



Wyre Forest Study Group

REVIEW OF HERPETOFAUNA BEHAVIOUR AND WEATHER CONDITIONS – 2001

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Introduction

The correlation between weather and reptile behaviour continues to interest and intrigue the herpetologist. Climatological records have been taken at Knowles Mill since 1982 and reptile observations have been ongoing since 1978 in several sites within the vicinity of Knowles Mill.

The year 2001 will be remembered in the UK for more than the weather pattern. On February 24th, Foot and Mouth Disease was confirmed in Northumberland and Essex, and spread rapidly throughout most of Britain. As a result the countryside was closed four days later, including the Wyre Forest.

The usual reptile and amphibian surveys were curtailed and only a few sites were visited, with their owner's permission. By the time restrictions began to be lifted, the reptile and amphibian year was virtually over. As a result a full report of adder numbers cannot be presented for the year.

Graph 1 illustrates the decline in Adder population.

Weather – Diary

JANUARY was generally a cold sunny month. It began with a lift in temperatures¹ allowing the snow of late December to thaw. Mid month the temperatures again dropped below freezing for 4 days. This was accompanied by snow flurries at intervals from the 18th to the 21st when there was an overnight fall of 30mm. The cold weather broke with heavy rain and thunder on the 23rd, followed by a gale in the early hours of the 24th. Rainfall totalled 52.5mm for the month. The warmest day was on the 23rd with a top temperature of 9.0°C. Three nights shared the lowest temperature, with – 9.0°C recorded on the 10th 14th and 17th. There were 23 air frosts, and ground frost was recorded on every night of the month.

Mean Monthly Max. 4.5°C Mean Monthly Min. -1.5°C
Rainfall 52.5mm Mean Humidity 87%

FEBRUARY was the coldest since 1996 and began with freezing fog which glazed the world with a coating of ice. This was displaced by sleet and heavy rain on the 4th, cloud and more rain followed over the next 2 days as a vigorous cold front brought snow, hail, thunder and lightning at

intervals. The 7th dawned fine and sunny, and by mid-day the air temperature reached 10.0°C, and the ground 11.5°C, enough to draw out the first male adders to bask. They were then seen regularly on the sunny days throughout the month. The warmest day was the 21st with a maximum 12.5°C air temperature and 18.0°C on the ground. This was also the day when the first spawning frogs were observed. By the 23rd a cold, wintry spell brought snow, hail, and sleet showers. These conditions persisted till the end of the month. The lowest temperature occurred on the night of the 18th with – 7.2°C recorded, one of 19 air- and 25 ground frosts.

Mean Monthly Max. 6.3°C Mean Monthly Min. - 0.7°C
Rainfall 52.5mm Mean Humidity 87%

MARCH came in with continued snow showers in a biting cold wind on the 1st and 2nd. Several dry and sunny days followed. On south-facing slopes sheltered from the cold northerly winds male adders continued to bask. The lowest temperature of the month was recorded on the 5th when the ground reached –10.0°C. The weather became milder on the 6th, when more frogs were recorded spawning in an air temperature reaching 10.5°C and ground temperatures peaking at 13.5°C. The month now fell into a long unsettled spell with cloud and rain on most days, and snow showers on the 17th, 18th, 20th and 21st, and again on the 27th. Very little sunshine was recorded throughout this period, but common lizards and slow-worms were found during a survey on the 13th. On the 30th a fine day dawned with sufficient sunshine to tempt the first female adders above ground, and the first frog tadpoles were seen in a forest pond. The 31st, although cloudy with showers, was the warmest day of the month (14.2°C air and 31.0°C ground). A total of 8 air and 20 ground frosts were recorded.

Mean Monthly Max. 8.0°C Mean Monthly Min. 0.9°C
Rainfall 71.0mm Mean Humidity 83%

APRIL started with what was to be the warmest day of the month, 15.5°C air and 26.0°C ground temperatures were recorded. In the warm hazy sunshine all four local reptile species (adder, common lizard, slow worm, and – for the first time this year - grass snake) were seen in reasonable numbers, and the first of the last autumn's baby adders was spotted. But All Fools Day was not typical of the rest of the month, which turned wet and cold and remained so. In all it rained on 22

¹ 2000 had concluded with a very cold spell after Christmas, which gave 6 frosty days when temperatures remained below freezing. The coldest day of this spell was the 29th, when a ground temperature of -14.0°C was recorded.



