

DISTRIBUTION OF THE ADDER (*VIPERA BERUS*) IN THE QUANTOCK HILLS, SOMERSET: RESULTS OF A SURVEY IN 2011

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Abstract

This paper reports on a survey in spring 2011 by the Reptile and Amphibian Group for Somerset (RAGS) to determine the locations of basking Adders in a selected number of 1km squares on the Quantock Hills, Somerset. Results of the survey are summarised, and confirm the presence of adders on Great Hill, Thorncombe Hill, Halsway Hill, Wilmot's Pool and Black Hill. There was also a sighting on Beacon Hill, for which there was only a single previous record. The contribution that these records make in pinpointing potentially important hibernation-sites (hibernacula) is highlighted, as is the value of such information to those involved in planning and carrying out heathland management on the hills. Further surveys are required to establish whether Adders are still present at Aisholt Common, to better understand the distribution of the species in the Beacon Hill/West Quantoxhead area, and to locate any populations at lower altitudes on the 'shoulders' of the hills.

INTRODUCTION

Records of sightings of the Adder (*Vipera berus*) (Fig. 1) and data on the distribution of the species within the Quantock Hills Area of Outstanding Natural Beauty (AONB) have historically been sparse and few previous studies have been conducted into the species there. Surveys in 2002

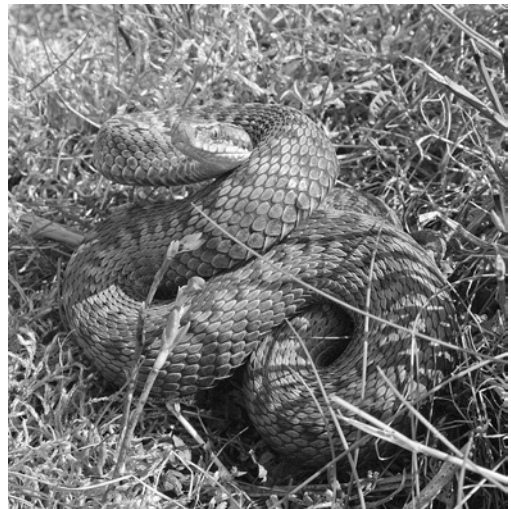


Fig. 1 An Adder in the Quantock Hills
photo: © Kevin Palmer

by the Reptile and Amphibian Group for Somerset (RAGS) and the Somerset Environmental Records Centre (SERC), and further searches in 2007 (Paul Newman, Mark Anderson pers. comm.), produced disappointing results, with very few sightings of Adders – reinforcing the perception that this species is rare on the Quantock range, despite there being some large areas of apparently suitable habitat. This has left land managers in the Quantocks in something of a quandary, and ill-equipped to

instigate management regimes aimed at conserving the species. In an effort to rectify this deficiency, the Quantock Hills AONB Service, in partnership with other interested parties, commissioned Kevin Palmer in 2008 to undertake a study into the status and distribution of the Adder on the Quantocks (Palmer 2009).

The Quantock Hills AONB covers an area of 98km² and reaches elevations of up to 350m above sea level. Within this area Palmer (2009) reported four 'sub-populations' of Adders centred on the following sites: Thorncombe Hill, where 13 males and three females were identified; Wilmot's Pool, where seven males and five females were identified; Black Hill, where three males were identified, but no females; and Great Hill, where Adders were present but no data were collected to enable recognition of individuals. He was careful to point out that the numbers of individuals identified did not constitute reliable estimates of population size, and recommended that further mark-recapture studies would be required before any reliable conclusions on population size could be reached; but the records did, at the very least, provide a valuable insight into the distribution of Adders on the Quantock Hills.

Information of this sort is important in enabling informed decisions to be made about land management practices that could be beneficial (or detrimental) to Adders. In the Quantocks burning is traditionally the method used to manage heathland areas. The impact of burning on Adders is not known, but as burning occurs during February when the animals are still hibernating underground the prospect of them being killed directly by fire seems unlikely. When they emerge from hibernation in the spring, however, they may be vulnerable to increased predation in areas where the vegetation cover has been removed by burning. It was for this reason that it was thought particularly important to locate any hibernation sites (hibernacula) within the AONB.

