parts of spiders were numerous. Woodlice also formed a large part of the toad's diet. *Porcellio scaber* and *Oniscus asellus* are very abundant in and around the greenhouse. The remains of the woodlice could only be seen in very fresh droppings. The calcified shells of these arthropods were soon dissolved to a white powdery unrecognisable deposit on the surface of the droppings. The beetle remains being chitinous are well preserved.

The toad remained hidden by day but on suitable nights patrolled the perimeter where invertebrates moved in and out of the greenhouse being easily surprised and picked off on the smooth 3" concrete strip.

Woodlice, beetles and spiders in that order formed most of the food items, but this probably reflects their abundance. The ability of prey species to run swiftly (wolf spiders, centipedes, beetles) or jump (froghopper) did not exclude them from the toad's diet.

The toad lived in the greenhouse for over a year. It escaped the following spring.



## Some Toad Counts at Selected Sites

| Year | Site | Counts | Observer |
|---|---|---|---|
| 1987 | Wire Mill Dam | 1500+ | G.Sedgewick |
| 1979 | Beauchief ( all three ) | 296 | D.Whiteley |
| 1988 | Beauchief Top | 62 | D.Whiteley |
| 1988 | Beauchief Middle | 30 | D.Whiteley |
| 1988 | Beauchief Bottom | 40 | D.Whiteley |
| 1986 | Water-cum-Jolly | 50+ | A.Brackenbury |
| 1988 | Nancy Pond, Westwood | 100+ | K.D.Robertson |
| 1984 | Wharncliffe Reservoir | several thousand young toads | K.Clarkson |
| 1984 | Gunthwaite Hall | 936 | C.Biltcliffe |
| 1983 | Gunthwaite Hall | 680 | C.Biltcliffe |
| 1984 | Emperor Lake | 105 | A.Brackenbury |
| 1977 | Emperor Lake | 236 | D.Whiteley |
| 1986 | Bradwell Ponds | 100s | K.Clarkson |
| 1987 | Langsett Quarry | 79 | E.J.Smith |
| 1995 | Low New Biggin Pond | 1000+ | F.P.Townsend |
| 1993 | Norbriggs Flash | hundreds of young toads | D.Whiteley |
| 1992 | Snitterton Quarry | 400+ | F.P.Townsend |
| 1987 | Snitterton Quarry | 641 | P.Pickering |
| 1993 | Barlborough | 100+ | F.P.Townsend |
| 1990 | Flash Dam | 623 | C.Monk |
| 1994 | Flash Dam | 150 | F.Harrison |
| 1989 | Greenside, Moss Valley | 145 | Moss VWG |
| 1995 | Kennel Wood | 56 | D.Whiteley |
| 1993 | Hoodcroft Ponds | 100+ | D.Whiteley |
| 1992 | Matlock Bath | 289 | P.Chapman |
| 1991 | Matlock Bath | 409 | G.Wheeldon |
| 1991 | Holymoorside | 662 | B.Massey |
| 1992 | Tapton Grove | 1339 | A.Hinchcliffe |
| 1994 | Erin Pond | 1323 | F.P.Townsend |
| 1989 | Sowell Pond | 150 | F.P.Townsend |
| 1994 | Tapton Dam | 89 | F.P.Townsend |
| 1997 | Budby Pond | 274 | F.P.Townsend |
| 1990 | Frithwood Pond | 50 | F.P.Townsend |
| 1997 | Linacre Reservoir | 50+ | F.P.Townsend |
| 1993 | Carr Vale Fishing Pond | 46 | N.Jones |
| 1982 | Ladybower Reservoir | 200+ | G.Sedgewick |
| 1977 | Damflask | 67 | D.Whiteley |
| 1977 | Rivelin Top Reservoir | 50 | M.Spray |
| 1971 | R.Lathkill Raper Lodge | 43 | A.Brackenbury |
| 1980 | Oakes Park | 53 | A.Brackenbury |
| 1978 | Moss Valley Upper Skelper Dam | 223+ | D.Glaves |

# The Thurgoland Toad Tunnel

For 23 years Mrs.Wyllan Horsfall operated a toad patrol at a migration route outside her home at Thurgoland ( SE 292001 ) where toads crossed Cote Lane, a minor but busy road to breed in Wortley Top Forge Dam. In 1989 she won a competition with Rowntree of York and requested an underground toad tunnel, or more precisely the labour to dig one, as her prize.

An ad hoc partnership was established involving Hunshelf Parish Council, Barnsley District Council, Rowntrees, Sorby Reptile and Amphibian Group, Yorkshire Water and others to see the project through. Nature Conservancy Council provided some grant aid.

Herpetofauna Conservation International Ltd. obtained special ACO polymer bricks with a 200mm internal diameter, and a 20 metre tunnel was installed.

**The Thurgoland Toad Tunnel was opened by official ceremony on 25 May 1990**

**Amphibian Tunnel**

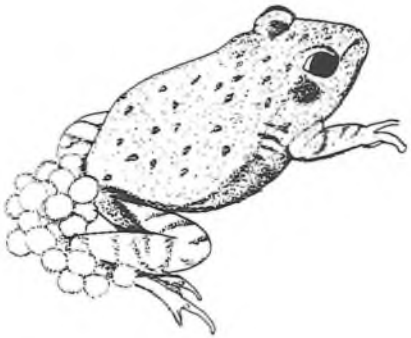
The ACO Amphibian Tunnel is manufactured from strong, durable polymer concrete. Polymer concrete does not absorb water in the same way as cement concrete and is therefore more comfortable for amphibians to move along.

The top of the tunnel lies flush with the road surface and the slots allow air, moisture and light into the tunnel, helping to keep the microclimate within it similar to that outside.

## An Albino Toad

**In August 1983 John Wadsworth found a rare albino Common Toad near Wickersley in Rotherham, which quickly became a famous star of radio, television, and the popular press. 'Albert' lived happily in captivity on display at Rotherham's Clifton Park Museum for many years, later becoming 'Albertina' when its gender was discovered to be female. She was fed on a diet of earthworms, woodlice, beetles and spiders. Albino toads are particularly rare in the wild. This specimen was only the third recorded British wild albino. ( Ely 1985b )**

# MIDWIFE TOAD Alytes obstetricans

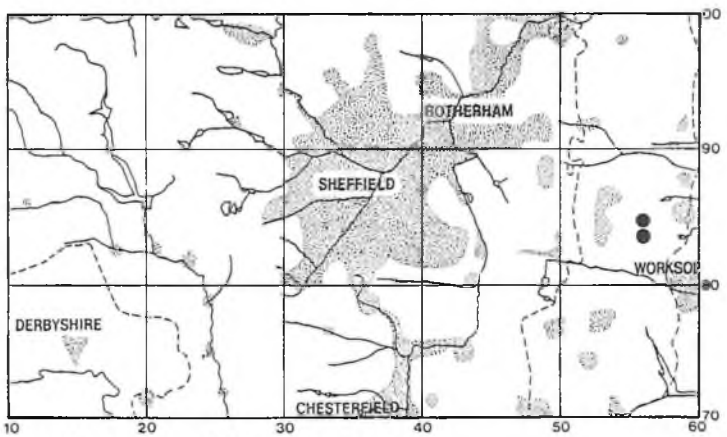


**Identification**

A small grey toad with dark spots and dark eyes. Adults are very terrestrial, digging themselves in under stones, paving flags, rockeries and emerging at night to feed. Easily identified by call (Bern Museum 1987) given by the male throughout the summer, and giving rise to the alternative name Bell Toad. Males carry eggs around their hind legs until tadpoles are ready to hatch into water. Tadpoles are very large.

**Distribution**

Woodsetts Village, Rotherham. Introduced in 1947 by Robert Brocklehurst. Five toads and a dozen tadpoles translocated from his father's large walled garden in Bedfordshire. Rediscovered and surveyed by Bill Ely (Ely 1985a). Regular surveys since indicate a distribution based on garden ponds south to Lindrick Common Side.




**Midwife Toad all known records**

# PALMATE NEWT Triturus helveticus

**Identification**

One of the two smaller newts. Adults in the breeding season 69-84 mm long including tail. Male has obvious webbed (palmated) dark hind feet, a low smooth crest and a filament extending from a truncated tail. There are no spots or markings on the throat, which is clear pale pink in both sexes. A rectangular gland runs down the back, giving the newt a squarish appearance when viewed head on. Females can resemble Smooth Newts particularly outside the breeding season.

**Distribution**

The map indicates a distribution with a westerly bias, mainly in upland regions with only a smattering of records in the eastern lowlands. Most records are associated with acidic waters of the Millstone Grit.

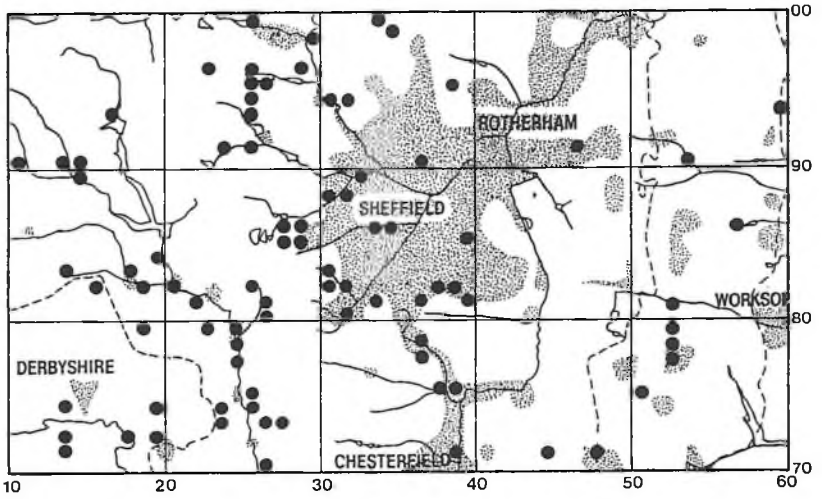
The Palmate Newt is the typical newt and the main species of gritstone moors. For example, small colonies breed in shallow weedy pools at Alport Valley, White Lee Moor, Agden Bog N.R., Burbage Moor, Lady Clough and other moorland localities.

In his study of Peak District Palmate Newts, Derek Yalden (1986) found a clear preference for the more acidic ponds, and this seems to be the general rule. Nationally Cooke and Frazer (1976) found Palmate Newts to be more tolerant of acidity and lower ionic concentrations.

In the White Peak, Palmate Newts are quite scarce; known from 7 sites - Monks Dale, Millers Dale Nature Reserve (in a stone water tank), Dirtlow Rake, Great Longstone and Longstone Moor - an acidic moorland on limestone. Further south Monk (1986) in his extensive survey of White Peak ponds found Palmate Newts at only one site.

