

**The Humberhead Peatlands
National Nature Reserve**

Reptile Report 2008

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1 Introduction

The Humberhead Peatlands N.N.R. consists of two separate areas of lowland raised mire totalling 2887ha. Both areas are designated Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA) under the European Union's Birds Directive (1979) because of the significant U.K. breeding population of European Nightjars, and as Special Areas of Conservation (SAC) under the Habitats Directive (1992), as raised bogs capable of regeneration.

The N.N.R. is managed for conservation by Natural England and (areas of Crowle Moors) by the Lincolnshire Wildlife Trust.

Thorne Moors (which is often defined to mean Thorne and the smaller contiguous moors of Goole, Snaith & Cowick, Crowle and Rawcliffe together, as in this report), at 1918ha is the largest surviving lowland raised mire in Britain. This area lies in three counties, South Yorkshire, East Yorkshire and North Lincolnshire and is covered by Ordnance Survey Explorer maps 280 and 291.

Thorne Moors has a wide range of habitats, from the large open areas of former peat winning areas at the beginning of restoration, to mature woodland. Birch *Betula* scrub dominates in some places along with larger woods of birch and willow *Salix*. There are areas of wet heath type vegetation with, in the more central region and expanding, semi-natural mire vegetation beginning to regenerate.

Hatfield Moors, the slightly smaller of the two raised mires, is situated approximately 5km to the southwest of Thorne Moors and is covered by Ordnance Survey maps 279 and 280, the whole of the site being in South Yorkshire.

This site has underlying sand and gravel, which is exposed along the western edge of the reserve due to quarrying. This area has been handed over to conservation and landscaped in the form of lakes, sandbanks and islands.

The vegetation on the peatland part of the site is similar to Thorne but the open areas of excavated peatland, at the beginning of restoration dominate due to the fact that this moor was the last one to finish with the peat winning process.

2 Method

2.1 Recording

All records noted come from one of two sources. Incidental sightings are collated by the author via word of mouth or submitted records at the end of the year (28th February the following year acting as a deadline to coincide with the Thorne Moors vertebrate recorder's date allowing him to pass on any reptile records he receives). All other records are accrued as part of Natural England's management plan allowing the author 7 days as part of the work programme for reptile study.

The 5 field study days are bi-monthly, starting in February through to October and consists of covering the Thorne Moors site, starting with walking 3 line transects.. The three line transects were set up this year, identified by previous years study as good reptile areas, including one with 4 500mm square tin sheets. These sheets are painted dark grey and are corrugated. They had been placed on site as part of a previous study (Stentiford 2006) and, although no records were gained from them during this study, were left in situ giving the reptile's time to get used to them. The sheets were checked under whilst walking the transect. To work the transects, both a start and end time and temperature are recorded, the temperature being taken 1.5m from the ground to record air temperature. All reptiles seen along the transect are noted using the same data recording as for incidental sightings. Once the transects are completed, the rest of the field study day is spent looking for reptiles in areas of the site which have no previous records in order to gain a clearer picture of site distribution. Hatfield Moors recording consists of incidental records, made during monthly water level recording days along with records from regular reptile recording volunteers and 2 line transects walked monthly.

2.2 Vegetation

Whenever possible, all sightings noted are accompanied by a note of the vegetation the reptile is both basking on and surrounded by. The vegetation is recorded by species and height.

2.3 Temperature

Temperatures, using a ground thermometer were taken at the site of each recording. A ground temperature was taken at a depth of 55mm and a surface temperature within 1 square metre (to avoid disturbance if possible).

2.4 Weather & time of day

Both weather and time of day were noted to help determine optimum conditions.

2.5 Poise

The reptile's poise was noted (e.g. coiled, stretched out etc.) to see if there is any relation between this and temperature to aid heat retention.

