



## Background

The adder has a large range in Britain. Even though it has probably always been scarce in some areas, there are, nevertheless, concerns about the status of this species. The collective view of informed observers is that the adder has experienced declines, particularly in areas such as the Midlands.

The aim of this survey was to investigate the feasibility of establishing a long-term monitoring programme for the adder, utilising standardised collection of quantifiable data (rather than subjective opinion).

The survey was based on counts of adults made during the springtime lying out period, when adders are at their most visible. Experienced surveyors and field workers submitted counts of adult adders made during this period. At least three counts per site were requested, but all data were welcomed for the purposes of project development.

The focus on springtime aggregations, which are often associated with hibernation sites, has the additional benefit of locating hibernacula, which can be vital when considering site management.

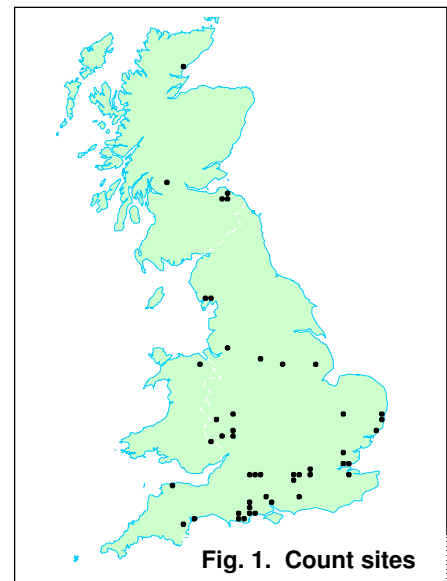


Fig. 1. Count sites

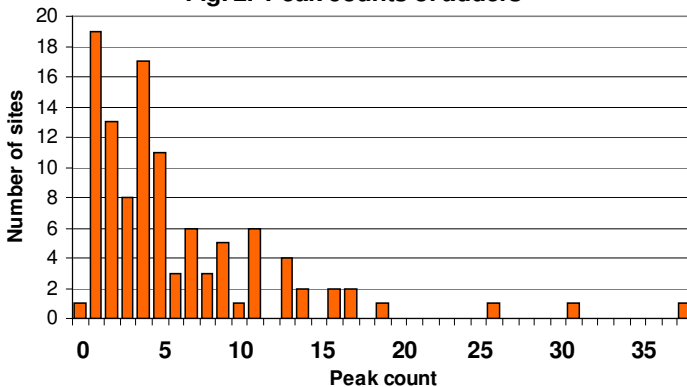
## Response and sites covered

Survey results were received from 34 surveyors, covering 111 sites (Fig. 1. Some dots represent more than one site). Each surveyor visited between 1 and 17 sites; the median number of sites visited was 1. The sites surveyed seemed to be fairly high quality. Most of them had some form of conservation designation (72% were SSSIs and/or national nature reserves). Eighty-six percent of the sites were relatively large (greater than 5 ha) and 79% were linked to other sites or populations, rather than isolated.

Where information on factors affecting sites was reported, no threats were recognised at a third of the sites.

Habitat management was frequently reported to be affecting populations, both in a positive and negative manner (at 30% and 25% of sites respectively). The most frequently reported negative factor was disturbance by public pressure (46% of sites). This relates to disturbance of the adders themselves, not disturbance of their habitat.

Fig. 2. Peak counts of adders

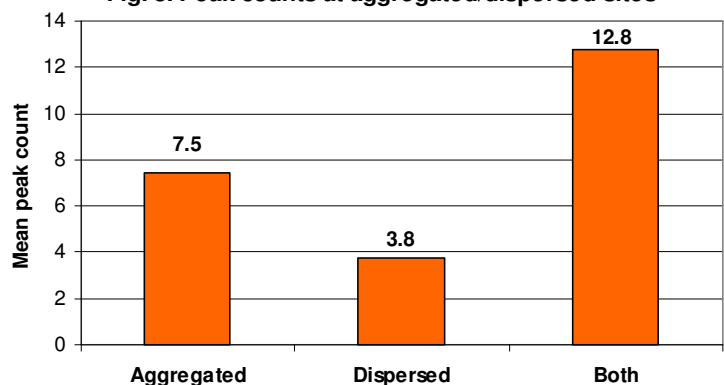


## Numbers of adders counted

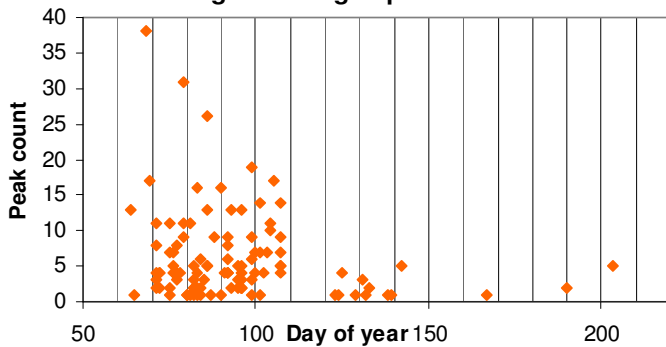
The highest count made at each site was regarded as the peak count. Peak counts ranged from 0 to 38 (Fig. 2). The median peak count was four.