At Red Rake, Calver, where the White Peak meets the Dark Peak Palmate Newts cohabit with Smooth and Great Crested Newts in the same pond - a very rare occurrence in the region.

Within the city of Sheffield the situation is even more complex owing to past translocations to garden ponds. The higher western suburbs tend to have Palmate Newts, but there is an overlap zone with Smooth Newts. It is not unusual to find both species living together in suburban garden ponds or ornamental ponds, millponds etc. It is even possible that the very rare hybrid occurs from time to time, although complex courtship behaviour mitigates against this in the wild.




**Palmate Newt all records 1970-1997**

To the east of Sheffield, where the Smooth Newt is the predominant species, Palmate Newts have a very scattered and localised distribution, associated mainly, but not always, with Magnesian Limestone habitats. I found them at Markland Grips Nature Reserve in 1982. Later records came from Whitwell Wood, Hawks Wood, a small pool near Maltby Dyke and Langold Holt. In suburban Rotherham they arrived naturally in Chris Vasey's garden pond at Listerdale. There is an interesting pond at Scholes Village where all three newt species were found together by Paul Townsend, confirming late 1960s records reported in Herringshaw (1971).

In the south east Paul Townsend has found additional sites in garden ponds in Bolsover and Carr Vale.

In the Moss Valley I confirmed reports of breeding Palmate Newts at Hazlebarrow Farm in 1986 and across the valley at Frith Wood there is a thriving population that was nearly lost in 1989. Misguided and inexperienced conservation workers decided to clear the pond in late spring resulting in breaching and draining. Many fish and other inhabitants died, but some 40 Palmate Newts were rescued by the Moss Valley Wildlife Group and reinstated when the pond was repaired (Morton 1989). MVWG also recorded Palmates in Stoneley. Meadows in 1991.

More recently Colin Howes found an adult Palmate Newt in a garden pond in Tickhill - the first modern handled specimen in the Doncaster District. Colin Howes (pers. comm.) remarks that if historical records are to be believed, the Palmate seems to occupy a range of sites along the Marl on the earthern edge of the Magnesian Limestone and along the glacial boulder clay deposits along the Sherwood Sandstone.

Palmate Newt populations can be very high even in small garden ponds. At least 200 were counted at Totley in 1994 and over 100 at a Rivelin garden most years. There are good populations in the Botanical Gardens, Crabtree Pond, Whirlow Park and Abbeydale Hall Wildlife Garden.

Other favoured habitats include millponds, gannister quarry ponds, small ponds bordering reservoirs, mining ponds, reservoir overflow channels and conduits, forestry fire pools.

Although generally known as a "montane" species; in the Peak District both Smooth and Great Crested Newts are found at higher altitudes. This was statistically demonstrated by Yalden (1986) who found that, on average, Palmate Newts occurred at lower altitudes. The other two species are frequent on the limestone plateau at 1000-1350 ft in altitude. Palmate Newts were found in the 500-1000 ft range in the Peak District. It is water chemistry and pond characteristics rather than altitude, that determines newt preference.

**First Appearance Dates for adult Palmate Newts**
**Wharncliffe Wood South Pond 1973-1984**

| | | | |
|---|---|---|---|
| 1973 | 3 | March | |
| 1974 | 23 | February | |
| 1975 | 8 | March | |
| 1976 | 29 | February | |
| 1977 | 12 | February | |
| 1978 | 4 | March | |
| 1979 | 15 | March | * severe winter |
| 1980 | 23 | February | |
| 1981 | 7 | February | |
| 1982 | 6 | February | * earliest date for this pond following three weeks for mild weather |
| 1983 | 19 | February | |
| 1984 | 10 | March | |

The same pond was regularly visited over a 12 year period from late January until the first adult newts were found in each year. These were usually females. I never found adults in January, only newt larvae.

Severe weather in late winter seems to delay emergence from hibernation. In 1979 regular visits were made to the pond, which remained ice-free, yet the first newt appeared 2 to 3 weeks later than usual.

No survey was conducted in 1985, and in 1986 the winter was so severe that newts were not present in March at all.

January 1988 was a very mild month ($2^{o}$C above average) yet careful surveys of two known Palmate Newt ponds on 31 January, day and night, proved negative. It seems that very early February in a mild winter is the best we can hope for in this part of the country.

**Palmate Newt. Breeding Season Adults**
**Measurements from Wharncliffe Wood and Rivelin Valley**

| | | Length (mm) | | |
|---|---|---|---|---|
| **Sex** | **Head & Body** | **Tail** | **Total** | **Tail filament** |
| male | 38 | 31 | 69 | 8 |
| male | 40 | 30 | 70 | 6 |
| male | 41 | 37 | 78 | 7 |
| male | 35 | 33 | 68 | 6 |
| male | 35 | 36 | 71 | 5 |
| male | 37 | 36 | 73 | 6 |
| male | 38 | 39 | 77 | 8 |
| male | 40 | 36 | 76 | 6 |
| | - | - | - | |
| female | 44 | 35 | 79 | 1.5 |
| female | 43 | 35 | 78 | <1 |
| female | 41 | 33 | 74 | <1 |
| female | 41 | 34 | 75 | <1 |
| female | 42 | 34 | 76 | <1 |
| female | 41 | 33 | 74 | <1 |
| female | 43 | 35 | 78 | <1 |
| female | 41 | 34 | 75 | 1 |
| female | 42 | 34 | 76 | <1 |
| female | 41 | 42 | 83 | <1 |
| female | 42 | 37 | 79 | <1 |
| female | 34 | 36 | 70 | <1 |

Note that females are generally slightly larger than males; but male tail filaments are relatively long in the breeding season. Tail filaments of both sexes are very small by July.

Malcolm Smith (1969) quotes the famous herpetologist Boulenger's maximum length measurements of 80mm for a male and 85 mm for a female, and Evans' Scottish maxima as 83mm for a male and 88mm for a female. Average lengths are 75mm for adult males and 79mm for adult females.

**Old Records of Palmate Newts**

Denny (1910) quotes Mr. Arnold Brittain who states that Sheffield is a good locality and has supplied records for Heeley, Pitsmoor, Fulwood, Rivelin and Dore.

Sheffield City Museum has a specimen from Grindleford caught by the curator J. W. Baggaley in 1913.

**Legal Protection**

It is illegal to sell or trade Palmate or Smooth Newts without the appropriate license.
Wildlife and Countryside Act 1981
Schedule 5

# SMOOTH NEWT *Triturus vulgaris*

**Identification**

One of the two smaller newts. Adults in the breeding season 84-96 mm long including tail. Male has a well-defined crest along back, continuing along tail, and large black blotches on the throat. Female with a larger number of small throat spots or sometimes without throat spots (see below). Neither sex has a tail filament or spike. Females can sometimes be confused with female Palmate Newts especially outside the breeding season. Very dark-coloured crested males are sometimes confused with the larger Great Crested Newt by inexperienced observers. Smaller size, throat colouration and continuous crest confirm identification as Smooth Newt.

**Distribution: Peak District**

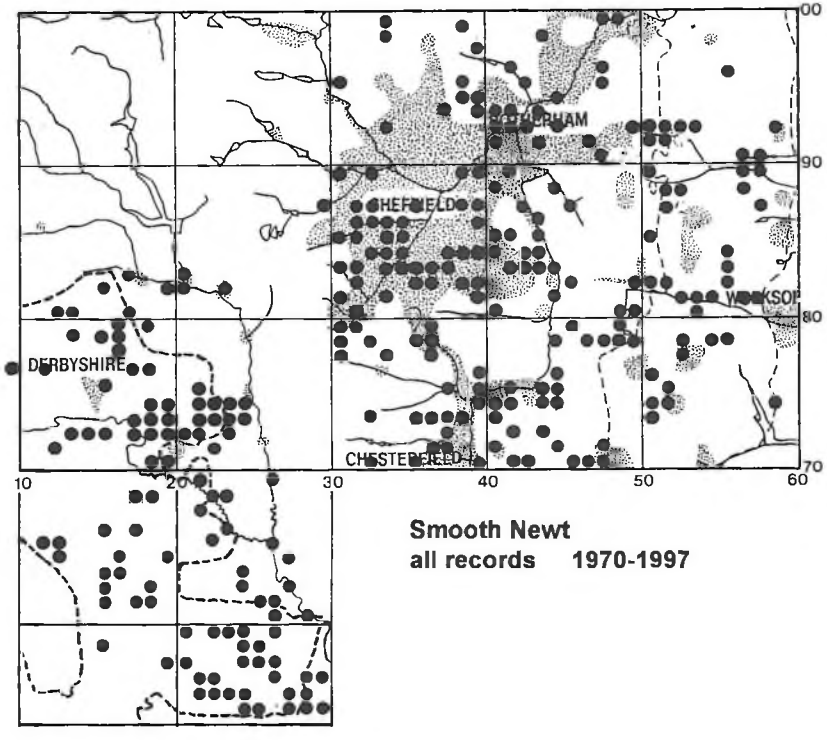
The map indicates two distinct and disjunct areas of distribution. The Peak District distribution to the southwest of Sheffield is associated mainly with Carboniferous Limestone habitats. The map has been extended by four 10km squares to emphasise the abundance of Smooth Newts in the White Peak and adjacent areas. The bold dashed line marks the approximate boundary of the Carboniferous Limestone, and most dots lie within this area. Those outside were found in ponds at Hope, Shatton and Hucklow. Around Calver some Smooth Newts occur in gritstone areas close to the limestone. Further south, ponds in Stanton Moor are interesting because they are shared by Smooth and Palmate Newts.

Monk (1986) in an intensive survey of the Matlock area examined 247 ponds in SK25 and found Smooth Newts in 41 ponds (28 one kilometre squares); an exceptional abundance of newts. The majority of the pond sites were circular clay or concrete lined agricultural ponds of the type commonly called dewponds. Most of these relied on rainfall and surface run-off for water supply. A few are supplied by springs and seepages.

Dry stone walls and limestone scree provide suitable terrestrial and hibernation sites. Several farmers reported finding newts in walls when removing or repairing walls.

Water chemistry is also important to Smooth Newts. Yalden (1986) found this species principally on the Carboniferous Limestone in ponds with pH above 7.0. He handled 439 Smooth Newts at 42 sites in the Peak District. These findings explain the absence of Smooth Newts from much of the gritstone area to the west and north-west of Sheffield where waters are acidic and more suited to Palmate Newts.

Altitude poses an interesting problem. Traditionally Smooth Newts are 'lowland' animals, and Palmate Newts are 'montane'. This holds true for central and eastern Sheffield, but in the Peak District Smooth Newts commonly occur above 1000 feet, with the maximum record on Bradwell Moor at about 1350 feet. Yalden (1986) calculated the median altitude for Smooth Newts as 1050 feet and the median altitude for Palmate Newts as 700 feet. The preponderance of Smooth Newt ponds on the limestone plateau explain these figures.