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days, and there were snow showers on the 4th 5th and 18th. The lowest ground temperature of the month was -7.0°C on the 21st. Great crested newt eggs were reported found on the 6th. The first sloughed skin from a male adder was found on the 17th, but it was not until the 30th that temperatures climbed high enough to trigger the first adder courtship activity, with the air reaching 11.5°C and the ground at 29.5°C . There were 8 air and 20 ground frosts.

Mean Monthly Max. 11.4°C Mean Monthly Min. 2.8°C
Rainfall 103.6mm Mean Humidity 81%

MAY came in with several sunny days in a cool north-west wind which kept temperatures down. During this time male adders continued sloughing, with the last cast skins found on the 4th. On the 7th the wind dropped, allowing temperatures to rise to 15.0°C (air) and 36.0°C (ground). By 10:30am there was a group of male adders scenting excitedly and rearing in combat around a plump female who was clearly in breeding condition. After several combats with his rivals, one large male courted and finally copulated with the female at around 12:30, disappearing with her into the shade of the bracken. Over the following six days the weather became unsettled, with thundery outbreaks, but in the dry warm intervals courtship and copulation continued. This ceased on the 12th, which was the warmest day of the month with an air temperature of 24.0°C and 45.0°C on the ground. After this date the females were seen alone, with no further mating activity. Their skins began to lose their gloss as the month progressed, and became dull as they prepared in turn for their first sloughs of the year in early June. Showers and prolonged rain, often accompanied by thunder made the third week of May the wettest for 20 years, the coldest for 5 years, and the dullest since 1994. In the last week of the month the warm, sunny, dry weather returned. Overall there were 4 air and 6 ground frosts.

Mean Monthly Max. 17.5°C Mean Monthly Min. 6.3°C
Rainfall 39.7mm Mean Humidity 77%

JUNE began with two weeks of cool weather. The first was dry and sunny, the second wet and dull, with thunderstorms and heavy rain on the 15th and 16th. During the second half of the month the weather improved to become warm dry and sunny. The hottest day of the year occurred on the 26th, with an air temperature of 29.0°C . There were no air frosts, but three ground frosts were recorded on the nights of the 8th 9th and 11th.

Mean Monthly Max. 19.6°C Mean Monthly Min. 7.0°C
Rainfall 43.9mm Mean Humidity 82%

JULY was heralded by 5 sunny, hot days, making it the warmest start to the month since 1940. This culminated on the 7th with thunderstorms which marked the start of two weeks of cooler, more changeable weather lasting to the 21st. The last 10 days of the month saw a return to the warm and dry conditions which began it. On the 29th the warmest ever night-time temperature recorded in Britain was logged in Lincoln where it only fell to 19.0°C (air). The thermometer at Knowles Mill dropped to a relatively chilly 13.0°C . The daytime temperature of 28.0°C matched the previous day, these two being the hottest days of the month.

Mean Monthly Max. 21.5°C Mean Monthly Min. 10.9°C
Rainfall 67.0mm Mean Humidity 81%

AUGUST can be summarised as a mixture of sunny and wet weather, often both in any one day. There were torrential thunderstorms on the 15th (which was also the warmest day with 26.0°C air temperature) and 16th. The weather after these storms remained unsettled.

Mean Monthly Max. 20.6°C Mean Monthly Min. 10.6°C
Rainfall 44.3mm Mean Humidity 84%

SEPTEMBER was uneventful in terms of the weather, with average temperatures and rainfall: no frosts were recorded. The highest maximum air temperature of 20.0°C was recorded on the 5th. The last adder record of the year occurred on the 17th.

