Technical Guidance Series

CIEEM Chartered Institute of Ecology and Environmental Management

In association with amphibian and reptile conservation

Competencies for Species Survey: Great Crested Newt

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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') for the great crested newt *Triturus cristatus* in a professional capacity. 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 great crested newts. 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. A training log book with example entries is provided in Section 7.

2. Status

The great crested newt has experienced declines throughout its European range during the latter part of the 20th century due primarily to agricultural intensification and the consequent loss, degradation and fragmentation of habitat. Other factors negatively affecting the species include the introduction of fish to great crested newt breeding ponds, inappropriate habitat management and habitat loss due to urbanisation.

Great crested newts remain widespread throughout England and Wales, with more localised populations in Scotland. It is estimated that there are about 75,000 populations in the UK, with a continuing decline of less than 5% between 1994 and 2006 (JNCC 2007). They are absent from both Northern Ireland and the Republic of Ireland.

3. Legislation and Licensing

Legislation

Great crested newts 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.

COUNTRY	LEGISLATION GIVING PROTECTION	SCHEDULE OR ANNEX LISTING
England	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended)	Schedule 2 Schedules 5
Wales	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended)	Schedule 2 Schedules 5
Scotland	Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)	Schedule 2

Licensing

The following Statutory Nature Conservation Organisations (SNCOs) are responsible for issuing survey 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

A *survey licence is required:* for any survey work using the standard techniques (English Nature 2001) at any site where there is a reasonable likelihood that great crested newts are present. This includes netting, bottle trapping, torch counts, egg searching, searching under terrestrial refugia (whether pre-existing or placed out specifically for the purpose) and the use of pitfall traps or drift fences. Under certain circumstances, the photography of great crested newts may also be a licensable activity.

A *survey licence is not needed*: for habitat appraisal, such as collecting data for a Habitat Suitability Index (HSI) calculation, or for other general aquatic ecological survey purposes (*e.g.* invertebrate community sampling or macrophyte surveys) where amphibians are not the specific target and where, based upon an assessment of habitat suitability and known range *etc*, there is no realistic expectation that great crested newts are present, or where the techniques used are unlikely to disturb great crested newts.

In the event that a great crested newt is encountered *e.g.* when undertaking a general aquatic survey, an unlicensed surveyor must cease survey work, unless they are in the presence of a surveyor with an appropriate licence.

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 surveys for great crested newts an individual would normally 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. newt ecology, breeding biology and behaviour;
e. the ecology of ponds, insofar as this affects great crested newts;
f. known ecological requirements;
g. legal protection;
h. licensing and permissions;
i. suitable weather conditions and appropriate (and peak) survey season (note that this may vary from region to region, and from year to year) and weather conditions;
j. habitat assessments using HSI and its limitations;
k. current relevant guidance on survey methods and standards (*e.g.* English Nature, 2001);
l. main survey methods used to survey for great crested newts (netting, bottle trapping, torch counts and egg search) and the strengths, weaknesses and limitations of these methods;
m. range of factors that might lead to bias in the survey results, and false negatives;
n. factors affecting surveying (*e.g.* temperature/weather conditions);
o. biosecurity precautions and procedures;
p. procedures for reporting any accidental deaths or injury of great crested newts during surveys;
q. sources of information on known occurrence and distribution of newts (including NBN Gateway, local biological/environmental records and local contacts/Amphibian and Reptile Group);
r. metadata standards / data sharing; and
s. health and safety issues commonly associated with newt surveying.

Skills

Individuals should have the skills and experience enabling them to:

a. identify great crested newts including juveniles, larvae and eggs (including the identification, determination of age class and sex of adults under torch survey conditions);
b. identify palmate and smooth newts, as well as introduced species such as the alpine newt which may occasionally be encountered;
c. assess habitat potential for great crested newts and calculate a HSI score for the water bodies to be surveyed (where appropriate);
d. determine the geographical scope of the survey, taking into account the survey requirements and the landscape within the survey area;
e. plan and implement sound scientific surveys, including determining which survey techniques are appropriate to use for a given water body;
f. identify whether temperature and weather conditions are suitable for the survey;
g. interpret and analyse survey data (*e.g.* in terms of the ecological factors/processes likely to be affecting the distribution and abundance of great crested newts and other amphibians on survey site);
h. undertake a population size class estimate (small, medium, large);
i. take appropriate health and safety precautions; and
j. undertake appropriate biosecurity precautions and procedures, preparing biosecurity risk assessments.

If using nets or bottle traps, individuals should (where relevant) also be able to:

a. effectively search ponds for amphibians using nets;
b. deploy and recover bottle traps and egg strips safely and in a manner that will not pose a risk to any great crested newts (or any other species) captured;
c. safely handle amphibians, ensuring their welfare;
d. photograph newts for identification purposes where this is deemed necessary; and
e. undertake procedure for reviving any amphibians which may have become accidentally distressed during surveys (*e.g.* from heat stress, asphyxiation), and to avoid any repetition.