**Distribution: Central and Eastern Areas**

All but one square lies to the east of the SK30 grid line. Generally a lowland distribution but some ponds in the western suburbs of Sheffield are at altitudes up to 700 feet. The situation in suburban Sheffield is complicated by a history of introduction into garden ponds, so that the distribution pattern is largely artificial in SK38. It seems that Smooth Newts survive quite well in garden ponds on western Sheffield, although the Palmate Newt is more natural. In some areas eg. Loxley, Rivelin, Whirlow, Porter Valley, Sheaf Valley the two species occur together.

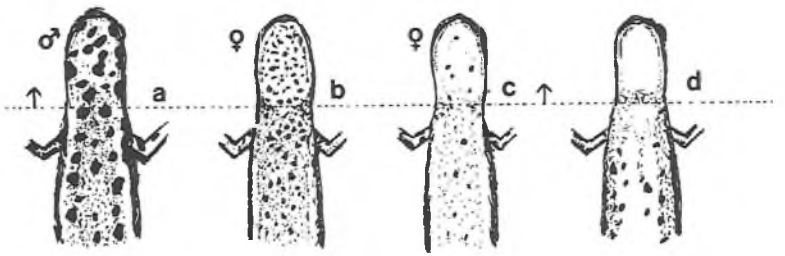
Further south and east the distribution pattern is quite even with a good number of records from the valleys of the Rother and the lower Don. Chesterfield, Staveley, Bolsover and Harthill are also good areas for Smooth Newts. This species is also well distributed in Magnesian Limestone areas outlined by the dashed line in the east.

Further north beyond the map Lunn (1987) found the Smooth Newt to be the most common newt in the Barnsley area, particularly in the Dearne Valley in canals, quarry ponds and marshes; and garden ponds throughout the area.

In the Rotherham District Bill Ely (1991) also found the Smooth Newt to be the most common, and evenly distributed across the district (77 records).

**Throat Spot Patterns**

In 1976 and 1977 I examined 109 Smooth Newts in the Calver area and counted the number of throat spots for each sex.




Newts - undersides indicating throat spot patterns.

| | | |
|---|---|---|
| a | Male Smooth Newt | 'blotchy' |
| b | Female Smooth Newt | 'spotty' |
| c | Female Smooth Newt | 'zitty' to 'zero' |
| d | Palmate Newt | 'immaculate' - for comparison |

Dotted line indicates base line from which spots were counted.
Generally males had quite large spots sometimes merging together mostly between 7 and 20 ('blotchy'). Females had a greater range of spot sizes, the majority falling into two groups 'zitty' individuals had few small weak spots. "Spotty" individuals had many small weak spots (over 41 spots). 10 females were actually 'zero' rated and could be confused with Palmate Newt females which are always 'immaculate'. It is always wise, therefore, to check identification using other characters.

| No. of Throat Spots | Male | Female | |
|---|---|---|---|
| 0 | 0 | 10 | 'zero' |
| 1-10 | 11 | 21 | 'blotchy' |
| 11-20 | 36 | 3 | or |
| 21-30 | 10 | 2 | 'zitty' |
| 31-40 | 0 | 1 | |
| 41+ | 0 | 15 | 'spotty' |

**Measurements**

The population near Calver has proved useful for studies on variation and size of Smooth Newts in the breeding season.

| Length (mm) | 50 Males | | 41 Females | |
|---|---|---|---|---|
| | Mean | Max | Mean | Max |
| Head and Body | 44 | 48 | 45 | 53 |
| Tail | 41 | 47 | 39 | 46 |
| Total Length | 85 | 94 | 84 | 96 |

These figures compare with Malcolm Smith's standard total lengths of 78 - 90 mm for males and 80 - 90 mm for females.

## A Newt Translocation in North Nottinghamshire

In 1988 a linear pond known to contain Smooth and Great Crested Newts was threatened with destruction. Under license from NCC a strong 400m plastic fence was constructed by DW and R.McGibbon in late February. Two-gallon buckets fitted with raised lids were set as pitfall traps every 10 metres along the fence. The fence separated the pond from an adjacent hibernation site, where 17 Great Crested Newts had been found the previous autumn.

At that time there was little guidance available, so the operation was very much experimental. Nowadays translocations are more common, but used only as a last resort when all other conservation measures and mitigation have failed. It is important that translocation is not seen as a soft option by developers and planners.

The buckets were examined daily and all amphibians identified, sexed, and moved to a safe receptor site 0.6km away. An artificial hibernaculum had been constructed using bricks, wood, and rubble from the old site.

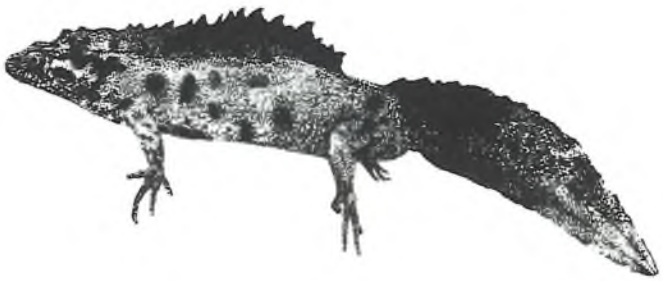
Migration started on 9 March and continued to 10 May when only the odd newt was caught. Mid-March to mid-April was the peak time.

Number of newts caught and rescued

| | | | | |
|---|---|---|---|---|
| **Great Crested Newt** | 69 males | 38 females | 12 juveniles | **119 total** plus 17 in October |
| **Smooth Newt** | 20 males | 37 females | 17 juveniles | **74 total** |

Our thanks go to Dr. Arnold Cooke for advice and local volunteers who were essential for checking the traps each day.

# GREAT CRESTED NEWT Triturus cristatus



**Identification**
Our largest adult newt with a total length of 115 to 160mm. In the breeding season males have a high indented crest with a **diagnostic gap in the crest at the base of the tail.** Both sexes very dark on the upperside with golden yellow underside blotched with black. Sides sprinkled with white. Male tail with a silver streak tinged with metallic blue - a useful field character when surveying by torch light. Most confusion is likely with dark large male Smooth Newts which have a totally different underside, a continuous crest, and even the largest specimens are smaller than Great Crested. Also be aware of the possibility of Italian Crested Newts as escaped pets in urban areas. They have smoother skins, are more brownish in colour with little or no white stippling on the flanks.

**Measurements of Peak District Specimens**

| | head & body | tail | total | mm |
|---|---|---|---|---|
| Males | 72 | 49 | 121 | |
| | 68 | 47 | 115 | |
| Females | 81 | 58 | 139 | |
| | 75 | 55 | 130 | |
| | 72 | 55 | 127 | |
| | 79 | 57 | 136 | |
| | 69 | 65 | 134 | |
| | 71 | 56 | 127 | |

**Distribution**
The map indicates two distinct and disjunct distribution patterns. One is easterly and mainly lowland; the other associated with the White Peak and adjacent marginal areas of the Dark Peak.The two distribution ranges are separated by a region of high acidic moorland which is inhospitable to Great Crested Newts, hence an absence of records from the north-west quarter of the map.

The White Peak is an important national stronghold for Great Crested Newts. A combination of field ponds, dew ponds, concrete tanks, ornamental ponds, a variety of ponds associated with mineral extraction together with dry stone walls, scree, dead wood, damp meadows and limestone rubble form ideal conditions. Field and dew ponds were originally made in hundreds of pastures to water stock on the dry porous plateau.They were traditionally lined with clay and limestone blocks. Later concrete was used.

**Viviparous Lizard** blue-coloured variety. Howden Moors 1989.

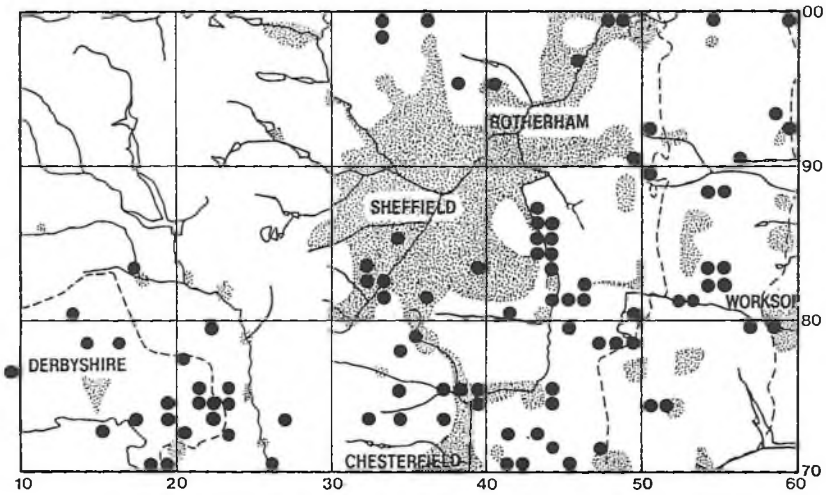
Underside of the same lizard.

**Slow-worms** male and female. Lathkilldale 1976.

**Adders** Eastern Moors 1981.

The area immediately to the south of this map, particularly grid squares SK15, SK16, SK25, SK26 have high densities of Great Crested Newt ponds. Chris Monk has surveyed this region a number of times since 1985 ( Monk 1986, Monk 1990 Report to N.C.C., Monk pers. comm.) In his 1985 survey of SK25 Monk found Great Crested Newts in 36 ponds to the west of Matlock. 29% of his surveyed ponds held more than 10 pairs and at 17% of sites they were the only species present.

Yalden (1986) comments on the Peak National Park. He found Great Crested Newts to be much scarcer than the other two newt species, although fairly widespread with records from 16 sites, often shared with Smooth Newts. In 1980 I observed Great Crested Newts attacking Smooth Newts at Deep Rake, and at the same pond in 1988 a netted female adult disgorged a 4 inch male Smooth Newt which survived the ordeal.




**Great Crested Newt all records 1970-1997**

Within the mapped area there is a good scatter of records from Calver, Coombs Dale, Longstone Edge and Moor, to Ashford, Priestcliffe, Hay Dale, then north to Hope. It is likely that more sites exist in SK17 and SK18.

In gritstone areas records are only known from three sites - Leam, Chatsworth and Bar Brook - all reliable and interesting records. Other sites may exist but generally Great Crested Newts are very rare in natural gritstone areas where most ponds are likely to have the wrong water chemistry.