3 Thorne Moors – sightings 2008

3.1 Adder or Northern Viper *Vipera berus*

11/02 1 male Green Belt, 1 male Entrance Bridge
04/03 1 male Northern Canals, 1 male Rhododendron Path
07/03 9 males Hibernacula on Green Belt
11/03 7 males Hibernacula on Green Belt
10/04 2 males Mill Drain Marsh
16/04 8 males Green Belt, 1 male Rhododendron Path
09/05 1 female eastern end of Jones Cable
13/05 1 female western end of Black Water Dyke
14/05 1 female same as above
21/05 1 males Green Belt, 1 male Goole Moor
04/06 1 (no sex ID) Scotts Shed bank top
16/06 1 female basking on black plastic sheet, Scotts Shed bank top
17/06 1 male Rhododendron Path, 1 female Angle Drain
28/06 1 male Eastern Boundary board walk
01/07 1 male Rhododendron Path, 1 male Southern Canal 1
11/07 1 female Scotts Shed bank top
06/08 1 female same as above
15/08 1 male Collis Tram
26/08 1 male 1 female Angle Drain
08/09 1 headless body Middle Moor Tram
18/09 1 (no sex ID) Limestone Road next to Green Belt

3.2 Grass or Ringed Snake *Natrix natrix*

06/06 1 on black plastic sheet Scotts Shed bank top
17/06 1 under recording tin Angle Drain
13/07 1 crossing pit lane from Moorends Recreation Ground
18/09 1 on black plastic sheet Scotts Shed bank top, 1 Limestone Road near Will Pits

3.3 Viviparous or Common Lizard *Lacerta vivipara*

25/02 1 Southern Canal 5
10/06 2 Southern Canal 4, 1 Middle Moor
01/07 1 Rhododendron Path, 1 Southern Canal 1
06/08 5 this year's young Paraffin Track
15/12 1 disturbed from hibernation by management works on Goole Moors

4 Hatfield Moors – sightings 2008

4.1 Adder or Northern Viper *Vipera berus*

26/02 1 male Triangle Woods
27/02 1 male Triangle Woods
29/02 1 male Moor Bank Wood
01/03 1 male 2 females Triangle Woods
02/03 2 males 1 female Triangle Woods
03/03 2 males 1 female Triangle Woods
04/03 1 male 1 female Triangle Woods, 1 female Green Mile
05/03 2 females Triangle Woods
06/03 1 female Triangle Woods
07/03 2 females Triangle Woods
08/03 1 female Triangle Woods
09/03 1 male 3 females Triangle Woods
11/03 1 male 2 females Triangle Woods
12/03 2 (no sex ID) Triangle Woods
13/03 1 male 2 females Triangle Woods
14/03 3 females Triangle Woods
15/03 2 females Triangle Woods
17/03 1 male 1 female Triangle Woods, 1 male 1 female western side of Ten Acre Lake
27/03 1 male 3 females Triangle Woods, 1 female Green Mile
29/03 1 male 4 females Triangle Woods, 1 female Green Mile
30/03 3 males 7 females Triangle Woods
31/03 5 males 12 females Triangle Woods, 1 male Ash Dump, 1 male Whites Corner,
1 (no sex ID) Green Mile
01/04 4 males 4 females Triangle Woods, 1 female Green Mile, 1 (no sex ID) Moor
Bank Wood
02/04 2 females Triangle Woods, 6 males 18 females Green Mile
03/04 1 male 2 females Triangle Woods, 1 male Green Mile, 1 (no sex ID) Moor
Bank Wood
04/04 3 males 4 females Triangle Woods
05/04 1 female Triangle Woods
06/04 1 male 2 females Triangle Woods, 2 females Green Mile, 1 male 1 female
eastern side of Ten Acre Lake
07/04 2 males Triangle Woods
09/04 2 males 1 female Triangle Woods, 2 males 3 females Green Mile
10/04 2 males 3 females Triangle Woods, 3 males 3 females eastern side of Ten Acre
Lake, 1 male 1 female Green Mile
11/04 1 male 2 females Triangle woods
12/04 1 female Triangle Woods, 1 male eastern side of Ten Acre Lake
15/04 1 male 1 female Triangle Woods, 1 male 1 female Packards Heath, 1 female
Green Mile
18/04 1 male Triangle Woods
19/04 1 male Triangle Woods
22/04 1 male Triangle Woods, 1 female Green Mile, 1 male 1 female mating Dragon Backs
23/04 2 males 1 female Dragon Backs
26/04 1 male 1 female Triangle Woods, 2 males Dragon Backs