Practical Experience

Whilst some of the knowledge and skills set out in this guidance can effectively be gained from personal study, vocational training and structured education, applicants for great crested newt survey licences would also normally

be expected to have gained practical experience, under the direct supervision of an experience licensed great crested newt surveyor, through:

a. calculation of *at least* 20 HSI scores for individual water bodies at a minimum of 10 different sites. Ideally a variety of different types of water bodies should be assessed giving experience of how each individual index-factor in the HSI affects the overall score;

b. survey of *at least* 20 different water bodies at a minimum 10 different sites, under supervision of a great crested newt licence holder. Each survey should comply with relevant survey advice in that each water body should be surveyed using three different survey techniques at each visit, including bottle trapping and torch counts, wherever these are appropriate. Great crested newts should be found within at least half of the surveyed water bodies or sites; and

c. whilst under supervision, the applicant should personally undertake the setting out, retrieval, emptying and re-setting of bottle traps, as well as physical handling, identification, sexing, ageing and release of captures.

This experience should be fully recorded and documented in a portfolio which can be presented to the statutory authorities when a licence is applied for.

5. Reading

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

Amphibian and Reptile Groups of the United Kingdom (2008) *ARG UK Advice Note 4: Amphibian disease precautions: A guide for fieldworkers*. Unpublished. www.arguk.org/index.php?option=com_docman&task=doc_download&gid=8&Itemid=17

Amphibian and Reptile Groups of the United Kingdom (2010) ARG UK Advice Note 5: *Great Crested Newt Habitat Suitability Index*. Unpublished. www.arguk.org/index.php?option=com_docman&task=doc_download&gid=9&Itemid=17

English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough. Under revision.

Gent A and Gibson S (eds) (1998) *Herpetofauna Workers Manual*. Joint Nature Conservation Committee, Peterborough. (out of print but available at www.jncc.gov.uk/page-3325)

Gent A and Bray R (eds) (2001) *Conservation and Management of Great Crested Newts*. English Nature, Peterborough.

Jehle R, Thiesmeir B and Foster J (2011) *The Crested Newt, A dwindling pond-dweller.* Laurenti – Verlag, Bielefeld, Germany.

Joint Nature Conservation Committee (2007) *Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006*. JNCC, Peterborough.

Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

National Amphibian and Reptile Recording Scheme. *Great Crested Newt Habitat Suitability Index.* www.narrs.org.uk/Documents/nasdocuments/HSI_guidance.pdf

Oldham RS, Keeble J, Swan MJS and Jeffcote M (2000) Evaluating the suitability of habitat for the great crested newt *(Triturus cristatus)*. *Herpetological Journal*. **10**: 143-155.

6. Acknowledgements

This guidance has been produced by Liam Russell, David Clements, Mick Green, Dorian Latham and Richard Sands and Tony Gent, John Wilkinson and Dorothy Wright of Amphibian and Reptile Conservation on behalf of the Chartered Institute of Ecology and Environmental Management with the support of the Professional Standards Committee.

Cover photographs (left to right) taken by: David Clements, David Clements and Chris Gleed-Owen.

Name	A. Trainee					Licensing authority									
Address						Area office									
Email						Authority contact									
Date	Site	County	Waterbody	HSI score	Survey methods used (including no. of bottle traps)	Great crested newts present	Eggs found	Total adults	Juveniles /larvae present	Other amphibians present (sp. name)	Notes	Name of licence holder	Licence ref.	Licence holder present	Training given or practise only
24/04/2010	North Farm	Sussex	Pond 1	0.79	Torch, bottle trap (40), egg search	Yes	Yes	22	No	L. vulgaris L. helveticus R. temporaria		A. Mentor	xxx	yes	training in HSI calculation, setting traps and newt identification
			Pond 2	0.65	Torch, bottle trap (20), egg search	Yes	Yes	0	No	L. helveticus R. temporaria		A. Mentor	xxx	yes	
			Pond 3 (Farm pond)	0.40	Torch, bottle trap (60), egg search	No	No	0	No	L. helveticus B. bufo		A. Mentor	xxx	yes	
06/05/2010	Markway	Hampshire	Village pond	0.82	Torch, bottle trap (60), egg search	Yes	Yes	78	No	L. vulgaris L. helveticus R. temporaria B. bufo		A. Mentor	xxx	yes	Training in setting traps and newt identification
06/06/2010	North Farm	Sussex	Pond 1	0.79	Torch, bottle trap (40), egg search	Yes		9	Larvae	L. vulgaris L. helveticus		A. Mentor	xxx	yes	practice
			Pond 2	0.65	Torch, bottle trap (20), egg search	Yes	Yes	1	juvenile	L. helveticus R. temporaria		A. Mentor	xxx	yes	practice
			Pond 3 (Farm pond)	0.40	Torch, bottle trap (60), egg search	No	No	0	No	No		A. Mentor	xxx	yes	practice
Cumulative total								110							

Name								Licensing authority												
Address								Area office												
Email								Authority contact												
Date	Site	County	Waterbody	HSI score	Survey methods used (including no. of bottle traps)	Great crested newts present	Eggs found	Total adults	Juveniles /larvae present	Other amphibians present (sp. name)	Notes	Name of licence holder	Licence ref.	Licence holder present	Training given or practise only					
Cumulative total																				

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