In the city of Sheffield there are records from Millhouses, Frecheville Pond, Nether Edge, Beauchief and Norton. Some of these records may refer to past introductions to garden ponds, escaped pets, possibly even the Italian Crested Newt *Triturus carnifex*

Most garden ponds are unsuitable for sustaining breeding populations, being either too small, or containing fish which feed on newt larvae. Great Crested Newts do well in large

garden ponds without fish, particularly those with aquatic plants such as Water Soldier, Starwort and Water Cress. For more information refer to the BHS publication **Garden Ponds as Amphibian Sanctuaries.** It is important to note that it is illegal to collect wild Great Crested Newts to introduce into garden ponds.

To the east of Sheffield the valleys of the River Rother and its tributaries in north-east Derbyshire and South Yorkshire form another good stronghold for this species. Disused canals, large ponds, mining subsidence flashes, relict washlands, wet ditches, some fishing ponds, ox-bow lakes and lowland marshes with areas of open water are all important. Recent survey work by Paul Townsend and his colleagues have discovered a good number of sites in N.E.Derbyshire

In the Rotherham District, Ely (1991) reported eleven records of Great Crested Newts, but more have been added in recent years. Sites range from Scholes village in the west to the Permian Limestone in the east. Again, the Rother Valley is a stronghold with a few sites remaining along the lower Don. The Scholes Village pond is interesting because all three newt species have been recorded here since the 1960s. The pond is currently threatened by becoming overgrown and drying up.

There is a good smattering of records along the Permian Limestone and adjacent areas from some two dozen sites across both counties. These include Markland Grips, Pebley, Bolsover, Hellaby, Thurcroft, Tickhill, Sandbeck, Lindrick, Cotterhill and Potteric.

**Legal Protection and Surveys**
Great Crested Newts have a good deal of legal protection which aims to conserve the species and its habitats at all times of year, but has ramifications for survey work and captive breeding. Adult newts, juveniles, larvae and eggs cannot be disturbed, captured, injured, killed or traded without a licence. In practice this means that a licence is required to use a pond net or bottle trap. Observation by torch light is legal and recommended for recording adults. Grayson et al (1991) also recommend the egg search method for which a licence is required.

Additional protection is provided by European legislation. See page 49 **Legal Protection.**

**Conservation**
Great Crested Newts have legal protection and Biodiversity Action Plan (BAP) listings because Britain has the most important European populations and because a severe decline has been recognised for some years. Trevor Beebee noted a decline in S.E. England as early as 1973. Cooke and Scorgie (1983) reported a continuing general decrease in Britain, being most severe in East Anglia and the West Midlands. Some sites have been lost locally but a full review is now required to quantify the situation. Key issues are loss of dew ponds because of neglect, cracking, drying out or silting up (with mains water supply many ponds are becoming redundant) destruction of ponds for opencast coal and mineral extraction; loss of ponds in agricultural areas, introduction of fish, clearing land around ponds and development/change of use for recreation.

Clusters of ponds are important to this species. Grayson et al (1991) introduced the concept of pond clusters with a 250m diameter terrestrial habitat. Their work is based on a survey of Greater Manchester County, possibly the greatest known concentration in the UK.

Further useful information can be found in English Nature publications **Facts about great crested newts** (1994) and **GREAT CRESTED NEWTS Guidelines for developers** (1996)

# VIVIPAROUS LIZARD Lacerta vivipara

**Identification**

Our only native lizard with legs. Confusion only possible with terrestrial newts, so check that animal has scales and/or long toes. Tend to be faster moving than newts in normal conditions, but sluggish in hibernation. Out of usual range/habitat consider alien, introduced or escaped species. European Wall Lizard is superficially similar.

**Distribution**

A distinct westerly distribution pattern with only a few records east of the SK30 line plus very localised distribution in eastern areas. Associated mainly with gritstone areas especially heather moorlands and acidic grassland in the Dark Peak. More localised population in the White Peak, for example Millers Dale, Cressbrook Dale, Chee Dale, Longstone Edge and Moor, Deep Rake, Church Dale, New Houses and Coombs Dale.

Nearer to Sheffield, distribution extends to the western suburbs e.g. Lodge Moor, Bell Hagg, Limb Valley, Totley, Loxley and Wadsley Common, Oughtibridge, Wharncliffe Heath, Deepcar, Greno Woods, Wharncliffe Wood, Blacka Moor, Ringinglow, and some suburban gardens on the western fringes of the city.

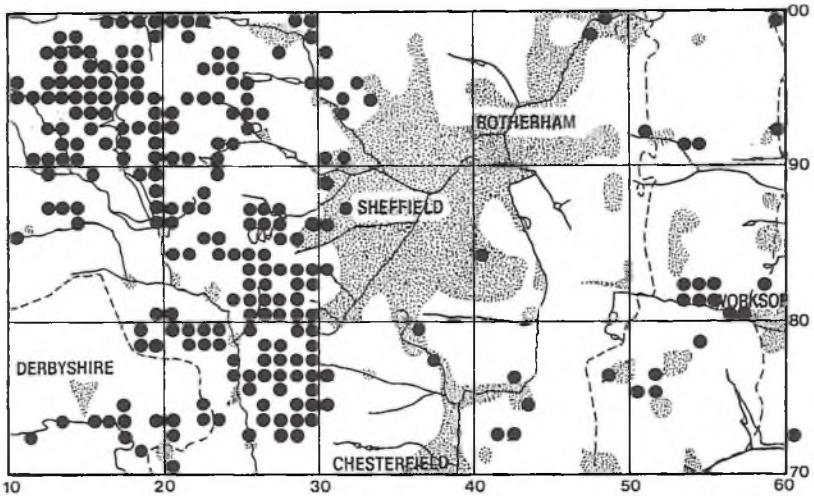
To the east, records are very localised to fragments of habitats, mainly on Permian Limestone - Maltby Crags, Anston Stones, Maltby Common, Tickhill, Denaby Bank, Lindrick Common and Quarry, Chesterfield Canal, Markland Grips, railway between Clowne and Creswell, Slayley near Clowne.

Also associated with railway ballast at Potteric Carr and Wharncliffe Wood.

Nevertheless, the best areas to see Viviparous Lizards are the western moors. A walk along a sunny path in spring or very early on a summer morning is recommended. The footpath along the River Derwent north of Slippery Stones is particularly good. Langsett Moors, Howden Moors, Alport Valley, Derwent Moors, Edale Moor and Kinder, Hallam Moors, Blacka Moor, Houndkirk and the Eastern Moors are other good areas. There is also a good spread of records in the Abney-Bretton-Eyam Moor area.

Distribution in moorland areas extends beyond the southern boundary of the map to Beeley Moor, Stanton Moor and Flash Dam.

In the central area there are isolated but interesting records which require further investigation Breck Farm Staveley (1975 DW and 1992 DDNHS), Unstone sand pit (1977 and 1992), Coal Aston (1970 SR), West Wood and Inkersall (1978 DDNHS), two lizards basking in Wardsend Cemetery, Parkwood Springs (1988 AD). In addition several independent records from Wickfield Heath, Shirebrook indicate the existence of a colony. Beyond the S.E. border of the map is a record for Carburton, several records for Clumber Park and good populations in the forest rides and sandy heaths of Sherwood Forest and North Notts.




**Viviparous Lizard all records 1970-1997**

**Habitat Requirements**

Warm sheltered sunny location especially in spring. Grass banks, logs, walls, stones with cover very close by. Young are born alive, so there is no requirement for egg laying sites. Heather moorlands are ideal, but also frequently associated with Sphagnum bogs, cotton-grass bogs and peaty pools in which they swim to avoid capture. In 1980 Graham Sedgewick noted two young lizards sunning on the carcase of a dead Mountain Hare. At Oughtibridge Signal Box they sunned on a fallen birch log. Dry bracken is used in late season as a suntrap.

**Colour Varieties**

Viviparous Lizards are very variable in colour, usually different shades of brown and olive. Occasionally greenish, bluish or turquoise tinted males are recorded. A population in the Upper Derwent Valley, around Slippery Stones and Cranberry Clough has a high proportion of these greenish-blue specimens.

**Emergence Dates**

Viviparous Lizards usually emerge from hibernation in March and early April on sunny warm spring days. Our earliest records are 7 March 1989 at Shillito Plantation, 9 March 1980 at Back Tor and 17 March 1990 at Derwent Moors and Greaves Piece. Records for late March and early April are common. It is likely that they may emerge in late February in exceptional warm weather. At the back-end of the year, activity in October is common and we have late records from Rook Cabin Flat on 4 November 1978 and Alport on 4 November 1978.

**Predators**

Local records of predation are scarce, although sightings of tail-less lizards, or those with partially grown new tails are common. It seems that many lizards escape predation by shedding the tail at least once. A study of moorland Kestrel diet in the Peak District discovered surprising frequency of lizard scales in pellets. Such pellets have a sort of shiny metallic or glassy appearance.

**Old Records**

The Victorian County History for Derbyshire reports Viviparous Lizards "most abundantly in the north of the county. In 1876 they were very abundant on the moors which reach from Ashopton to Sheffield, especially near Moscar". The Victorian County History for Nottinghamshire states "common in the Worksop District".

Specimens at Sheffield Museum include

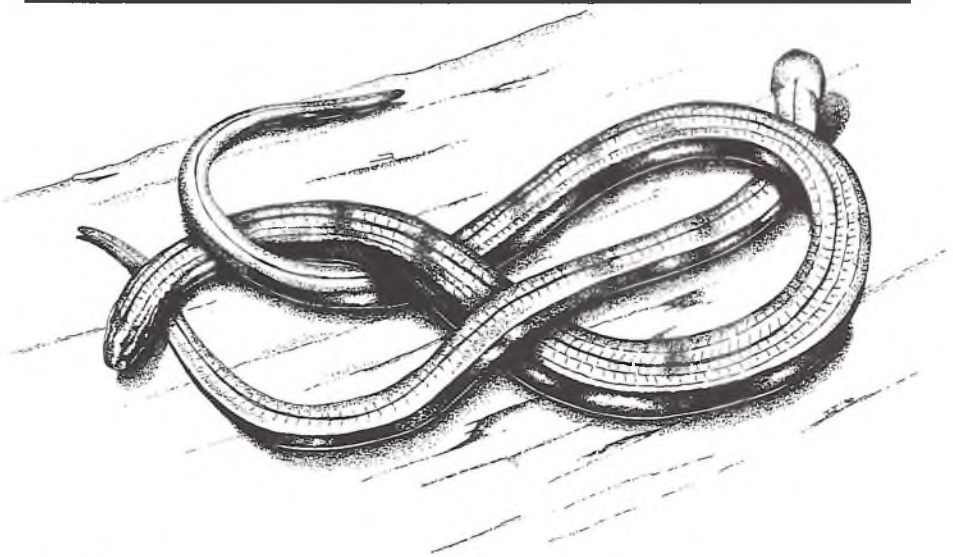
| | | | |
|---|---|---|---|
| 1877 | Oughtibridge | Hutchinson | |
| 1908 | Bole Hills, Sheffield | D.B. Coultras | C.1908.5 |
| 1913 | Cromford | J.W. Baggaley | C.1913.6 |
| 1918 | Moscar | Frank Garkin | C.1918.2 |

Denny (1910) found them to be "not uncommon in dry sandy localities especially on open moorland and commons".

