

**MARKSTAKES COMMON SNCI
REPTILE SURVEY FOR LEWES DISTRICT COUNCIL**

MARCH 2013



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1.0 Introduction

This study was commissioned by *Lewes District Council* to establish the distribution of reptiles at Markstakes Common SNCI near Chailey, West Sussex.

The study was conducted with the following aims in mind :

- To gain a better understanding of reptile distribution within the site.
- To make recommendations for suitable management of reptile habitats.
- To educate and inform volunteer surveyors about reptiles.

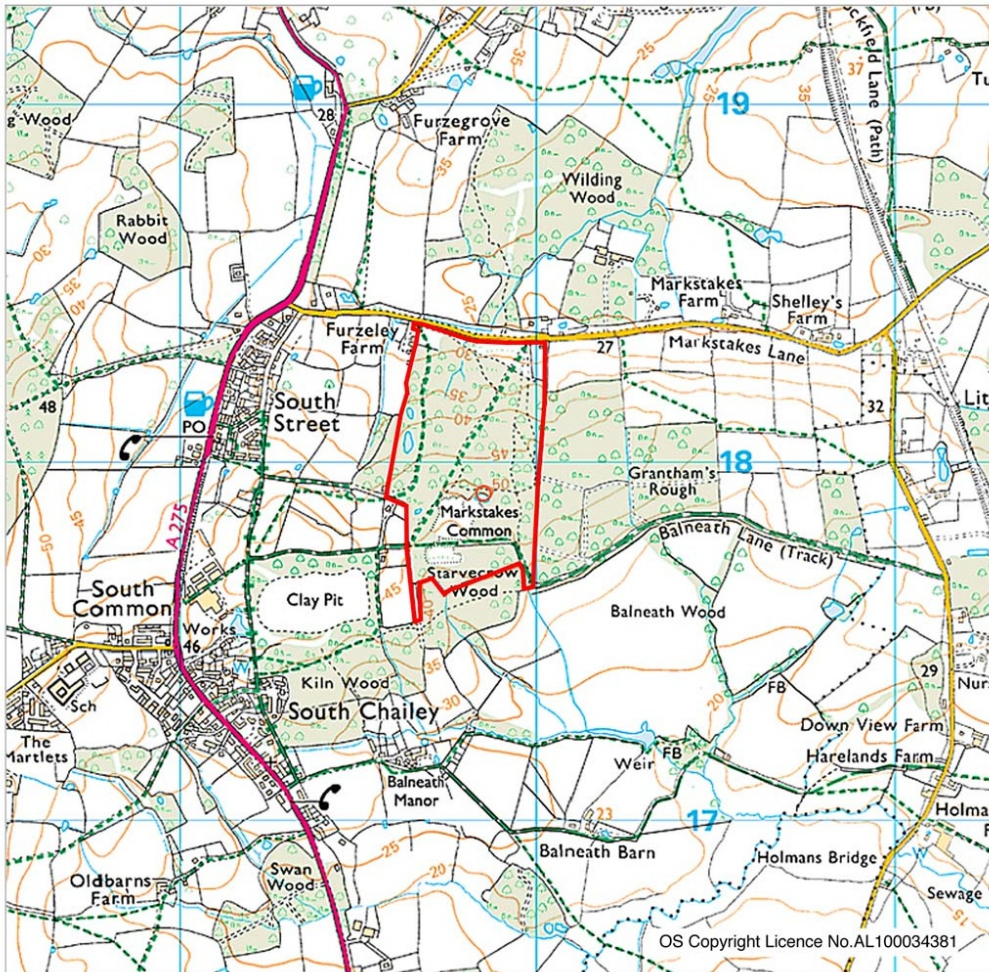


Figure 1 : Study site

2. Location and site description

Markstakes Common is located approximately 7Km north of Lewes and 0.5Km east of South Chailey. It is designated a Site of Nature Conservation Interest (SNCI). SNCI designation indicates that the site is of county level importance for wildlife.

Markstakes Common covers some 26 Ha and is classified as Semi Natural Ancient Woodland containing Oak (*Quercus robur*), Beech (*Fagus sylvatica*), Hornbeam (*Carpinus betulus*) and Holly (*Ilex aquifolium*).

A range of different habitats exist within Markstakes including ponds, mire, areas of remnant wood pasture, open glades with remnant heathland and areas of scrub. Bracken dominates many of the more open areas across the site.

The range of habitats within Markstakes provides very good habitat for reptiles.