29/04 1 male Triangle Woods
 01/05 1 male Triangle Woods
 02/05 3 males 1 female Triangle Woods
 03/05 2 males 1 female Triangle Woods, 3 males 1 female Green Mile
 05/05 1 female Green Mile
 06/05 1 male 1 female Triangle Woods,
 07/05 2 males Triangle Woods
 08/05 1 male Triangle Woods
 10/05 1 male Dragon Backs
 14/05 2 (no sex ID) Moor Bank Wood
 21/05 1 male 6 females Triangle Woods
 22/05 1 male Triangle Woods
 28/05 1 male Green Mile
 29/05 1 male Triangle Woods
 04/06 1 male Green Mile
 08/06 1 male Green Mile
 10/06 1 female Triangle Woods
 13/06 1 female Triangle Woods, 2 males 1 female Green Mile
 14/06 1 female Triangle Woods
 15/06 1 female Green Mile
 16/06 1 female Triangle Woods, 1 female Dragon Backs
 17/06 1 female Triangle Woods
 19/06 1 female Triangle woods
 20/06 1 female Triangle Woods
 22/06 2 males 2 females Green Mile
 23/06 1 female Triangle Woods
 26/06 1 female Dragon Backs
 27/06 1 female Triangle Woods, 1 male gravel ponds
 29/06 1 male Triangle Woods
 30/06 3 females Triangle Woods, 1 male 1 female Moor Bank Wood, 3 males Green Mile
 02/07 1 (no sex ID) rear of prison next to open peat
 05/07 5 (no sex ID) Green Mile
 20/07 1 female Green Mile
 21/07 1 male 7 females Triangle Woods
 22/07 1 male 2 females Triangle Woods
 23/07 1 female Triangle Woods, 1 female Green Mile, 1 female Dragon Backs
 24/07 1 female Triangle Woods, 2 females Green Mile
 25/07 1 female Triangle Woods
 26/07 1 male Triangle Woods, 1 male 2 females Dragon Backs
 27/07 1 male 3 females Dragon Backs
 28/07 1 male 1 female Green Mile
 29/07 1 female Triangle Woods, 1 female Green Mile
 31/07 2 females Triangle Woods, 1 female Green Mile
 01/08 1 (no sex ID) rear of prison, 1 western side of Ten Acre Lake, 1 coiled with
 Grass Snake Ten Acre Lake
 03/08 1 male 1 female Green Mile, 2 females gravel ponds
 05/08 3 females Green Mile, 1 male Moor Bank Wood
 08/08 2 (no sex ID) rear of prison
 09/08 1 female Green Mile
 13/08 2 males Green Mile

14/08 1 female Canberra car park containers
15/08 1 female Dragon Backs
18/08 1 female Packards Heath
26/08 1 male Triangle Woods, 1 female Green Mile, 1 female Dragon Backs
27/08 1 female Kilham
28/08 5 males 2 females Moor Bank Wood, 2 males Green Mile, 2 males Deer Ride
30/08 1 (no sex ID) Green Mile
03/09 1 female Green Mile
08/09 2 (no sex ID) Moor Bank Wood
11/09 1 female Green Mile
13/09 2 females Green Mile
17/09 1 (no sex ID) Green Mile
18/09 1 (no sex ID) Moor Bank Wood
24/09 2 (no sex ID) Green Mile
25/09 1 male + 1 this year's young Green Mile
27/09 1 male Green Mile
28/09 1 male 2 females (no location given)
02/10 1 male last year's young Moor Bank Wood
08/10 1 male Triangle Woods
22/10 1 female Green Mile