It seems that the status and distribution of Viviparous Lizards has hardly changed in over 100 years, although the picture we have today is far more detailed.

**Legal Protection**
It is illegal to kill, injure, or trade in Viviparous Lizards
Wildlife and Countryside Act
Schedule 5

# SLOW-WORM Anguis fragilis



**Identification**

A legless lizard with a distinct body and tail, small smooth scales giving a highly polished appearance. A close approach will reveal eyes with moveable eyelids (not in snakes). Male colouration uniform brown; females with a dark stripe on the upper surface and dark underside. Young Slow-worms are a beautiful pale golden brown or yellow with a thin stripe down the middle of the back. Confusion with snakes is frequent particularly when the observer gets a brief glimpse in the field.

Some males have light blue scales behind the head on the sides. One recorded from Lathkill Dale 1976 (AB) and another from Vainor Road, Wadsley in 1970.

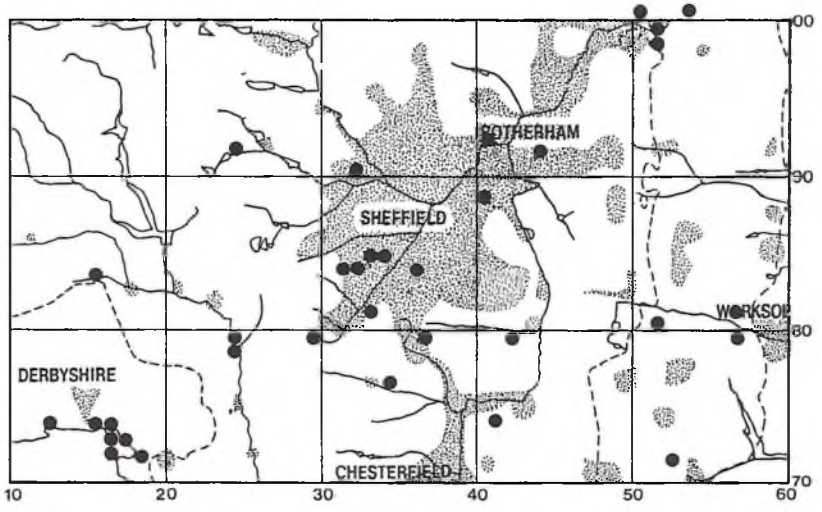
**Distribution**

The map shows a typical scattered distribution of a species in decline; a relic of a former denser distribution, but also influenced by introductions, releases and escaped pets.

There are populations associated with the Carboniferous Limestone dales - Chee Dale, Millers Dale, Cressbrook Village, Monsal Dale, Taddington Dale; and further south beyond the boundaries of the map: Masson, Youlgreave and Bradford Dale. In Lathkill Dale we have continuous records of this well-known colony since 1967.

In the Dark Peak region there are single records from Losehill Hall grounds; Bradfield Dale where Andy Warren saw one being attacked by a shrew. In the Padley area there are recent records from three sites: Coppice Wood, a Grindleford garden and a disused tip at Nether Padley. Further north one was seen in Oxspring Wood in 1994.

Beyond the southern boundary of the map there are well-known colonies along the Derwent Valley. Good numbers seen around Darley Dale; frequent along the Cromford Canal, records from Holloway, Whatstandwell and Lea Bridge.




**Slow-worm all records 1970-1997**

The records from the Holloway/Cromford area are consistent over 28 years, and Slow-worms are still around today. The Darley Dale populations are strong, and it is likely that other localities in the Derwent Valley remain to be discovered. Certainly, suitable habitats exist in many places.

Nearer to Sheffield there are two recent records from the Barlow area and a sighting at Totley Rifle Range in 1968. A record from Mill Lane Eckington in 1992 updates a late 1960s record in an Eckington garden, perhaps indicating a colony in the Lower Moss Valley.

In the Rotherham urban area two Slow-worms were brought in by a cat at Bennett Street in 1995. Four Slow-worms were seen altogether at this urban site (SL). Another interesting Rotherham record is from Broom Valley allotments in 1988. Other records are known introductions and have not been mapped, but are recorded on the database for future reference, and to help explain future distribution patterns.

Within the city of Sheffield there are a number of records of Slow-worms introduced into gardens, which have not been mapped. The central dots refer to a remarkable record of a large healthy Slow-worm found in woodland near Cat Lane in 1976, another in a garden at Vainor Road, Wadsley (1970) and a third on school playing fields off Whiteley Wood Road (1968) and a 'nest' of young at Ecclesall in 1971. To the east there is a smattering of records on the Permian Limestone - Loscar Wood (1970), a quarry near Creswell Crags (1903), Whitwell Wood (mid 1960's), Dinnington (1971), Maltby Common / Roche (1896 & 1913), Langwith Nature Reserve (1991), Manor Lodge Rhodesia (1997), Shireoaks (ca 1991), Hepworth Refactories Worksop (1989). Colin Howes (1986) reviews the records from around the Don Gorge. At Cadeby Cliff evidence was found in Kestrel pellets in 1979; two Slow-worms seen near Pot Ridings Wood in 1982; Conisbrough Castle (1950s and 1960s) and specimens offered for sale in a Doncaster pet shop during the 1960s and early 1 )70s had been collected from the Conisbrough area by local school children. Howes also notes a record near Tickhill in the 1950s.

**Sheffield Museum Collections - Old Records**

| | | | |
|---|---|---|---|
| C.1918-1 | near Bamford | 1918 | A. Keyworth |
| C.1906-1 | Rivelin Valley | 19.1.1906 | Water Committee |
| C.9.5.81-1 | Beauchief Abbey | 9.5.1881 | W. Sampson |
| | Hollow Meadows | 31.3.1880 | E. Winder |

The 1906 specimen was eleven inches long and found alive in making a new road for the Water Committee. It was taken alive to Weston Park Museum where presumably it later died.

Denny (1910) found Slow-worms to be "local but fairly plentiful in some places such as dry heaths and old quarries on the Sheffield and Derbyshire moors". Almost a century later their status is more or less the same - local, widespread, maybe less plentiful except for a few 'hot-spots'. However, I am sure we do not yet have a full picture - there will be some sites still unrecorded for Slow-worms.

Nationally Cooke and Scorgie (1983) found Slow-worms to be declining throughout most of England.

**Activity**

Our earliest record of emergence is 25 March and the latest is 28 September, although it is likely that Slow-worms will continue to be active into October in this part of the world.

All other records are equally spread between April and September in all months.

**Habitats**

It is quite difficult to summarise Slow-worm habitats in this region. Local records relate to a wide variety of habitats across a range of natural areas and geology.

- suburban gardens
- an urban demolition site
- limestone dales - grassland and scrub - over half of our records are from dales
- neutral and acidic grassland slopes - less frequent
- open woodland with sunny glades or rides
- roadside verges

- allotments
- disused quarries
- disused railway track

Water is often close to these habitats, but not always. One Slow-worm was observed swimming in the River Lathkill (Blagden and Whiteley 1974) in the evening.

It seems that the key requirements are as follows:

Plenty of cover, for example rocks, stones, scree, logs, dead wood, compost, loose soil, pieces of flat wood or metal as summer refuges and winter hibernation sites.

Some dampish areas with slugs, worms and insect larvae.

Sunny areas for basking in spring, autumn, summer mornings.

Gardens free of slug pellets.

Slow-worms take to gardens very well, and it is likely that many of our urban records result from escaped pets or animals brought into the region and released.

**Finding Slow-worms**

This is mostly a matter of chance, but you can increase your chances by searching suitable habitats when the temperature is above 9°C, but ideally under 18°C. Slow-worms bask within this temperature window, often partially hidden in vegetation. Sunny spring day and early summer mornings are ideal, but Slow-worms may be out and about in cooler weather on a summer afternoon. Evening searches can also be productive.

Turning over debris is another good search method, particularly for hatchlings which are born in September.

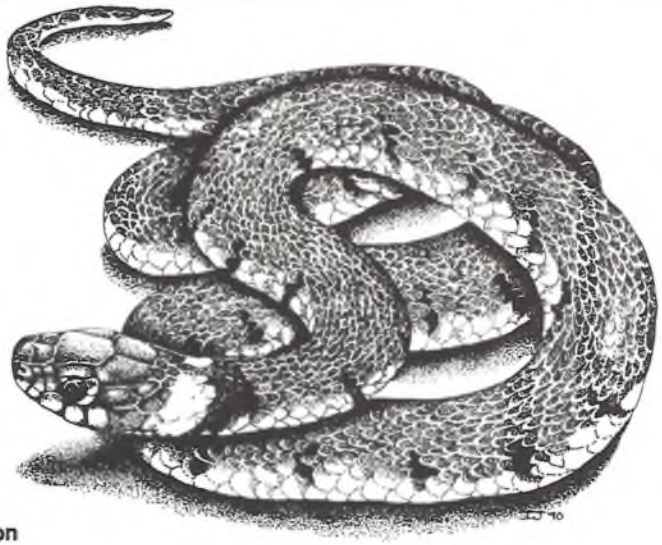
It is important to replace logs, stones, slabs, tins etc carefully after inspection.

**STOP PRESS!!! The Slow-worms of Nether Edge**

An appeal for sightings of Slow-worms in the *Sheffield Telegraph* in early 1998 produced five independent records of Slow -worms in gardens in Nether Edge. Up to six have been seen at one time over a period of ten years. The original introduction was from Dorset. Young have been seen on several occasions. Cats are known to kill them and Magpies have a go too. Meadow Bank Avenue seems to be the main stronghold.

**Legal Protection**
It is illegal to kill, injure, or trade in Slow-worms
Wildlife and Countryside Act
Schedule 5

# GRASS SNAKE Natrix natrix



**Identification**

A creamy -yellow or whitish collar behind the head on the upperside confirms identification as Grass Snake - the easiest British reptile to identify. Adults are much bigger than Adders, typically around 1 metre in length. Some local females grow to 1.7 metres. Eggs are laid in bundles, have a matt-white appearance and an ovoid shape 30mm x 20mm or slightly smaller, in compost heaps or similar microhabitat. Grass Snakes are sometimes reported as Adders by the lay public, who falsely believe that Adders are more common in this region. Often people jump to the wrong conclusion with sad results.

Confusion with Slow-worms is also possible. Snakes do not have a distinct body and tail. Slow-worms tend to be smaller and browner. Juvenile Grass Snakes about the same size as Slow-worms tend to be boldly marked.