3. Reptile species in the UK

There are six native reptile species in the UK – three lizards and three snakes. The Common lizard (*Zootoca vivipara*), Slow-worm (*Anguis fragilis*), Adder (*Vipera berus*) and Grass snake (*Natrix natrix*) are relatively widespread throughout England, whereas the Sand lizard (*Lacerta agilis*) and Smooth snake (*Corenella austriaca*) are much less common and have a very restricted distribution. Common lizards and Slow-worms occupy a wide range of habitats, including chalk grassland, rough grassland and bramble scrub, woodland glades, hedgerows, allotments, quarries and road and railway embankments. Grass snakes also occur in these habitats but are also associated with wetlands. Adders prefer lighter chalk or sandy soils, and are almost never found in habitats based solely on heavy clays. Favoured habitats for Adders include heathland, grassland with a dense sward and low scrub, including acid and chalk grasslands and glades, rides and edges in deciduous or coniferous woodland (ARC /Natural England, 2010 : *Reptile Habitat Management Handbook*).

Threats to reptile populations include loss of habitat and habitat fragmentation. Numbers of all reptile species have declined over recent decades.

4. Legal Protection of native reptiles

The Wildlife & Countryside Act 1981 protects all British reptiles against killing and injuring.

The Sand lizard and Smooth snake receive a higher level of protection under the Wildlife & Countryside Act and are also protected under the Conservation of Habitats & Species Regulations 2010 which is European legislation implemented in the UK as the Habitats Regulations. Neither the Sand lizard or Smooth snake are found in East Sussex.

In addition to the legislation protecting these species all six species of reptile are regarded as a conservation priority under Biodiversity 2020 via Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC) Act (formally UK BAP species).

5. Existing records

Three out of four of the 'common' reptiles species have previously been recorded on site (*Hall et al*), these being Adder, Common lizard and Grass snake.

There is a large amount of existing data on other fauna and flora within Markstakes Common.

All of the amphibian species native to Sussex have been recorded in Markstakes, these being Great crested newts, Palmate newts (*Lissotriton helveticus*) and Smooth newts (*Lissotriton vulgaris*) - recorded in High pond (*Pepper and Ross, 2010*). Common frog (*Rana temporaria*) and Common toad (*Bufo bufo*) have also been observed in the woodland (*Wood*).

A long term bird survey (*Woosley & Hall*) has revealed over 37 species including notable species such as Tree creeper (*Certhia familiaris*), European Turtle Dove (*Streptopelia turtur*), Dunnock (*Prunella modularis*), Spotted Flycatcher (*Muscicapa striata*), and Marsh Tit (*Poecile palustris*).

Mammals recorded on site include Hazel Dormouse (*Muscardinus avellanarius*), which are currently being surveyed as part of the Peoples Trust for Endangered Species (PTES) National Dormouse Monitoring Scheme. Other small mammals that have been observed include Field vole (*Microtus agrestis*), Wood mouse (*Apodemus sylvaticus*) and Yellow necked mouse (*Apodemus flavicollis*).

Bat species recorded include Pipistrelle (*Pipistrellus pipistrellus*), Brown long-eared (*Plecotus auritus*) (SXBRC 2008) and Bechstein's (*Myotis bechsteinii*) (Hutson. *A pers comm.*).

A number of Red Data Book invertebrate species, including several rare beetles and flies have been recorded (Hodge).

Aquatic invertebrates recorded on site (Wood & Pepper) include Broad-bodied chaser (*Libellula depress*), Large Red Damselfly (*Pyrrhosoma nymphula*) and Pea Mussels (*Pisidium sp.*).

Lichens recorded include *Carpinus betulus*, *Graphis elegans* and *Pertusaria sp.* (Sussex Lichen Recording Group).

It is understood that there are ongoing surveys for Fungi and Bryophytes

6. Reptile survey guidelines

The main source of information regarding guidelines for undertaking reptile surveys was published in 1999 by Froglife (Froglife Advice sheet 10 : *Reptile survey, an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*). These guidelines were originally written in an attempt to standardise reptile surveys undertaken by conservation volunteers. The Froglife guidelines are now widely seen by professionals as requiring updating.

In September 2011 Natural England (NE) produced updated guidelines for reptile survey and mitigation (Natural England, *Technical Information Note TIN102, Reptile mitigation guidelines*). Unfortunately these guidelines, although containing much useful guidance, were withdrawn almost immediately as they contained some guidance that was widely questioned.