4.2 Grass or Ringed Snake *Natrix natrix*

31/03 1 Triangle Woods
01/04 1 Green Mile
02/04 2 Green Mile
03/04 1 Moor Bank Wood
04/04 1 Whites Corner
09/04 1 Triangle Woods
24/04 1 hunting young Common Toad Prison Ponds area
30/04 1 Green Mile, 1 Packards Heath
01/05 2 green Mile
02/05 1 Triangle Woods, 1 Green Mile
06/05 1 Dragon Backs
07/05 1 Moor Bank Wood
24/05 1 Dragon Backs
26/05 1 (no location given)
28/05 1 Triangle Woods, 1 Green Mile
29/05 2 Triangle Woods, 1 Green Mile
31/05 1 (no location given)
04/06 1 Green Mile
05/06 1 Green Mile
08/06 1 Green Mile
13/06 1 Green Mile
20/06 2 Green Mile
22/06 2 Green Mile
23/06 1 Green Mile
29/06 2 Triangle Woods

30/06 4 Moor Bank Wood, 4 Green Mile, 1 Deer Ride
05/07 5 Green Mile
18/07 1 (no location given)
21/07 1 Triangle Woods
27/07 1 Dragon Backs
01/08 1 Prison Ponds, 1 coiled round Adder Ten Acre Lake
07/08 1 Triangle Woods
08/08 1 rear of prison
13/08 1 swimming across Badger Corner Lake
28/08 2 Green Mile, 1 Deer Ride
01/09 1 Dragon Backs
03/09 2 Green Mile, 1 Triangle Woods
04/09 1 Green Mile
10/09 1 Green Mile
11/09 1 Green Mile
13/09 1+1 this year's young Green Mile
24/09 1 Green Mile
27/09 1 Green Mile, 1 Dragon Backs
28/09 1 adult + 1 young (no location given)
11/10 1 Dragon Backs
01/12 1 found dead Moor Bank Triangle

4.3 Viviparous or Common Lizard *Lacerta vivipara*

30/03 1 Triangle Woods
31/03 1 Ash Dump
23/05 1 Ash Dump
22/06 1 Triangle Woods
21/07 1 Triangle Woods
31/07 1 Green Mile
13/08 1 Packards Heath
28/08 1 Moor Bank Wood, 1 Green Mile
27/09 1 Green Mile

5 Results

5.1 Recording methods

The transect work again proved to be very productive with Kath and Ernie Smith running the two Hatfield lines throughout the year although time constraints meant the Thorne transects were not done in optimum weather conditions (for results see 8.1. & 8.2 Appendices). Incidental sightings have been very good this year with an incredible 109 days where Adders were noted on Hatfield and 47 for Grass Snake on the same site

5.2 Preferred vegetation

Most sightings during spring, early summer, involve the reptiles basking on either dead birch *Betula sp.* leaves or dead bracken *Peridium aquilinum* fronds in south facing clearings amongst *Calluna vulgaris* 300-450mm tall. These clearings create a microclimate, which can be up to 2 degrees warmer than the surrounding air if there is even a slight breeze. Almost all sightings were within 2 metres of taller trees (3m+) of birch, willow *Salix sp.* or *Rhododendron ponticum*, which the reptiles used as a retreat, under the roots, when disturbed.

During late summer, the reptiles could be found in the same areas but maybe 1m further back in the shade in the higher temperatures.

Occasional sightings through the season involved the reptiles on bare peat banks at the base of birch, willow or rhododendron amongst exposed roots.

5.3 Optimum temperatures

Ground temperatures when reptiles were present varied between 10-27 degrees, surface temperatures between 10-27 degrees.

Whenever the air temperature went above 30 degrees, the only reptiles to be seen were the occasional common lizard scurrying about.