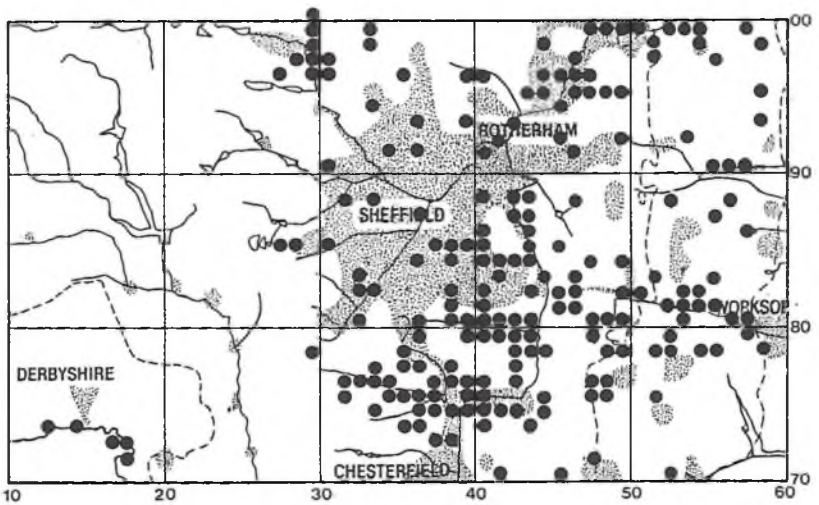
Grass Snakes can be confused with released or escaped exotic snakes (particular Viperine and Dice Snakes). Records away from the normal Grass Snake range of distribution or habitat should be suspected.

**Distribution**

A distinct eastern and central distribution, almost, but not entirely east of grid line 30. There is a correlation with lush lowland wetland habitats, grazing marshes, washlands, canals, lakes, ponds and certain gardens with plenty of cover. Lush vegetation, water and a sunny aspect are general requirements, with artificially moist warm microhabitats for egg-laying. Rotting vegetation, compost heaps, hay and straw are ideal, and frequently used in the region.

Many records are from the valleys of the Rother and its tributaries Barlow Brook, Drone, Moss, Doe Lea and Shire Brook. Grass Snakes are also widespread in the lower Don Valley from Tinsley to the Don Gorge and beyond. Also localised in the Upper Don Valley in the Deepcar-Wortley Top-Tin Mill-Wharncliffe area. The Ewden Valley record dates from 1974.

To the east of the Rother they are widespread and reasonably common, for example along the Chesterfield Canal, and associated with water bodies at Carr Vale, Sandbeck, the carrs around Doncaster, Catcliffe Flash, Treeton Dyke, Pebley Reservoir, Steetley Quarry, Beighton Marsh. Also along railway cuttings (eg Clowne, Tankersley, and Wharncliffe) and in damp woodland at Nickerwood, Firebeck, Moss Valley and Whitwell Wood.




**Grass Snake all records 1970-1997**

Grass Snakes are extremely rare in the Peak District. There is an old record from Bakewell (just south of this map) and tantalising old records for Monsal / Millers Dale. Locals knew them at Cressbrook Hall "about 25 years ago in compost heaps" and a dead one was found on the road at Upperdale about the same time. More recently Grass Snakes were seen basking by the River Wye in Millers Dale in 1996 and 1997, and swimming in the River Wye near Wormhill in 1996.

Beyond the western margin of the map, one was seen at Coombs Reservoir ca.1970 (pers.comm. Derek Alsop) and Derby Museum has a record for Hayfield (SK0387).

The records from Lodge Moor Conduit date from 1980 and 1982. These are the most westerly records in suburban Sheffield and the highest altitude records at around 1025 feet above sea level. One specimen was reported to have the lengthways stripes typical of the Italian sub-species. It seems likely that the Lodge Moor Grass Snakes originated as escaped or released pets. A specimen in a Killamarsh garden in 1992 also had stripes.

Grass Snakes are frequently seen in suburban Sheffield, Rotherham, Dronfield, Doncaster and Chesterfield wherever conditions are suitable. In the past they have been occasionally killed by a brutal garden spade, truncheon or hammer and the slaughterer honoured in the local press with false bravado, holding his trophy. These events are probably now less common, and of course illegal.

Suburban records are known for Norfolk Park, Manor, Handsworth, Tinsley Sewage Farm (Blackburn Meadows), Arbourthorne, Hackenthorpe, Frecheville, Gleadless, Beauchief, Broomhill, Hyde Park, Dobcroft, Ecclesall Wood saw mill in wood chippings, Silverdale, Carr Forge Dam, Southey Green, Dronfield, and some suburbs in Rotherham.

In the Doncaster region Howes (1973) found Grass Snakes to be common and locally abundant showing a preference for lowland areas associated with the main river systems. Major concentrations are around the wet pastures, flashes and washland adjacent to the River Don, the remnants of the Doncaster Carrs, and further to the east Thorne and Hatfield Moors.

To the south of this map the Cromford Canal is highly recommended for watching Grass Snakes. Here adults and young are regularly seen basking on the canal banks, or swimming amongst aquatic vegetation seeking frogs or fish.

In Derbyshire, Moyes (1995) provides a distribution map for the entire county. He notes a snake from Pleasley in 1985 measuring 167cm (66 inches). He also notes a correlation with shales and sandstones of the Upper Carboniferous, with the majority of records from river systems, particularly the Derwent and Cromford Canal.

This account is based on 350 records from approx. 205 squares.

**Old Records**

There are few 19th century records of Grass Snakes. Leighton (1901) says they are less common than Adder in the Bakewell district and average about 30". Denny (1910) states that the Grass Snake is fairly common in moist grassy situations not far from water, and quotes records from Mr Arnold Brittain - Tinsley Park Wood, Ecclesall Wood and Abbeydale. Dr Corbet records it as being abundant in the Doncaster district.

Sheffield City Museum has four old preserved specimens.

| | | | |
|---|---|---|---|
| C.5.6.79-1 | Wharncliffe Crags | 2.6.1879 | A. Young |
| C.1907-1 | Reliance Place, Sheffield | 14.8.1907 | one young specimen in garden |
| C.1909-1 | Bawtry - contains 27 eggs. | 9.8.1909 | W.G.Shaw |
| C.1909-3 | Bawtry - $33^{3}/_{8}$ inches long | 27.8.1909 | W.G.Shaw |
| and a record | Norfolk Bridge, Attercliffe | 1894 | |

**Legal Protection**

It is illegal to kill, injure, or trade in Grass Snakes or their eggs.
Wildlife and Countryside Act
Schedule 5

## GUIDELINES FOR THE MAKING OF GRASS SNAKE EGG-LAYING SITES

Grass Snake females deposit their eggs within heaps of rotting plant material where the heat of decomposition provides the optimum temperature for egg development.

Some breeding sites have been lost owing to changes in land management; for example canal restoration, loss of river flood tidelines, fewer manure heaps, modern silaging etc.

Artificial egg-laying sites may improve the breeding success of Grass Snakes

**What material should be used?**
Local materials e.g. manure at stables and farms, sawdust, cut reeds and reed waste, fallen leaves, compost heaps, hay and grass litter, as appropriate to the local habitat.

**Where should they be sited?**
Heaps should be placed within good Grass Snake habitat, usually near wetlands. They should be in sunshine for at least part of the day and not too close to roads, buildings and any areas disturbed by people.

**When should they be made?**
A new heap or replenished old one should be ready by early June onwards. Eggs may be in the heap from June to late September depending on the timing of the snake's breeding season. The heap might also serve as a hibernation site from mid-October to mid-April.

**How should a heap be constructed?**
A heap needs good aeration and good moisture content
Under ideal conditions bacteria and fungi can steadily rot material generating a temperature of 23-28 Celsius to speed development of embryos. Ideally the base of the heap should be a mesh of coarse material such as branches or logs to provide a sufficient air supply.

Then add fairly stiff material like twigs and prunings mixed with less rigid material. This creates gaps for aeration and access places for snakes to crawl deep within the heap to lay eggs in small cavities.

Cover the heap with a layer of dry plant material such as long grass to try to absorb some moisture. After two years a heap needs to be replenished.

**Size**
Generally large heaps are better than small ones. Large heaps provide egg-laying space for more snakes and provide protection from predators, and conserve more heat. A minimum recommended size is 1.6m long by 1.2m wide by 1m high after initial settling. It is likely to be used in the first egg-laying season after construction

**Reference**. These notes are based on a BHSCC information sheet by John Buckley

# ADDER Vipera berus

**Identification.**

The dark zig-zag markings along the body and tail and the inverted V-shaped mark behind the head are characteristic features. Adders have no cream or pale neck markings typical of Grass Snakes. Fast-moving Slow-worms disappearing under cover may cause confusion, but lack the contrasting markings of Adders. There has been confusion with large *Limax* slugs; but these move more slowly and have distinct tentacles.

Male Adders have bright contrasting markings. Females are less boldly marked, usually with brownish ground colour. Males are duller immediately before skin sloughing. Individuals can be identified by their unique markings.

**Distribution**

The map indicates a substantial cluster of records relating to a well-known population around the Eastern Moors of the Peak District. To the south of the map there are records for Beeley Moors. Other clusters of records in the north relate to populations at the northern end of Wharncliffe Wood and Wharncliffe Heath and in the West Wood/Tankersley area. Both clusters have multiple records. To the south of Sheffield John Newton recorded them in Oakes Park in 1995, confirming a 1976 record by David Glaves.

Elsewhere dots refer to single records. In 1983 a child was admitted to the Children's Hospital having been bitten by an Adder at Loxley Common. I investigated the site on sunny mornings in spring 1987, without success, and spent many days in 1993 surveying the site. The habitat is very suitable for Adders - plenty of grassy banks amidst heather and bare sandy areas. The site is suffering from severe birch invasion, which is currently being checked. It is likely that a small localised colony still survives on Loxley/Wadsley Common, but at the present time enquiries to regular visitors have all proved negative.