In 2011 the Quantock Hills Species Action Plan (SAP) for Adders was published, with one of the targets relating to the need to improve our knowledge of Adder distribution and population size on the Quantock Hills. The survey reported here was undertaken during the spring of 2011 by RAGS, with the aim of increasing our understanding of the distribution of Adders within the AONB, and in particular to identify areas of importance as hibernacula. In relation to the latter, it is known that after emerging in early spring Adders spend the next few weeks basking close to their over-wintering

sites before dispersing for the summer; consequently observations during this 'lying out' period in the spring can be used to pinpoint locations of probable hibernacula.

MATERIALS AND METHODS

In consultation with the AONB Service, twelve 1km squares were identified to survey for the presence or absence of Adders (Fig. 2). Twenty-three volunteer surveyors were recruited and two training days were held to familiarise the surveyors in reptile survey and recognition techniques. The survey began immediately after the first training day (19 March) and continued until 31 May. Volunteers were divided into six groups; each group was provided with a hand-held GPS system and asked to survey two of the selected 1km squares. Volunteers could spend as much (or as little) time as they wished within each of the areas surveyed. Surveyors were advised to search for Adders on sunny days with an air temperature exceeding 8°C, conditions conducive to 'basking' by Adders. The survey essentially comprised a visual search, firstly to identify potential basking sites – usually open, sunlit spots within or on the edge of dense vegetation, predominantly on south-facing slopes – and then to traverse these sites, the surveyors keeping their backs to the sun and looking outside the area of shadow and as far ahead as possible so as not to startle a snake from its basking position before a positive identification could be made. Once a snake was located, surveyors were asked to determine its sex and life-stage (juvenile or adult) and record its grid reference.

RESULTS

A total of 16 snakes were located, two of which were 'unconfirmed' and so had to be eliminated from the survey – resulting in 14 new records for Adders in the Quantock Hills (Fig. 2, Table 1). Four of the allocated squares yielded sightings while eight did not. Six animals were located while surveyors were travelling to or from their allotted 1km squares, so not all the sightings in Fig. 2 and Table 1 lie within the designated survey squares.

Two observations were made after the 'official' end of the survey on the 31 May. The deadline of 31 May was somewhat arbitrary, being chosen as it usually coincides with the time that the snakes start