5.4 Preferred weather conditions and time of day

As last year, reptile sightings have been made throughout the day, starting early morning. This is probably down to the fact that there has been greater site coverage again this year, with more observers out looking for reptiles from first light. Later in the summer, the reptiles could be observed later in the day, up to 6.25p.m. This was following a very hot day and the peat ground had retained the heat, sometimes warmer than the surface temperature, causing the reptiles to make the most of the retained warmth.

The best weather conditions to observe reptiles appear to be overcast days with occasional sunny spells. These days will find the reptiles less 'warmed up' and therefore more lethargic, remaining out in the limited warmth as long as possible. Windy conditions seem more likely to send the reptiles under cover than slight drizzle. Several times I have observed adders remain basking through light rain showers interspersed with sunny spells whilst a slight breeze seems to cool them down too quickly and they soon retreat underground.

5.5 Poise in relation to conditions

There are several poises observed with reptiles, mostly the snakes. Common lizards, when basking tend to be straight out with their head tilted up, presumably to be aware of approaching danger. The only other times I have observed them are when they are scurrying away.

Snakes, both grass snakes and adders, adopt several poses when basking. The most common pose is the circular coil followed by the oval coil. Sometimes a snake will lay straight out or in a horseshoe type, open loop and occasionally they form a concertina 's' shape. Adders will also flatten their ribs out to achieve more surface area when the sun is not so strong, I have only observed this in the oval coil, the horseshoe and the straight out.

The type of poise does not appear to be determined by the temperature, more by the terrain and the need for the snake's body to fit into the contours of the ground to enable it to keep lower and therefore out of the wind. Whenever the snake has been observed 'flattened out' by myself, the wind has been slightly stronger than usual.

6 Conclusion

The sheer size of the two sites, which form The Humberhead Peatlands National Nature Reserve, makes it very difficult to survey for reptiles..

The three transects on Thorne Moors and two on Hatfield will go some way to giving a sample representation of the local population and provide trends over time.

Incidental sightings can only increase with the development of Hatfield encouraging more people to visit the site but this does need monitoring as regards disturbance to the reptiles. This could possibly be addressed by educational means as to the importance of these species nationally. This education is partially in place by the fact that Kath and Ernie Smith, Hatfield volunteer reptile recorders, are on site almost every day and becoming known as the people to ask about reptiles.

It is important to identify any hibernacula on both sites, as the trees that appear to be needed for their root systems are not the ideal when managing a lowland raised mire. This fact needs to be addressed when management is carried out along with the need for woodland edge with a *Calluna vulgaris* undergrowth to be both preserved and created as prime reptile habitat.

7 List of Observers

Thanks to all who contributed to the 2008 reptile records.

E. Allen
C. Brett
C. Evans
S. Gee
S. Hiner
I. McDonald
K. Milner
A. Parker
S. Parker
E. Smith
K. Smith
G. Thomas
K. Woolley
D. Whitaker
J. Wozencroft

8 Appendices

8.1 Thorne Moors, transect results.

11/02/08

Transect 1

Start Time – 09.40 End Time – 10.40

- Start Temp. – 12 degrees End Temp. – 18 degrees

Adder; 1 male

Transect 2

Start Time – 10.50 End Time – 11.10

Start Temp – 18 degrees End Temp – 20 degrees

Adder; 1 male

Transect 3

Start Time – 11.45 End Time – 12.30

Start Temp. – 20 degrees End Temp. – 21 degrees

No records

16/04/08

Transect 1

Start Time – 10.10 End Time – 10.55

Start Temp – 18 degrees End Temp – 20 degrees

Adder; 8 males

Transect 2

Start Time – 11.15 End Time – 11.30

Start Temp – 20 degrees End Temp – 20 degrees

Adder; 1 male

Transect 3

Start Time – 13.30 End Time – 14.15

Start Temp – 21 degrees End Temp – 21 degrees

No records

17/06/08

Transect 1

Start Time – 10.00 End Time – 10.50
Start Temp – 21 degrees End Temp – 21 degrees