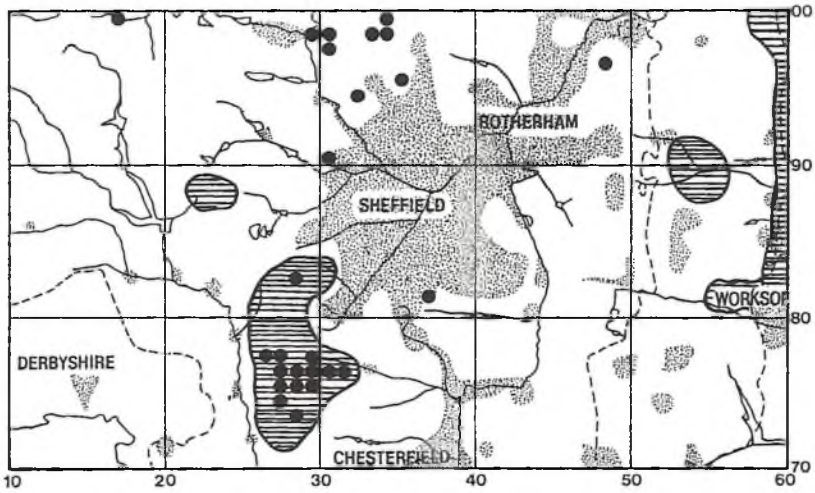
The Langsett Moors record is a headless dead specimen found by Eric Smith in May 1994. The Greno Wood record is of an individual sunning by the side of a sandy path in late summer 1975. The Ringinglow record is a juvenile (ca 12") in a ride in Lady Canning's Plantation in 1980. All these records require further investigation.

In the Rotherham District Adders may well be near extinction. There are old records for the Roche Abbey area, a spurious unconfirmed record for the Lindrick area around 1976. The last record for Ravenfield Park is 1983. The habitat here is suitable, but despite careful searching in recent years John Newton and I have been unable to find any more Adders, although one was seen by Mrs Norris at Back Lane, Hooton Roberts in 1994.

The Eastern Moors population is well-recorded particularly during the last 15 years. The range appears to extend from Wellington Monument to White Edge in the west to Fox Lane in the east, extending down into the Cordwell Valley (1994). Indeed the late Richard Doncaster was told of an (unconfirmed) report of a horse receiving an Adder bite at Peakley Hill. This record is of more than passing interest because there are two other unconfirmed (and unmapped) records adjacent to the Dronfield by-pass not so far away. Richard Doncaster's father knew of Adders at Fox Lane Plantation in 1941.

Most of the Eastern Moors population is recorded from localised "hot spots" within the vast sanctuary area, established and rangered by the Peak District National Park Authority. It would not be a suitable place for **illegal collecting** for the reptile pet trade (certainly there are easier pickings in southern England and Scotland), so the main threat is deliberate killing by a minority of misguided people, and a lesser threat from accidental killing by horse hooves or vehicles. Current management plans for the area take the requirements of Adders on board.

Currently, the main populations of Adders in the Doncaster region lie to the north east of our map, on the peatlands of Thorne, Hatfield, Crowle and Goole Moors. In March 1971, Mr C. Cockburn counted 50 on Thorne Moors in a single morning. Colin Howes (1973) records relict populations at Barrow Hills, Austerfield, Rossington and Bessacarr. In the Barnsley District to the north of the map there are recent records from Birdwell, Stainborough, Kexborough, and Wombwell Wood.




● **Adder all records 1975-1997**

≡ extrapolated Victorian distribution

**Victorian Distribution**

A study of old records, published notes and museum specimens indicates that the distribution of Adders about one hundred years ago was not too different from that of today. There has been some shrinkage in range and local extinctions. Denny (1910) found them to be "fairly common .... on the moors and commons of the district". Leighton (1901) noted that they were more common than Grass Snakes in the Bakewell district.

In the Doncaster District, Howes (1973) quotes old records stretching along the ridges of Bunter sands and gravels running north from the Worksop area through Bawtry and up to Doncaster, on the Permian marls and along the eastern edge of the Magnesian Limestone. To the north east of Doncaster there is a wealth of historical literature. Adders have been well known on Thorne Moors for centuries. In William Casson's *History of Thorne* (1829) vipers were stated to be *very numerous in some parts of the morass, especially on the edge but seldom attempted to bite anyone unless provoked.* He also states that *in very hot weather they may frequently be seen basking on the banks of the drain, and even sometimes on the footpaths.*

Casson also writes about the activities of Harry Warburton of Thorne, *the last in this part of the country who earned part of his livelihood by procuring vipers for the apothecaries and druggists. With a stout stick and an old stocking, Harry used to sally forth onto the moor in search of reptiles and seldom returned without a capture*

## OBSERVING ADDERS IN THE PEAK DISTRICT

Adders are shy retiring reptiles. They respond to a normal walker by sliding away into thick vegetation. A slow careful approach is essential for a close examination rather than just a glimpse of a tail disappearing into the heather. It is possible to get within inches of a basking snake in the springtime without disturbing the animal. The cover photograph was taken with a standard lens at about 8 inches distance. Sometimes a snake will coil and adopt a strike posture, usually followed by escape behaviour. With experience one can observe and photograph Adders, then back off without disturbance. This should be our aim!

Sunny spring mornings from March to May are the best times for Adder-watching. Our earliest record is 22 March and our latest 20 October. It is likely that emergence from hibernation may be even earlier in some years, and late February is a possibility.
Appleby (1971) says that of the three British snakes the Adder is the most resistant to cold and can remain active at a temperature of 8$^{o}$C. They are disinclined to feed when the temperature is below 15$^{o}$C and spend the warmer days of autumn just lying in the sun.

Basic habitat requirements are safe dry undisturbed hibernation sites, basking sites in spring and autumn, summer feeding areas, and corridors for dispersal and transit.

Basking sites are usually south eastern facing slopes to catch the equinoctial and summer morning sunshine. Bracken seems to be quite important. Dead tussocks provide shelter and a suitable micro-climate, but shade out sites later in the year. Heather and grass tussocks are also useful. One basking site was lost on Big Moor when an exclusion fence was erected and sheep grazed right up to the fence. Another was lost through control of bracken. Such incidents are rare as Peak Park Authority management plans are sensitive to the needs of Adders. The best areas for Adders seem to be a mosaic of heather, bracken and grasses on SE banks with wetlands nearby.

Wetlands are important as summer feeding sites. Our few July records are from wet rushy areas with voles, lizards, small birds and frogs-all potential prey items.

We have little information on transit and dispersal routes except for the odd casualty where a corridor crosses a road.

These notes are based on members' observations, mainly John Newton and DW. The Peak DNPA is undertaking further research.

**Specimens in Sheffield Museum**

| | | |
|---|---|---|
| C.6.9.76-1 | near Owler Bar | 4.9.1876 |
| C.13.5.78-1 | Hollow Meadows | 13.5.1878 |
| C.87-9 | Dore Moor * | 1887 |
| C.1908-8 | Padley Woods | 12.3.1908 |
| C.14.6.80-1 | Baslow | 14.6.1880 |
| X.1971-847 | Owler Bar | 29.7.1924 |
| | Owler Bar ** | 21.4.1924 |
| X.1971-842 | Burbage Moors | 24.8.1941 |
| | Ramsley Moor | 1962 |

* stomach contains a Short-tailed Vole
** female 25½" long featured in local newspapers

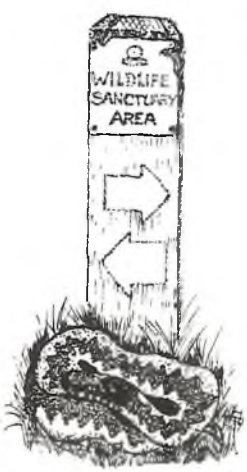
**Restricting Factors**

With vast square miles of apparently suitable habitat available in the Dark Peak, it is tempting to speculate why Adders are so restricted in distribution. Many moorlands are well-walked, studied and surveyed by naturalists so it seems unlikely that too many colonies remain undiscovered. A combination of factors seems relevant.

* Altitude may be restricting. The Eastern Moors Adders live up to about the 1000 ft contour. Higher moors often have very severe spring weather. In some years snow stays thick until April or May - not ideal for emergence from hibernation.

* Many of the high moors have been subject to a rigorous burning regime as part of Red Grouse management. Adders would be unable to tolerate repeated fires.

* Intensive keepering in the 19th century may have led to deliberate persecution and local extinctions well before local zoologists surveyed Adders about 120 years ago.




**Legal Protection**
It is illegal to kill, injure, or trade in Adders
Wildlife and Countryside Act
Schedule 5

# ALIENS AND INTRODUCTIONS

From time to time our relatively poor fauna is enriched by the arrival of foreign or exotic species. They are sometimes accidentally imported with merchandise; escaped pets; or deliberate introductions by misguided people. Such introductions are illegal under the Wildlife and Countryside Act, but they still continue; and cause considerable excitement.

**Red-eared Terrapins** **Trachemys scripta**

These natives of south-eastern USA have become very popular pets in recent years; but they do grow quite quickly. There is a tendency to liberate animals which have outgrown domestic tanks. Records which have come to our attention include

Staveley, one in a ditch July 1981.
Shire Brook April 1981.
Abbeydale Hamlet millpond. July 1986 seen on several occasions in the dam and often on the log at the edge of the water.
River Don. Corporation Street bridge May 1990 a ten inch specimen sunning on the river banks (*Sheffield Star* 1 June 1990).
Sheffield Canal near Staniforth Arms. 1990s.
Catcliffe Flash. September 1990 a five/six inch specimen sunning on a tree trunk by the water.
Worsbrough Reservoir. September 1991, May 1992.
Weston Park. September 1991 basking on a rock in the water. Still present in 1995 - several sightings.
Moss Valley: two at Ford millpond, also at weir near Neverfear dam. (1980s).
River Derwent Hathersage (1992) a six to eight inch specimen sunbathing on rocks.
Ford millpond, Moss Valley (1997).
Woodhouse Washlands - in a drain (1995).
Graves Park (1997) one of three terrapins made the national press by allegedly biting off Coots' legs (Daily Express, 21 April 1997).
In additions specimens have survived the winter in local gardens; notably one at Endcliffe which survived for three years.

**Western Whip Snake** **Coluber viridiflavus**

I was called out to identify a road casualty at Green Moor, Thurgoland on 12 May 1991, which proved to be a Western Whip Snake, a denizen of France, Italy and Switzerland.

**Red-sided Garter Snake** **Thamnopsis sirtalis**

One captured at a plant nursery in a polythene greenhouse at Chapeltown in June 1988. Another found in Chesterfield in 1987. Presumed escaped pets. A native of North America.

**Tessellated or Dice Snake** **Natrix tessellata**

A south-east European snake, once popular in pet shops. Several records of escaped pets, e.g. Walkley 1979. Also likely in packing cases of European origin, e.g. Sheffield Fruit Market September 1963.

**Ghost Corn Snake**
Norfolk Park, 1997

**Viperine Snake** **Natrix maura**

A harmless relative of the Grass Snake, from Europe. Frequently kept as pets. Escapees recorded in Ranmoor Sheffield (1979) and Bradwell (August 1961).

**Dhaman** **Ptyas sp.**

A five foot long Dhaman or Ratsnake (Asian) was found at Woodthorpe, Sheffield in October 1980 - the most impressive escapee of the year.