A previous NE publication, *Reptiles : Guidelines for developers (2004)*, provides some basic guidance about reptile survey and mitigation.

Another source of information on undertaking reptile surveys is published by the Highways Agency (*Design for Roads and Bridges, Nature Conservation Advice in Relation to Reptiles and Roads - HA116/05, May 2005*). This publication is largely based on previous guidance by Froglife.

At the time of writing NE and Amphibian & Reptile Conservation Trust are preparing updated guidelines for European protected reptiles and the 'common' reptiles respectively.

Reptile activity is highly seasonal and weather dependent, meaning that there are limited windows of opportunity for survey work. The best time to look for reptiles is generally late spring (April-June) and again in September. Reptiles may be seen, with less certainty, from March to October depending on local conditions (English Nature ,2004 *Reptiles : guidelines for developers*).

Reptile survey involves the use of carefully placed artificial refugia (sheets of corrugated iron or roofing felt) which trap heat and provide a place where reptiles can warm up, either by laying on top of, or underneath the refugia. This method is used in combination with visual searches for reptiles whilst they are basking in open or partial cover, typically on warm slopes or banks, log or debris piles and along the interfaces between woodland or scrub and open grassland.

The Froglife guidelines advise that between 5 to 10 refugia are used per hectare. A minimum of seven survey visits should be undertaken during appropriate weather conditions to determine reptile presence or absence. Up to 20 visits may be required to obtain a population size estimate.