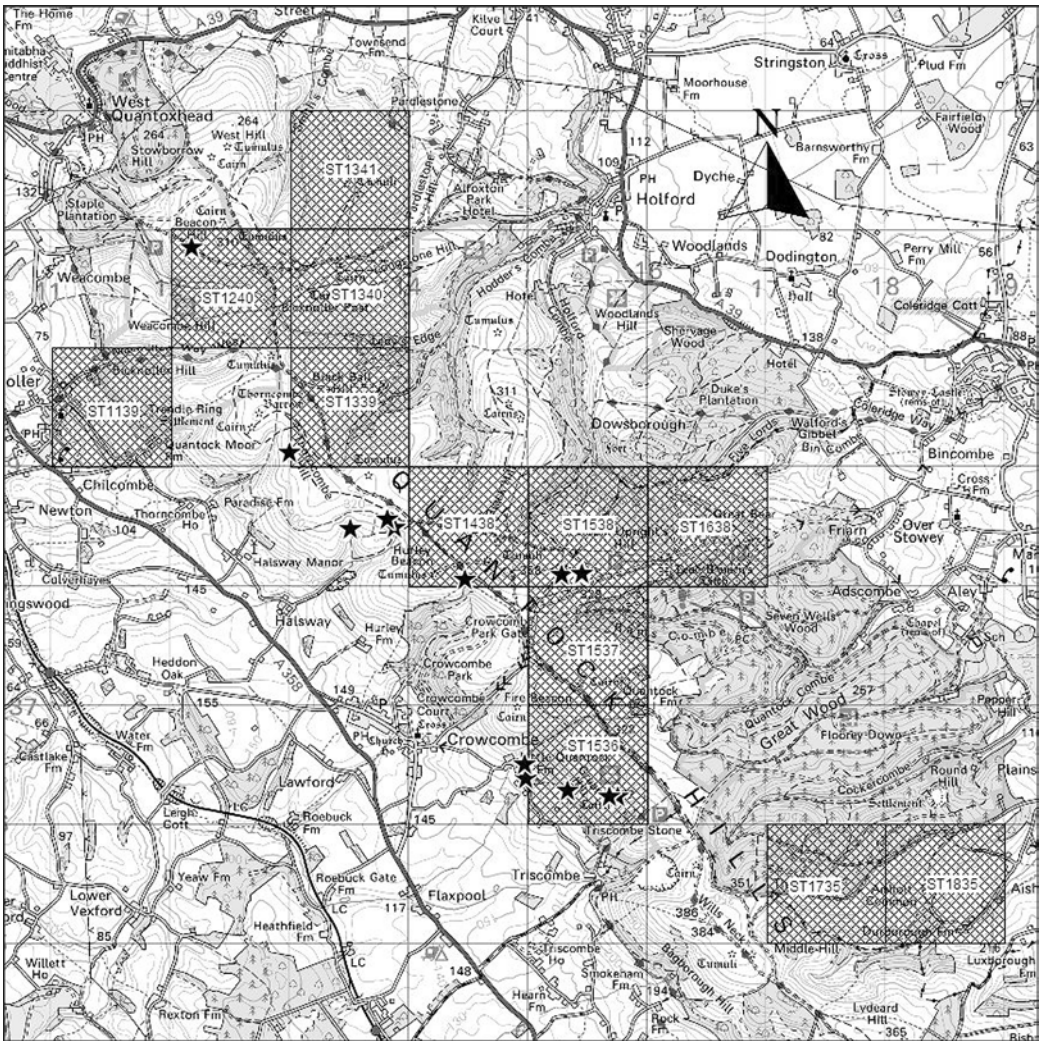


Fig. 2 One km squares on the Quantock Hills surveyed in 2011 with adder locations starred – see Table 1 for further details. © Crown Copyright reserved. Reproduced from Ordnance Survey mapping with the permission of Her Majesty’s Stationary Office under licence No. 100051598 (2012)

to disperse to their summer feeding grounds and become much more difficult to find. However, these records were both from an area that had produced sightings throughout the immediate post-hibernation period, so it was felt likely that they involved animals still close to their over-wintering sites.

The results indicate that an assemblage of Adders is present on the south-facing slope of Great Hill, and that the species also occurs in a broad crescent along the southern scarp of the Quantocks from

Wilmot’s Pool westward to the southern slopes of Black Hill, continuing north-westward along the southern slopes of Halsway Hill and Thorncombe Hill, and with a northerly outlier at Beacon Hill. These records confirm the findings reported by Palmer (2009), who indicated the possibility that there could be hibernacula on the southern slopes of Great Hill, Black Hill and Thorncombe Hill as well as in the vicinity of Wilmot’s Pool. These areas have conditions considered typical of hibernation

TABLE 1: LOCATION, LIFE-STAGE AND SEX OF ADDERS RECORDED DURING THE SPRING 2011 SURVEY

Date	Grid Ref	Site	Life-stage	Sex
23 March	ST 14465 38080	Black Hill	Adult	Male
2 April	ST 15444 38119	Wilmot's Pool	Adult	Female
7 April	ST 13876 38509	Halsway Hill	Adult	Male
7 April	ST 12993 39134	Thorncombe Hill	Adult	Male
7 April	ST 13816 38580	Halsway Hill	Adult	Female
9 April	ST 15281 38114	Frog Hill	Adult	Female
16 April	ST 15746 36250	Great Hill	Adult	Female
16 April	ST 15680 36251	Great Hill	Adult	Female
22 April	ST 15331 36301	Great Hill	Adult	Female
24 April	ST 15448 38125	Wilmot's Pool	Adult	Female
25 April	ST 12167 40868	Beacon Hill	Adult	Female
6 May	ST 135 385	Thorncombe Hill	Adult	Male
3 June	ST 14982 36400	Great Hill	Adult	Female
3 June	ST 14965 36524	Great Hill	Adult	Male

sites: all are south-facing, on high ground (keeping them free from flooding) and have stands of mature Gorse (*Ulex europaeus/U.gallii*) and/or Heather (*Calluna vulgaris*) and Bell-heather (*Erica cinerea*), interspersed in some areas with rough grassland.

