Technical Guidance Series

CIEEM Chartered Institute of Ecology and Environmental Management

In association with amphibian and reptile conservation

Competencies for Species Survey: Reptiles

www.cieem.net

1. Introduction

The purpose of this document is to set out the knowledge, skills and experience required to survey, disturb, handle or to carry out research works (hereinafter referred to generically as 'survey') in a professional capacity, for the following native reptile species of the British Isles:

- adder *Vipera berus*;
- common/viviparous lizard *Zootoca vivipara*;
- grass snake *Natrix natrix*;
- sand lizard *Lacerta agilis*;
- slow-worm *Anguis fragilis*; and
- smooth snake *Coronella austriaca*.

To be undertaking such work, CIEEM would consider attainment of the criteria outlined in this guidance to be a minimum for an individual to competently survey for reptiles. The Institute aims to drive up standards in the ecological profession for the benefit not only of ecologists but also of the public.

This document does not provide guidance on the techniques to be employed in carrying out survey activities: references to published sources of guidance on survey methods are listed in Section 5.

2. Status

All six native British and Irish reptile species are considered to have declined dramatically in the last century, largely due to loss, degradation and fragmentation of habitat. Four of these, (common lizard, slow-worm, grass snake and adder) always had widespread distributions and were present in a wider suite of habitats, but have undergone local, regional and national declines due to urbanisation, agricultural intensification, fragmentation, unsympathetic management and other reasons. The adder is possibly of most serious concern, with many field workers reporting year-on-year declines. Disturbance is often cited as a factor, but habitat loss, fragmentation and adverse management techniques such as controlled burning and heavy grazing and conversely habitat neglect are probably more problematic. Inbreeding problems have also been reported in this species abroad.

The two rarest species (sand lizard and smooth snake) already had very restricted distributions due to their reliance on heathland and dune habitats, but underwent drastic declines in the 20th century due to urbanisation, afforestation, agricultural intensification, quarrying, habitat fragmentation, unsympathetic management and possibly other unknown causes. Conservation efforts including reintroductions, habitat creation and restoration have probably reversed this trend over the last decade or so, but the patchy and localised distribution of both species leaves them vulnerable.

3. Legislation and Licensing

Legislation

Reptiles are protected under the following legislation. This outline of legislation is not comprehensive and the appropriate legislation should always be consulted for a definitive list of offences.

Smooth snake and sand lizard

COUNTRY	LEGISLATION GIVING PROTECTION	SCHEDULE OR
England	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended)	Schedule 2 Schedule 5
Wales	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended)	Schedule 2 Schedule 5

Adder, grass snake, slow worm and common lizard

COUNTRY	LEGISLATION GIVING PROTECTION	SCHEDULE OR
England	Wildlife and Countryside Act 1981 (as amended)	Schedules 5
Wales	Wildlife and Countryside Act 1981 (as amended)	Schedules 5
Scotland	Wildlife and Countryside Act 1981 (as amended) ***all except grass snake***	Schedule 5
Northern Ireland	Wildlife (Northern Ireland) Order 1985 ***common lizard only***	Schedules 5, 6 & 7
Republic of Ireland	Wildlife Act 1976 (as amended by Wildlife Act 1976 (Protection of Wild Animals) Regulations 1980) ***common lizard only***	Schedule 5

Licensing

The following Statutory Nature Conservation Organisations (SNCOs) are responsible for issuing licences to permit actions that would otherwise be illegal under the relevant legislation:

COUNTRY	SNCO
England	Natural England
Wales	Natural Resources Wales
Scotland	Scottish Natural Heritage
Northern Ireland	Northern Ireland Environment Agency
Republic of Ireland	National Parks & Wildlife Service

A *survey licence is required:* to survey for sand lizard and smooth snake in England, Scotland and Wales, where disturbance is prohibited by legislation. In the event that a smooth snake or sand lizard is encountered, an unlicensed surveyor must withdraw immediately, unless they are in the presence of a surveyor with an appropriate licence. In Northern Ireland, a licence is required to survey for common lizards and in the Republic of Ireland, an individual intending to survey for common lizards will need a licence if capture, handling, marking or photography is involved.

A *survey licence is <u>not</u> required*: : to survey for common lizards, slow-worms, grass snakes and adders in England, Scotland and Wales, or to survey for sand lizard or smooth snake using methods that do not result in offences (*e.g.* assessing smooth snake habitat quality).

It is the role of the appropriate licensing authority to define the criteria for issuing such licences as may be required for survey work, therefore, attainment of the skills set out is no guarantee that a licence will be obtained; other criteria will need to be considered.

4. Knowledge, Skills and Experience

To independently and competently undertake survey of reptiles in Britain and Ireland, an individual would be expected to possess the following knowledge, skills and experience.

A surveyor needs to recognise their level of attainment along a continuum. Those without the breadth and depth of the knowledge, skills and experience that CIEEM consider a minimum, should always work with, or seek advice from, an adequately experienced individual.