7. Survey area

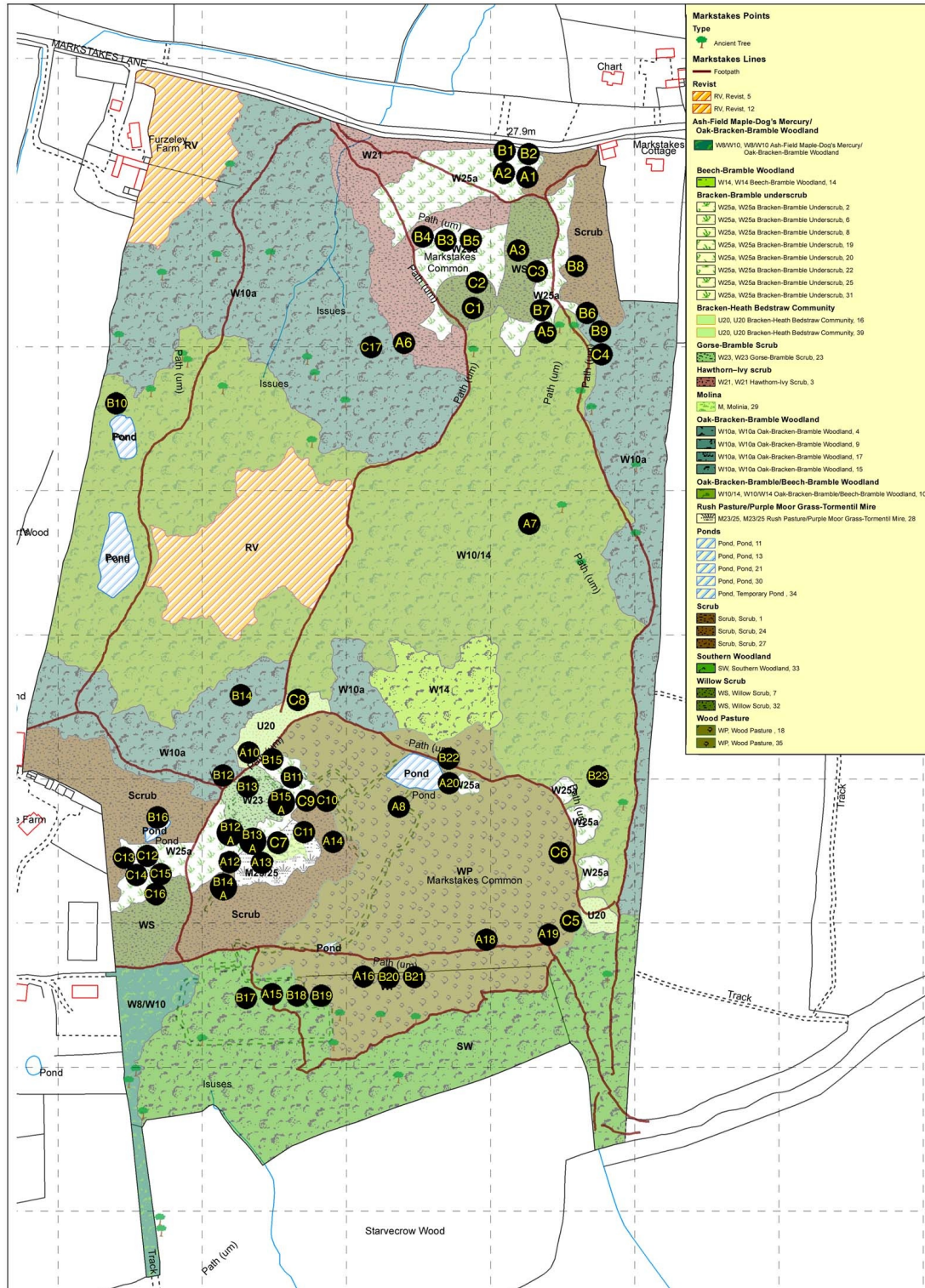


Figure 2 : Approximate location of refugia

A total of 43 refugia were distributed across the site in early March 2011. Areas were chosen where reptiles had been previously recorded in an earlier study by the Friends of Markstakes Common, in areas that provided potential reptile habitat or areas where some future habitat management may be required. As far as possible the refugia were located away from the most disturbed areas. A total of 28 visits were made between 29th March and 11th October 2011.

17 additional refugia sheets were laid in early March 2012 and a total of 25 visits were made between 27th March and 20th October 2012.

The density of refugia across the whole site could be interpreted as being quite low (ie, 2.3 per hectare), however since much of the denser woodland and larger open grassland areas are not considered to be optimal reptile habitat, the actual density would be in the region of 5 –10 refugia per hectare.

The bulk of the surveys were undertaken by Jon Wood, Rupert Hall and Thyone Outram. The numbers of reptiles observed was recorded on each occasion together with weather conditions (see results spreadsheet for full details).

8. Survey results (see results spreadsheet for full details)

All four reptile species were recorded within the site. A total of 551 individual reptiles were observed over 23 visits during 2011, an average of over 23 reptile encounters per visit.

A total of 924 individual reptiles were observed over 26 visits during 2012, an average of over 35 reptile encounters per visit.

The numbers of reptiles recorded was significantly higher in 2012. This was despite unseasonably poor weather throughout most of 2012. Conversely the poor weather may have actually aided reptile observations as they would have had to spend a larger proportion of their time basking in sub-optimal conditions. Surveyor experience was also increased by the second year. In addition surveyors knowledge of the specific areas used for basking had increased by 2012. 17 extra refugia were also used in 2012.

The peak count for reptiles observed occurred on 9th August 2012 when a total of 79 reptiles were recorded. Peak counts for each species were as follows :

- Adders – 6 individuals on 16th August 2011, (5 on 29th March 2012)
- Grass snakes – 29 individuals on 2nd August 2012
- Slow worms - 59 individuals on 9th August 2012
- Common lizard - 5 individuals on 2nd August 2012

9. Interpreting the results

At the time of writing the main guidelines for interpreting data gained from reptile surveys is set out in *Froglife Advice sheet 10* and by HGBI (*Evaluating local mitigation/translocation programmes : Maintaining best practice and lawful standards.1998*).

Froglife Advice sheet 10 details criteria used for assessing reptile populations based on the scoring system which forms the basis of the selection of SSSI for amphibians.

The Key Reptile Site criteria (below) is used to assess and compare reptile populations and can also be used for designation of non statutory sites such as SNCI's (Sites of Nature Conservation Interest).

	Low Population Score 1	Good Population Score 2	Exceptional Population Score 3
Adder	<5	5-10	>10
Grass snake	<5	5-10	>10
Common lizard	<5	5-20	>20
Slow worm	<5	5-20	>20

Table showing Key Reptile Site criteria

In Sussex there is no system for designation of SNCI's based on reptile populations alone. However a set of criteria for selection of reptile SNCI's in Kent and Surrey does exist.

Using this criteria, Markstakes supports an 'Exceptional' population of Slow worms and Grass snakes, and a "Good" population of Common lizard and Adder. This scores a total of 10 points.

To put this in perspective, Markstakes would qualify as an SNCI for its reptile population alone but would also qualify as a SSSI for reptiles since it scores 10 points.