At most sites (55%) the adders counted were aggregated (Fig. 3). However, they were dispersed at 34% of sites and 11% of sites comprised both aggregated and dispersed adders. The mean peak counts differed between these scenarios. At sites where adders were aggregated the mean peak count was 7.5 (the average peak count at a hibernaculum or aggregation area). The lower peak for dispersed adders may mean that it is harder to find animals at these sites, or that aggregation areas have yet to be located.

Fig. 3. Peak counts at aggregated/dispersed sites



**Fig. 4. Timing of peak counts**

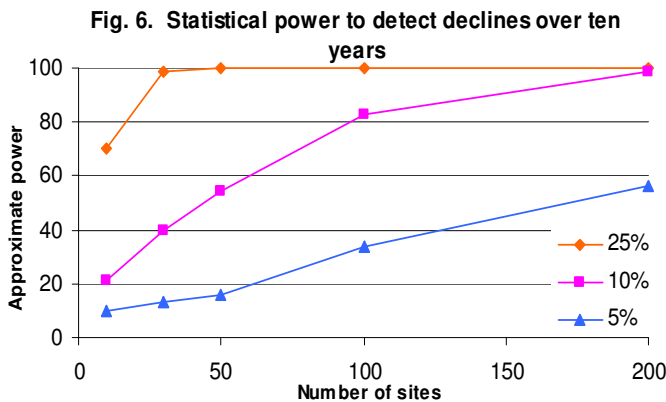


Although there was a great deal of variation in peak counts, they tended to increase with the number of counts made. Fig. 5 shows the cumulative mean peak counts at sites at which four or more counts had been made ( $n = 40$ ). The curve shows that these level off after about five or six counts, which means that, on average, this many counts are required to be fairly sure of recording peak adder numbers.

### Detecting trends

We need to try to ensure that a monitoring programme will be able to detect changes in the numbers of adders counted. A statistical power analysis (determination of a type 2 error) tells us how reliably we can detect

varying degrees of change in the numbers of adders counted. Statistical power of 90% or greater is considered desirable. Power analyses of data collected during 2005 suggest that an unfeasibly large

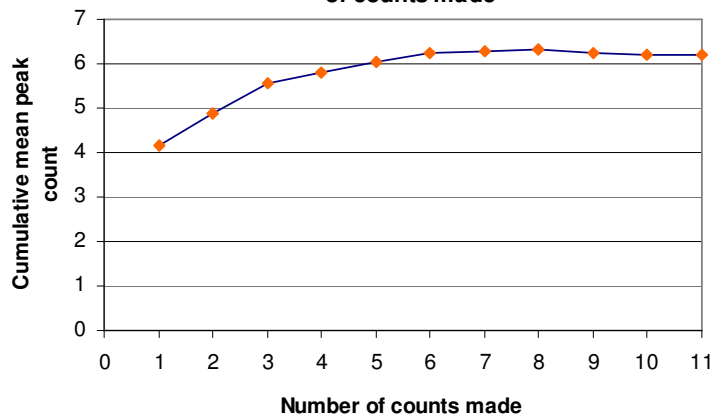


**Fig. 6. Statistical power to detect declines over ten years**

### Timing of peak counts

Site visits to count adders were made from days 28 to 214 (January 28 to August 2) (Fig. 4). The first peak count was obtained on day 64 (March 5), and the last one was made on day 214 (August 2). However, most of the peak counts (87%) were made from day 64 (in Dorset) to day 107 (April 17) (in Suffolk). Another 10 (10%) fell within a cluster between days 123 (May 3) to 142 (May 22) and three (3%) occurred from day 167 (June 16) to 203 (July 22).

**Fig. 5. Increase in mean peak counts with number of counts made**



number of sites would be needed to detect changes in the short-term. However, in the longer-term, the current approach should allow small changes to be detected from a realistically achievable number of sites. For example, Fig. 6 shows that a 10% decline could be reliably detected over a ten-year period with data from about 150 sites. Such analyses will become more meaningful as we collect more data and refine the process. However, the current data suggest that the general approach is practical, and with minor modifications it should allow us to detect changes in the numbers of adder counted.

### The future

*Make the Adder Count* will be repeated in 2006 to establish a long-term surveillance programme. Surveillance of a greater number of sites is desirable, particularly sites where aggregations can be located, as these give higher counts, which makes detection of changes more feasible. Ideally counts would be made at the same sites each year, although additional sites are also required.

To take part in the project, or to obtain further information, please contact the project co-ordinator, John Baker: Phone: 01986 872016, mobile: 07884 441521, email: [addercount@herpconstrust.org.uk](mailto:addercount@herpconstrust.org.uk)

### Thank you

*Make the Adder Count* is funded by The Herpetological Conservation Trust. Jim Foster promoted the count through English Nature, Lee Brady co-ordinated the survey in South-east England and Steve Freeman (BTO) provided statistical advice. The HCT is particularly grateful to the surveyors who contributed data to this survey, and welcomes wide participation in 2006.

***Make the Adder Count* will feed into the National Amphibian and Reptile Recording Scheme (NARRS), an initiative being developed by a partnership of organisations led by The Herpetological Conservation Trust. NARRS is currently at the development stage. If you wish to take part in the consultation process, please contact The HCT via the adder count email above.**