Mean Monthly Max. 16.0°C Mean Monthly Min. 8.3°C
Rainfall 54.8mm Mean Humidity 85%

OCTOBER was wetter and duller than average, and the warmest since records began in 1766. The warmest day was the 13th with an air temperature of 17.5°C . The first ground frost of the autumn was recorded on the night of the 29th, with the thermometer at precisely 0°C .

Mean Monthly Max. 13.5°C Mean Monthly Min. 8.2°C
Rainfall 121.5mm Mean Humidity 89%

The first week of **NOVEMBER** saw fine, mild weather with long sunny spells. The rest of the month was variable with cooler days and mild cloudy periods with rain. It became exceptionally mild and rainy for the last few days: the 30th being the warmest with 13.0°C air temperature. The coldest night was the 10th with -6.0°C recorded. There were 9 air and 19 ground frosts.

Mean Monthly Max. 9.4°C Mean Monthly Min. 2.1°C
Rainfall 44.1mm Mean Humidity 86%



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DECEMBER came in with a frost-free night, but this was the only one of the month. The warmest day was the 5th with 11.0°C air, but after this the frosts often lingered all day, and the end of the month brought a very cold spell. Snow fell on the 29th and 30th. Night-time lows of -9.0°C were recorded on

the nights of the 15th and 31st, the lowest temperatures of a total of 30 ground and 20 air frosts. Rainfall was below average.

Mean Monthly Max. 4.8°C Mean Monthly Min. 2.1°C
Rainfall 26.4mm Mean Humidity 85%

HERPETOFAUNA DATA

Phenology 2001 Data

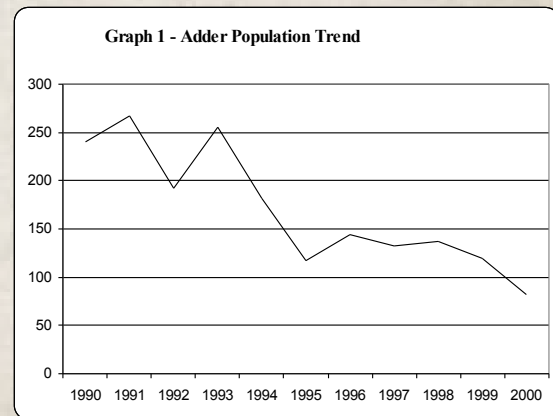
First male adder	February 7
First frogspawn	February 21
First common lizard and slow-worm	March 13
First female adder	March 31
First grass snake	April 1
First great crested newt spawn	April 6
First male adder slough	April 17
First adder courtship	April 30
First adder combat and mating	May 7
Last adder mating	May 12
Last adder	September 17

Other Reptiles Recorded During Adder Census

Year	Grass Snakes		Slow-Worms		Lizards	
	Mature	Juvenile	Mature	Juvenile	Mature	Juvenile
1990	30	6	23	3	22	2
1991	16	4	24	11	20	0
1992	22	8	27	8	10	3
1993	45	4	57	5	35	3
1994	18	2	36	10	22	1
1995	19	4	23	13	11	0
1996	18	4	32	16	15	0
1997	25	3	42	11	42	0
1998	20	1	34	8	37	0
1999	26	8	32	9	18	1
2000	11	1	21	3	23	0
2001	Data incomplete due to FMD					

Population Data - Adder Numbers

Year	Sites Surveyed	Sites with Adders	Mature Males	Mature Females	Total
1990	56	50	185	55	240
1991	76	61	211	56	267
1992	78	55	159	33	192
1993	80	59	186	70	256
1994	76	50	153	29	182
1995	76	44	103	14	117
1996	80	41	112	32	144
1997	84	44	102	31	133
1998	85	42	103	34	137
1999	67	35	100	20	120
2000	87	24	69	13	82
2001	Data incomplete due to FMD				



Summary

The year 2000 set a record for rainfall (the wettest since 1872). 2001 was almost equally wet and secured its own place in the records as the warmest since records began in 1766.

Because of the restrictions imposed on the countryside during the Foot and Mouth Disease

epidemic, full surveys of reptile and amphibian habitats were not possible for the year 2001.

Acknowledgements

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