**Common Boa** **Boa constrictor**

Several specimens in the first half of this century in fruit from the West Indies. The best documented examples are specimens at Weston Park Museum, Sheffield. 7 November 1907 a dead young specimen in bananas from Costa Rica found at Castlefolds Market by Enos Kaye. 15 November 1921 - one found alive in bananas from the West Indies by J. Roper and Sons (Banana Importers). It died at Weston Park Museum on 28 November (No. C.1921.2).

**Common Egg-eating Snake** **Dasypeltis scabra**

One found in Sheffield Fruit Market August 1962. Origin uncertain but native to Africa.

**Dromicus chamissonis**

One specimen occurred in a consignment of Chilean onions April 1961. The range of this species includes Chile, Peru and the Galapagos Islands (D.A.E. Spalding).

**Monitor Lizards**

There are approximately 30 species world-wide. Local records refer to escaped pets - Sheffield 1994; Grimesthorpe a young one 3 foot long (Sheffield Star 8 June 1988) and a remarkable record on Surprise Edge 1978 seen by a number of people from the road. This only goes to show that anything can turn up anywhere!

**European Wall Lizard** **Podarcis muralis**

One found dead at Aldwarke, Rotherham 4 June 1978 (Rotherham Museum). Another found in a garden at Norton 28 September 1985. This common and widespread European lizard is frequently imported and has naturalised in parts of southern England.

**Salamander** **Tylototriton verrucosus**

One found on a doorstep at Ullswater Drive, Dronfield by Andrew White on 7 July 1989. An escaped pet identified by Tim Riley at Sheffield Museum.

**Fire Salamander** **Salamandra salamandra**

A yellow and black seven inch long European Fire Salamander was found by Paul Kniveton in his garden in Palgrave Road, Wadsley, Sheffield (Sheffield Star 25 June 1987).

**Japanese Fire-bellied Newt**

In autumn 1990 one was found walking up a garden path in the Rotherham suburb of Broom. This animal resembles the Great Crested Newt in general appearance but is brown rather than black and the underside is crimson. Presumed to be an escaped pet (Ely 1991).

**Tree Frogs**

Small tree frogs are frequently found in imported fruit, but rarely identified to species. Chris Mattison has identified *Hyla rubra* in bananas from Surinam and *Eleutherodactylus* from the Windward Islands (Mattison 1986).

**Green Frogs**

In 1979 C. Gregg reported introducing Marsh Frogs (*Rana ridibunda*) and Edible Frogs (*Rana esculenta*) to Wortley Park from stock purchased several years previously. There is no further information.

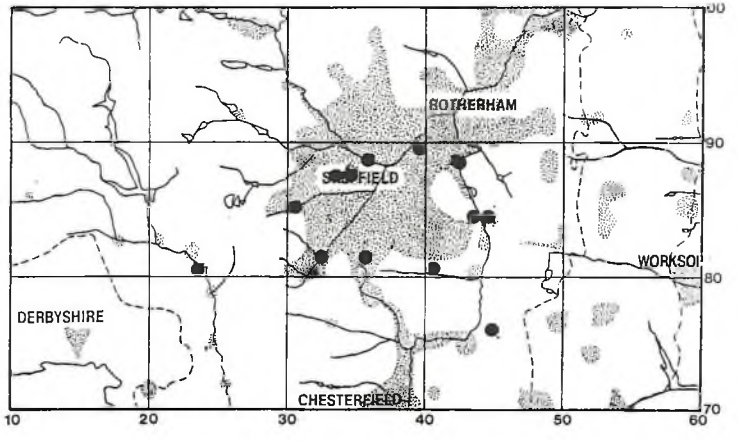
**Oriental Fire-bellied Toad** **Bombina orientalis**

A beautiful species with bold green and black markings above, black and orange below. One was found in a garden pond at Parkhead, Sheffield in June 1997. Its origin is unknown. This species is sometimes sold in pet shops.

**STOP PRESS 1998**

**Sand Lizard** **Lacerta agilis**

A beautiful green male was found in a garden at Ashton Close, Killamarsh, Derbyshire in May 1998 and passed on to Wayne Gilbert of Sheffield Turtle Trust, who kindly showed me the specimen. The origin of this lizard is unknown.




**Red-eared Terrapins all feral records have been mapped**

# LEGAL PROTECTION

A rough guide to the situation as it stands in 1997. Only local species are included in this summary. For a full account refer to **The Herpetofauna Worker's Guide** published each year by Froglife

## Wildlife and Countryside Act 1981 and later amendments

**Schedule 5** all nine local native species are protected

**Great Crested Newt** -it is illegal to kill, injure, take, handle, sell, or trade in adults, larvae or eggs. It is illegal to damage, destroy or obstruct access to any structure or place used for shelter or protection ( e.g. ponds and hibernacula) or to disturb them in these places without the appropriate license.

**Grass Snake, Adder, Slow-worm, Viviparous Lizard** - it is illegal to kill or injure these species, or to trade in these species without the appropriate license.

**Common Frog, Common Toad, Smooth Newt, Palmate Newt** - it is illegal to sell or trade in these species without the appropriate license.

**Schedule 9** - refers to non-native species which are currently established but for which a license is required for release into the wild.

## EUROPEAN LAW applying to local species

EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Directive 92/43/EEC of 21 May 1992) Requires the designation of Special Areas of Conservation for species listed in Annex IIa includes **Great Crested Newt**

Requires the strict protection of species listed in Annex IVa includes **Great Crested Newt**

Regulates the exploitation and methods used to kill species listed in Annex Va including **Common Frog**

**BERN CONVENTION** ( The Convention on the Conservation Of European Wildlife and Natural Habitats )
Protects the habitats; prohibits deliberate damage to important breeding sites; prohibits deliberate capture; killing, disturbance and trade in species listed in Appendix II including **Great Crested Newt**

Regulates the exploitation; bans certain means of capture or killing of species listed in Appendix III including **Common Frog, Common Toad, Smooth Newt, Palmate Newt, Slow-worm, Viviparous Lizard, Adder, Grass Snake.**

# Sorby Reptile & Amphibian Group

Formed in 1985 as the Sheffield and North Derbyshire Reptile and Amphibian Group, and affiliated to HGBI (Herpetofauna Groups of Britain and Ireland)

It is an **ad hoc** group of enthusiasts which co-ordinates and networks surveys, recording, conservation, promotion and education in the Sheffield, Rotherham, Barnsley and north Derbyshire regions.

Past and present activities include:

* collecting information and records of all local species
* organising toad patrols
* organising removal of unwanted frogs and spawn (no longer policy)
* assistance establishing the Thurgoland Toad Tunnel
* conserving Palmate Newt ponds
* rescuing Smooth Newts from ponds in imminent danger
* a licensed Great Crested Newt translocation
* inputting data into the planning process
* contributing to national surveys
* displays and fund-raising
* recording and publications
* rescuing Grass Snakes discovered during building work
* input to local Biodiversity Action Plans and Red Data Books
* press and publicity promoting reptile and amphibian conservation
* finding suitable homes for alien species

S.R.A.G. functions as a working group of individuals co-ordinated by the:

Reptile and Amphibian Recorder
Sorby Natural History Society
6 Pancake Row
Cressbrook
Derbyshire SK17 8SY

Fax: 0114 2750957
e-mail: derek@sheffmusmag.demon.co.uk

# Future Recording. Where do we go from here?

Recording doesn't stop here!

This publication and its associated archive form a detailed (but naturally incomplete) basis for future studies. We do not pretend to have a complete picture at this stage, and there must be many more exciting discoveries to be made.

Recording, surveys and monitoring will continue:

* A new updated Atlas by the year 2001
* Targeted surveys of the rarer species
* More intensive site surveys
* A complete blanket survey of newt ponds and refugia by the year 2004
* Special appeals for information on introduced species, aliens and escaped animals
* Monitoring Red-leg and other forms of mass mortality
* Most important of all are casual records from naturalists, conservation workers, rangers, foresters, farmers, gardeners and all other people outdoors.

Please keep sending in records to:

Derek Whiteley
6 Pancake Row
Cressbrook
Derbyshire
SK17 8SY

or FAX them on 0114 2750957
or e-mail them to derek@sheffmusmag.demon.co.uk

## CURRENT LEAGUE TABLE

| Species | number of recorded km squares |
|---|---|
| Common Frog | 700 |
| Common Toad | 468 |
| Viviparous Lizard | 236 |
| Smooth Newt | 232 |
| Grass Snake | 200 |
| Great Crested Newt | 94 |
| Palmate Newt | 84 |
| Slow-worm | 30 |
| Adder | 26 |
| Red-eared Terrapin | 13 |
| Midwife Toad | 2 |

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No. 2 Snakes Need Friends. Advice on general enquiries about snakes in gardens
No. 3 Amphibians and Roads
No. 4 Signing Toad Crossings
No. 5 Reptile and Amphibian Recording
No. 6 Conserving Grass Snakes
No. 7 Unusual Frog Mortality (October 1995)
No. 8 Exotic Reptiles and Amphibians in the Wild (June 1997)

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The production of this book, and the detailed picture of distribution and status has involved the co-operation of hundreds of people. It is always difficult to select those who have played a greater part at the risk of offending others, but I will make an attempt anyway.

My interest in reptiles and amphibians was aroused in 1971 working with Ian Lee at the R.S.P.B. Coombes Valley reserve. In 1973 and 1974 I enjoyed many recording trips with Steve Byers, whose gift of Malcolm Smith's book really got things going. At that time we enjoyed searching for amphibians with Austin Brackenbury and members of Sorby Zoological Section field trips.

Colin Howes, at Doncaster Museum has freely provided many records and much useful advice to the present day. Derek Yalden has provided many Peak District records, particularly of newts, and a great deal of information and discussion about newt ponds and the requirements of individual species.

Special thanks are due to John Newton, particularly for his reptile records, and for joint field trips to record Peak District Adders, since 1981, and assisting with Grass Snake rescues.

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Special thanks to Chris Monk for sending the results of his 1985 newt pond survey, mainly from the White Peak around Matlock and for printouts of his 1994-1997 records. On the eastern side of the county Paul Townsend has spent the past few years intensively surveying amphibian sites in N.E. Derbyshire, and has kindly made his data available; adding many new dots to the maps.

Sandra Lemon, for records, enthusiasm, information about newts, Grass Snakes and exotic escapees in the region.

Around Dronfield, Norman Best, Brian Smithson and members of the Dronfield and District Natural History Society have collected hundreds of records during the past 15 years, plastering SK37 with dots.

Alan Lazenby provided the illustration and account of toad diet, and Mrs W Horsfall kindly involved me in the Thurgoland Toad Tunnel project; which was fascinating and enjoyable.

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**Grass Snake** north Nottinghamshire 1987.

Below: young Grass Snakes hatching from eggs, Barlow 1997. Photo Paul Richards.

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