Thorncombe Hill eastward to Halsway Post is a recognised 'hotspot' for Adders and for this reason was used as a site for the training days. Although sightings during training days are not included in Table 1, seven Adders were seen in this area on the first training day (19 March), and a further three on the second training day (9 April). Additionally this site was visited on occasion by surveyors en route to other sites, resulting in a further three sightings, making it clearly an important site for this species on the Quantocks.

No less important is Great Hill, where five sightings were made during this survey. All occurred among isolated patches of gorse scrub within approximately 50m of the cairn on the summit.

In contrast, on Black Hill Palmer (2009) recorded only three male Adders (and no females) and concluded that this was a remnant sub-population from which most animals had dispersed following fires in 2004. The present survey located only a single male there and, once again, no females – suggesting that this population is still in a precarious state.

An interesting observation is the single sighting of an Adder on Beacon Hill. This site lies to the north of the areas covered by previous surveys, in an area from which there is only a single previous record, in 1983. Our survey also produced a second probable sighting in the same area (at ST 1257 4070), but

the record could not be validated and so has had to be omitted from the data presented in Table 1; it is possible that this sighting was of a small juvenile Adder.

A further observation that was omitted from Table 1 concerns an animal seen on Aisholt Common, the most southerly area covered by the present survey (ST 17 35 and ST 18 35), for which the grid reference was clearly erroneous. It does suggest, however, that despite a lack of recent records, Adders are present in this area and that further searches would be worthwhile.

DISCUSSION

The present survey aimed to determine the presence or absence of Adders within selected areas of the Quantock Hills AONB during the spring 'lying out' period, to record the gender and life-stage of the individuals located, and to gain a better understanding of which areas could support Adder hibernacula. In retrospect, there is much additional data that could usefully be collected in future surveys, but which was not collected on this occasion. For example, no record was kept of the effort expended per sighting, and no record was kept of the amount of time spent searching 'empty' 1km squares before deciding that it wasn't worth searching any further. Currently, it is unclear whether areas apparently devoid of Adders lacked them because there were none present, or because they were not thoroughly searched. Some surveyors did record habitat conditions within their survey areas and commented on their potential suitability for adders; and it was clear from this that ST 15 37, for example, was unlikely to support Adders. However, for many 1km squares that failed to yield sightings it is uncertain whether habitat conditions are sufficiently suitable to warrant their inclusion in future surveys.

All the areas surveyed were above an altitude of 300m, and no attempt was made to identify hibernacula at lower altitudes on the 'shoulders' of the hills, where the habitat consists of the corners of rough-grazing land, bracken-covered slopes and the edges of wooded coombes. It is assumed that habitats in these areas are likely to be 'sub-optimal' for Adders, but there is a possibility that they could support the species – as such, it would probably be worth including them in any future more wide-ranging surveys.

A useful side-effect of the present survey has been the way it has increased people's awareness of this

species on the Quantocks, and the importance of reporting their observations. A good example of this was a report submitted to RAGS in late July 2011, complete with photographs, of three Adders seen in woodland within the Deer Park at the northernmost point of the range at West Quantoxhead – at a time when Adders might be expected to be inhabiting their summer haunts. Adders are known to disperse up to 2km from their hibernacula (Prestt 1971), which would put the Deer Park within reach of animals potentially hibernating on, or in the vicinity of, Beacon Hill. Together with the sighting of an Adder on Beacon Hill during this survey, the possibility arises that there are other, as yet undiscovered, hibernacula in the north of the range, suggesting that further survey effort focussed on the area around Beacon Hill and West Quantoxhead would be worthwhile.

ACKNOWLEDGEMENTS

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Author contact



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