No records

Transect 2

Start Time – 10.55 End Time – 11.15
Start Temp – 21 degrees End Temp – 21 degrees

Adder; 1 male

Transect 3

Start Time – 12.15 End Time – 12.55
Start Temp – 23 degrees End Temp – 24 degrees

Adder 1 female
Grass Snake 1 (under recording tin)

26/08/08

Transect 1

Start Time – 10.30 End Time – 11.00
Start Temp – 19 degrees End Temp – 20 degrees

No records

Transect 2

Start Time – 12.10 End Time – 12.45
Start Temp – 20 degrees End Temp – 20 degrees

No records

Transect 3

Start Time – 13.00 End Time – 13.45
Start Temp – 19 degrees End Temp – 19 degrees

Adder 1 male (under TR1 recording tin)

27/10/08

Transect 1

Start Time – 14.00 End Time – 14.35

Start Temp – 15 degrees End Temp – 16 degrees

No records

Transect 2

Start Time – 15.30 End Time – 15.45

Start Temp – 15 degrees End Temp – 15 degrees

No records

Transect 3

Start Time – 16.35 End Time – 17.05

Start Temp – 15 degrees End Temp – 14 degrees

No records

8.2 Hatfield Moors, transect results

30/03/08

Transect 1

Start Time – 10.30 End Time – 13.30
Start Temp – 13 degrees End Temp – 13 degrees

Adder 2 males 3 females
Common Lizard 1

31/03/08

Transect2

Start Time – 11.15 End Time – 13.55
Start Temp – 19 degrees End Temp – 22 degrees

Adder 1 male 8 females
Grass Snake 1

07/05/08

Transect 1

Start Time – 10.00 End Time – 13.00
Start Temp – 19 degrees End Temp – 24 degrees

Adder 1 male
Grass Snake 1

15/06/08

Transect 1

Start Time – 15.20 End Time – 17.45
Start Temp – 18 degrees End Temp – 18 degrees

Adder 1 female

21/07/08

Transect 1

Start Time – 16.00 End Time – 18.30
Start Temp – 24 degrees End Temp – 26 degrees

Adder 3 males 1 female
Grass Snake 1

28/09/08

Transect 1

Start Time – 14.00 End Time – 17.00

Start Temp – 22 degrees

End Temp – 20

Adder 1 male 2 females

Grass Snake 2

8.3 Thorne Moors basking data 2008

Date	Sex	Time	Sf temp	Gr temp	Coil	Vegetation	Location
11.02.08	m	11.55am	9	8	C	B,P+R	SE71596 16170
11.02.08	m	12.45am	9	9	O	B+P	SE71396 16001
07.03.08	3m	10.20am	12	11	3R	B,C,P+R	SE71616 16184
07.03.08	2m	10.25am	12	11	R+O	B,C,P+R	SE71646 16177
07.03.08	2m	10.30am	12	11	2R	B,C,P+R	SE71707 16163
07.03.08	m	10.35am	12	11	S	B,C,P+R	SE71688 16165
07.03.08	m	10.40am	12	11	R	B,C,P+R	SE71639 16178
16.04.08	m	10.05am	14	13	C	C,P+R	SE71761 16145
16.04.08	m	10.15am	12	12	O	B+C	SE71695 16156
16.04.08	m	10.17am	12	11	O	B+C	SE71654 16176
16.04.08	m	10.22am	11	11	R	B,P+R	SE71642 16147
16.04.08	m	10.40am	13	12	C	B,C+P	SE71609 16185
16.04.08	m	10.43am	12	11	R	B+C	SE71603 16187
16.04.08	m	10.46am	12	12	T	B,P+R	SE71502 16182
16.04.08	m	10.50am	12	11	T	B+R	SE71473 16223
16.04.08	m	11.45am	10	10	O	R	SE71756 15929
13.05.08	f	3.36pm	21	20	R	P	SE72050 17567
14.05.08	f	12.00am	21	20	R	P	SE72062 17555
21.05.08	m	10.15am	17	16	R	B+P	SE74615 17076
21.05.08	m	1.45pm	21	20	O	B,P+R	SE71472 16220
21.05.08	m	1.50pm	21	20	T	B+R	SE71470 16230
17.06.08	f	10.40am	23	21	S	B+C	SE73970 14776
17.06.08	m	11.40am	21	21	R	C+R	SE71739 15915
17.06.08	f	2.50pm	21	21	R	n/a	SE72088 17526
01.07.08	m	10.05am	28	25	R	C+P	SE71632 16179
01.07.08	m	10.45am	27	25	R	B+P	SE21730 15507
29.07.08	m	3.05pm	31	30	O	B,C+P	SE71622 16178
26.08.08	f	2.00pm	21	21	R	B+C	SE73957 14779