Knowledge

Individuals should have a knowledge and understanding of:

a. conservation status;
b. distribution;
c. threats to populations, species range and species survival;
d. ecology, breeding biology and behaviour of reptiles (including differences between species);
e. known ecological requirements;
f. legal protection;
g. licensing and permissions;
h. appropriate survey seasons;
i. current relevant guidance on survey methods and standards;
j. survey methods used to survey for reptiles and the strengths, weaknesses and limitations of these methods;
k. range of factors that might lead to bias in the survey results, and false negatives;
l. factors affecting surveying (*e.g.* current/previous weather, time of day, time of
m. year, habitat characteristics, geographical location);
n. sources of information on known occurrence and distribution (including NBN Gateway, national surveys, county atlases, local biological/environmental records and local contacts/Amphibian and Reptile Groups);
o. metadata standards / data sharing; and
p. health and safety issues commonly associated with surveying for reptiles (*e.g.* adder bites and ticks).

Skills

Individuals should have skills and experience enabling them to:

a. identify reptile species and differentiate between similar looking species (i.e. between common lizard and sand lizard, or between slow-worm, smooth snake, grass snake and adder);
b. identify reptile field signs (*e.g.* sloughs, burrows, eggs);
c. assess habitat potential for reptiles, spotting 'foci' within habitats (*e.g.* edges/ecotones, ridges, hummocks, sunny slopes, brash heaps);
d. determine appropriate spatial scoping for fieldwork;
e. plan and implement sound scientific surveys, selecting appropriate survey techniques for any particular situation (*e.g.* visual search, artificial refugia, or both);
f. select appropriate survey conditions instinctively (current/previous weather, time of day, time of year), using knowledge and experience, and know when to cease surveying as a result of changing conditions;

g. detect reptiles using visual search ('spotting' skills, fieldcraft, identifying and sexing reptiles quickly and remotely, minimising disturbance);
h. record reptile sightings, photograph, take notes, record weather conditions and visit parameters;
i. analyse and interpret survey data;
j. take appropriate biosecurity precautions; and
k. take appropriate health and safety precautions.

If artificial refugia are used to survey, individuals should also be able to:

a. make use of existing refugia and manmade basking places for detecting reptiles (discarded metal, wood, brash, litter, paths-edges, fence-posts);
b. deploy and monitor refugia effectively (suitable materials and sizes, deployment densities, 'bedding-in' period, locations, security, risks); and
c. detect reptiles using artificial refugia (appropriate timing, safe lifting and replacement, hand capture, welfare).

If reptiles are to be handled, individuals should have skills and experience enabling them to:

a. legally and humanely handle live reptiles;
b. effectively record biometric data from live reptiles; and
c. legally and humanely mark certain reptiles (if using this technique).

Practical Experience

Most or all of the knowledge and skills set out in this guidance can theoretically be gained from extensive personal field study, but vocational training and structured education are also useful. Short training courses (e.g. one day), with both classroom and field elements, are recommended to give a concise grounding in the key skills and areas of knowledge required. The field element is particularly useful to give trainees direct experience of seeing reptiles in their natural habitat, using appropriate survey techniques, and appreciating the difficulties of detection.

Reptile surveyors, in particular individuals planning to survey for reptiles for professional purposes, and where they are providing advice in a commercial capacity, should have gained some practical experience under the direct supervision of an experienced surveyor. The practical experience required for each species will vary but should ideally comprise of:

a. at least 20 hours of search time, in suitable conditions, at sites with the target species present, using both visual search and artificial refugia; and

b. at least 10 separate survey sessions at a range of sites with the target species present, ideally in a range of conditions.

5. Reading

The following references are essential reading for those wishing to gain the necessary knowledge, skills and experience to survey for reptiles.

Bennett D (1999) *Expedition Field Techniques: Reptiles and Amphibians*. Expedition Advisory Centre, Royal Geographical Society, London.

Blomberg S and Shine R (2006) *Reptiles* in: Sutherland WJ (ed) *Ecological census techniques 2nd Edition*. Cambridge University Press, Cambridge.

Edgar P, Foster J and Baker J (2010) *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

Foster J and Gent T (eds) (1996) *Reptile survey methods: proceedings of a seminar held on 7 November 1995 at the Zoological Society of London's meeting rooms, Regent's Park, London*. English Nature Science Series, 27.

Froglife (1999) *Froglife Advice Sheet 10: reptile survey*. Froglife, Halesworth.

Gent T and Gibson S (2003) *Herpetofauna Workers Manual*. JNCC, Peterborough.

Herpetofauna Groups of Britain and Ireland (1998) *Evaluating local mitigation/translocation programmes: maintaining best practice and lawful standards*. HGBI advisory notes for amphibian and reptile groups. HGBI c/o Froglife, Halesworth. (Unpublished).

Highways Agency (2005) *Reptile survey methods* in: *Design Manual for Roads and Bridges, Volume 10*, 19-27. Department for Transport, London.

Inns H (2009) *Britain's Reptiles and Amphibians*. Wild Guides, Old Basing.

Joint Nature Conservation Committee (2004) *Common Standards Monitoring Guidance for Reptiles and Amphibians, Version February 2004*. JNCC, Peterborough.

Latham DM, Jones E and Fasham M (2005) *Reptiles* in: *Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring*, 403-411. Cambridge University Press, Cambridge.

Web based advice and resources for reptile survey can be found at:

- www.narrs.org.uk/nrspack.htm
- www.arc-trust.org

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