10. Habitat management

A habitat management plan has been prepared for the site (*Lewes District Council, Markstakes Common Site Management Plan, Draft, 2011 – 2016*).

Markstakes is managed for both informal recreation and nature conservation by LDC contractors and volunteers (via Friends of Markstakes Common).

A number of BAP target species are present within the site and these are of particular relevance in respect of any proposed management of the site. This includes all reptile species, Dormouse (*Muscardinus avellanarius*), Great crested newt (*Triturus cristatus*) and Bechstein Bats (*Myotis bechsteinii*). The latter three species also have European Protected status which extends to their habitat (to a varying degree). Management of the habitat used by Great crested newts and Dormice is particularly relevant to any management regime.

BAP habitats within the site include areas of Lowland heath and Wood pasture.

Diverse mosaics of habitats are crucial to reptiles and although the site does contain a good mosaic of habitats some of the previously open habitats have succeeded into woodland or scrub.

The main management task is that of clearing/controlling bracken. LDC are currently investigating forms of bracken control since the use of Azulox will no longer be permitted.

In general the current management plans aims to :

- Restore heathland glades, and encourage heather colonisation .
- Maintain and improve the ancient semi-natural woodland in favourable conservation status
- Restore areas of wood pasture to the south of the site
- Restore the mire to a botanically rich, damp and open habitat
- Restore and manage High Pond (& other ponds).

All of these measures are to be encouraged as they will benefit reptiles but it is important to ensure that any clearance of bracken is kept to reasonably small parcels

of land , leaving plenty of adjacent areas of taller vegetation to provide cover for reptiles.

Wherever possible bracken clearance should seek to create numerous open areas interspersed with denser areas of cover rather than extensive open areas of short vegetation with a resultant lack of cover.

There is a tendency for cleared areas to be overgrazed by rabbits and/or deer so it would be worthwhile to extend the current use of cages (which have created some good reptile habitat) to establish whether it is practical to create bigger fenced off areas.

The bracken within the southern end of the site provides very good habitat for Adders in early/mid spring but becomes too shaded in the summer so some careful clearance to create sheltered glades out of public view would be beneficial. This task could be fairly easily undertaken by volunteers using hand tools once or twice a year. Pheasants are common in this area and since Pheasants will predate Adders and other reptiles it would be wise to monitor any affect this predation may have and adjust management accordingly.

Scrub with a varied structure and different ages is more valuable to wildlife than uniform stands, so any margins around cleared areas will need to be managed on rotation to maintain their value.

Cutting scallops within the vegetation along the path edges will also provide additional edge habitats .

Rotational management will help to create a more open, varied margin along the paths and will provide sunny bays that will attract basking reptiles and also encourage invertebrates.

This management needs to be carried out with care to avoid harming any reptiles or other fauna that will be attracted to these edge zones. The edge zones should be cut back in the winter months when there is least risk of harming fauna and when plants are dormant.

A maximum of 1/4 of the edge zones of each cleared area should be cut every 2 or 3 years. Cutting relatively short lengths of edge habitat at long intervals may also make it more practical to carry out this work with volunteers using hand tools.

Wherever possible any arisings should be retained on site to create habitat piles and hibernaculum for reptiles. These should be placed within sunny locations on the edge of woodland or scrub.

Any standing and fallen deadwood should be retained on site as it is a valuable wildlife resource.

10.1 Reptile hibernation areas

Reptiles will use various structures as hibernation sites including scrub covered banks (particularly south facing), rotting timber, small mammal and rabbit burrows, tree stumps or voids around root systems.

It is therefore important to avoid disturbance to hibernation areas whether as a result of scrub control or woodland management. Adder numbers in the UK are in serious decline and this is partly as a result of the destruction of their hibernaculum , often as a result of conservation work undertaken for other species (*Phelps, BBC Wildlife Magazine, March 2007*).

Further study should be undertaken to identify hibernation sites for Adders.

11. References

- Lewes District Council (2011) : *Markstakes Common Site Management Plan, Draft, 2011 – 2016*.
- English Nature (2004) *Reptiles : guidelines for developers*.
- Gent, T. & Howarth, W. : *Amphibians & Reptiles & the Law (1998). Herpetofauna Workers' Manual*.
- Froglife (1999) : *Reptile survey, an introduction to planning, conducting a interpreting surveys for snake & lizard conservation*.
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- ARC /Natural England (2010) : *Reptile Habitat Management Handbook*.
- Phelps : *BBC Wildlife Magazine, March 2007*