Data are presented chronologically, noting sex of the Adder, surface temperature in degrees centigrade

(within 1 sq. m), ground temperature in degrees centigrade (at 5.5cm depth), coil shape, coded vegetation characteristics of the site and a detailed (GPS) map reference. Coil characteristics are described as round (R), oval (O), stretched out (S), curved (C), flattened (F) or travelling (T). The recorded vegetation is *Betula* (B), *Calluna* (C), *Molinia* (M), *Pteridium* (P) and *Rhododendron* (Rh).

8.4 Hatfield Moors basking data 2008

Date	Sex	Time	Sf temp	Gr temp	Coil	Vegetation	Location
29.02.08	m	12.20am	9	9	S	B+P	SE70726 04422
31.03.08	m	10.45am	15	13	R	C	SE71554 06430
31.03.08	5m1f	12.05am	17	17	3R,3C	B+R	SE69306 05783
31.03.08	m	3.10pm	19	19	O	B	SE69914 04311
30.04.08	m	8.30am	12	9	S+F	M	SE71576 06636
30.04.08	m+f	12.25am	19	18	2O	B	SE69313 05815
30.04.08	f	2.35pm	19	19	R	B+P	SE70444 04437
30.04.08	m	2.45pm	17	17	R	B	SE70715 04426
28.05.08	m	3.15pm	19	19	C	C+P	SE69552 04596
27.08.08	f	2.30pm	23	23	R	C+P	SE703 082
28.08.08	f	10.30am	24	21	O	B+P	SE70730 04421
28.08.08	m	10.35am	24	23	C	B+P	SE70715 04402
28.08.08	m	10.40am	24	24	C	B+P	SE70702 04425
28.08.08	m	10.50am	23	21	O	P	SE70576 04441
28.08.08	m	11.00am	25	24	O	B,C+P	SE70473 04437
28.08.08	m	11.05am	25	24	R	B,C+P	SE70471 04438
28.08.08	f	11.30am	24	22	R	B,C+P	SE70033 04372
28.08.08	m	12.05pm	23	23	R	B,C+P	SE69231 04848
28.08.08	m	12.10pm	22	22	R	B+P	SE69137 04923
28.08.08	m	12.25pm	24	24	O	B+P	SE69040 04738
28.08.08	m	12.35pm	24	24	T	B+P	SE68832 04486
18.09.08	m	10.15am	21	20	R	B+P	SE68980 05030
18.09.08	m	10.45am	21	21	R	B+P	SE69148 04911
18.09.08	f	11.15am	24	21	C	B+P	SE68814 04464

Data are presented chronologically, noting sex of the Adder, surface temperature in degrees centigrade

(within 1 sq. m), ground temperature in degrees centigrade (at 5.5cm depth), coil shape, coded vegetation characteristics of the site and a detailed (GPS) map reference. Coil characteristics are described as round (R), oval (O), stretched out (S), curved (C), flattened (F) or travelling (T). The recorded vegetation is *Betula* (B), *Calluna* (C), *Molinia* (M), *Pteridium* (P) and *Rhododendron* (Rh).