

Technical Guidance Series



Chartered
Institute of
Ecology and
Environmental
Management

Competencies for Species Survey: White-clawed Crayfish



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1. Introduction

The purpose of this document is to set out the knowledge, skills and experience required to survey, disturb or to carry out research works (hereinafter referred to generically as 'survey') for the white clawed crayfish *Austropotamobius pallipes* 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 white-clawed crayfish. 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

White-clawed crayfish are classified as Endangered in the IUCN Red List of Endangered Species and their populations are declining throughout much of their range with predictions that the species will face extinction in much of their former range within the next few decades. White-clawed crayfish populations are under threat in Britain and Ireland from a fungal disease, crayfish plague *Aphanomyces astaci*, carried by a number of introduced North American species of crayfish, and competition from alien crayfish populations.

3. Legislation and Licensing

Legislation

White-clawed crayfish 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
<i>England</i>	Wildlife and Countryside Act 1981 (as amended)	Schedule 5
<i>Wales</i>	Wildlife and Countryside Act 1981 (as amended)	Schedule 5
<i>Scotland</i>	Wildlife and Countryside Act 1981 (as amended)	Schedule 5 (partial)
<i>Northern Ireland</i>	Wildlife (Northern Ireland) Order 1985 (as amended by the Wildlife and Natural Environment Act (Northern Ireland) 2011)	Schedules 5,6 & 7
<i>Republic of Ireland</i>	European Communities (Natural Habitats) Regulations 1997 (as amended) Wildlife Act 1976 (as amended by the Wildlife Act 1976 (Protection of Wild Animals) Regulations 1990)	First schedule 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	N/A
Republic of Ireland	National Parks & Wildlife Service

A licence is required: at sites where, based upon readily available native/non-native species records in the sub-catchment, and water quality information, there is a realistic expectation that white-clawed crayfish might (still) be present and these will be caught and handled.

In England and Wales, Environment Agency consent is required for the setting of any traps of any design to catch native or non-native crayfish.

A licence is not required: for habitat appraisal or general ecological survey purposes (e.g. macro-invertebrate community sampling), where white-clawed crayfish are not the specific target and where, based upon readily available native/non-native species records in the sub-catchment, and water quality information, there is considered to be no realistic expectation that white-clawed crayfish are present.

In the event that white-clawed crayfish are unexpectedly encountered during such surveys, this should be reported to the relevant country authority, and the need for a survey licence should also then be reassessed.

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 involving white-clawed crayfish, an individual would be expected to possess all of 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:

- conservation status;
- distribution;
- threats to populations, species range and species survival (including disease);
- crayfish ecology, breeding biology and behaviour (including an understanding of the seasonal/extreme range of crayfish habitat variability);
- freshwater ecology;
- known ecological requirements;
- legal protection;
- licensing and permissions;
- main survey season (July to September);
- current relevant guidance on survey methods and standards;
- main survey methods used to survey for crayfish (including manual search, night viewing and trapping) and the strengths, weaknesses and limitations of these methods;
- range of factors that might lead to bias in the survey results, and false negatives;
- sources of information on known occurrence and distribution of white-clawed crayfish (including NBN Gateway, national surveys, local biological/environmental records and local contacts/species groups);
- metadata standards / data sharing; and
- health and safety issues associated with surveying for crayfish.

Skills

Individuals should have skills and experience enabling them to:

- identify white-clawed crayfish (>10mm carapace length);
- identify signal crayfish (>10mm carapace length);
- identify features of narrow-clawed, spiny cheek, red swamp, virile, noble and marbled crayfish;
- appropriately appraise habitat for crayfish;
- appropriately scope fieldwork, normally at sub-catchment level;
- plan and implement sound scientific surveys;
- photograph crayfish for identification purposes;
- safely and humanely handle crayfish and take biometric recordings;
- interpret and analyse survey data;
- take appropriate biosecurity precautions; and
- take appropriate health and safety precautions.

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 survey licences would also be expected to have gained practical experience, under the direct supervision of a licensed white-clawed crayfish surveyor, including:

- at least 20 hours supervised manual search time in suitable flow conditions at sites with crayfish, at least 10 hours of which should be at sites with white-clawed crayfish. In addition to this active survey time, applicants should also gain supervised experience in the processing of catches, destruction of non-natives, and recognition of surrogate signs (including burrows, sloughs, remains in droppings and spraints, and the collection of anecdotal records); and
- at least 5 supervised trapping sessions at sites with crayfish (if the applicant wishes to be licensed for trapping), at least three of which should be at sites with white-clawed crayfish. A cumulative total of at least 100 trap-nights should normally be expected.

Individuals surveying for white-clawed crayfish would also preferably have experience of at least one session of night-viewing for crayfish of any species.

5. Reading

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

AERC (1998) *Surveys of the Distribution of Freshwater Crayfish (Austropotamobius Pallipes) In Northern Ireland*. Environment and Heritage Service, Belfast.

Peay S (2003) *Monitoring the White-clawed crayfish Austropotamobius pallipes*. Conserving Natura 2000 Rivers Monitoring Series No 1. English Nature, Peterborough.

Latest guidance on crayfish is available from the UK crayfish website, professional channel, hosted by Buglife. Access via www.crayfish.org.uk or the link below.

www.buglife.org.uk/conservation/currentprojects/Species+Action/UK+Crayfish+Website

6. Acknowledgements

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Cover photographs (left to right) taken by: Stephanie Peay, Nick Mott and Nick Mott.

7. Sample Log Book

Name	A. Trainee					Licensing authority									
Address						Area office									
Email						Authority contact									
Date	County	Catchment	Waterbody	Survey type/work	Details of survey method	Hours manual	Hours night view	Hours trapping	No. trap/ nights	White-claws present	Non-natives present (sp. name)	Name of licence holder	Licence ref.	Licence holder present	Training given or practise practise only
24/07/2010	West Yorkshire	Aire	Coppice Pond	Trapping, setting	30 traps, 2 types 15 Fladen, 15 GB Nets			1.5	30			A. Mentor	xxx	yes	training in setting traps
25/07/2010	West Yorkshire	Aire	Coppice Pond	Trapping, lifting				2.5		yes	no	A. Mentor	xxx	yes	training in recording crayfish
01/08/2010	North Yorkshire	Ribble	Bookill Gill Beck	Manual	standardised manual survey, 5 patches 10 stones; 2 sites	3			0	yes	A.p.	A. Mentor	xxx	yes	training demonstration of method, plus supervision of practice
06/08/2010	West Yorkshire	Aire	Meanwood Beck	Night-viewing	night-viewing and catch in 100 m site		1.5		0	yes	no	A. Mentor	xxx	yes	training demonstration of night-viewing, crayfish behaviour and practise on site
21/08/2010	North Yorkshire	Ribble	Bookill Gill Beck	Trapping, setting	60 traps, 3 types GB nets, LINi, Tetra			3	60			A. Mentor	xxx	yes	practise session
22/08/2010	North Yorkshire	Ribble	Bookill Gill Beck	Trapping, lifting				5				A. Mentor	xxx	yes	practise session
15/09/2010	North Yorkshire	Ribble	Bookill Gill Beck	Manual	dewatering and intensive manual removal	5				yes	yes	A. Mentor	xxx	yes	briefing and practise session
Cumulative total						8	1.5	12	90						

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