



## 23 White-clawed Crayfish species action plan

### 23.1 Introduction

The native crayfish *Austropotamobius pallipes* occupies a wide range of habitats including streams, rivers, lakes, reservoirs and water-filled quarries. It prefers calcium-rich rivers and streams with a good water quality and not too much sediment. Shelter such as that provided by rocks/stones, water plants and tree roots, or a bank into which it can burrow, are important for its survival. The species feeds on a wide variety of vegetable and animal matter and in turn is eaten by many fish, birds, rats, Mink, and Otter. The young also fall victim to predatory insect larvae such as those of dragonflies and beetles.

As a species, which prefers calcium rich watercourses, it has traditionally occupied most of the watercourses of the county. However, it has declined rapidly, largely due to the importation of Crayfish Plague with non-native crayfish species. The species is also sensitive to biocides and other pollutants, particularly those lowering the oxygen content of the water, and these may have contributed to the decline.

The White-clawed Crayfish is a species, which is familiar to many members of the public, as it is comparatively easily found and identified, robust, and has a fair level of 'wildlife star quality' especially for a freshwater invertebrate. This makes the species an appropriate focus for raising public awareness and involvement through surveys and interpretation, which will greatly benefit the cause of conserving the county's rivers together with the species itself.

As the first county in the UK to record an outbreak of the Crayfish Plague and an area where complexes of once wildlife rich chalk rivers (a priority habitat in the European Union Habitats Directive) are extensive but degraded, Hertfordshire has a significant role to play in the fate of the White-clawed Crayfish.

### 23.2 Current status

The only freshwater crayfish native to the UK this species is widespread but scarce and declining in clean calcareous streams, rivers and lakes in England and Wales. Since the 1970s many local populations have been lost.

This species was formerly widespread in France, Spain and Italy but populations are now confined to a diminishing number of areas. It is classed as globally threatened by International Union for Conservation of Nature and Natural Resources/World Conservation Monitoring Centre and listed in Appendix III of the Bern Convention and annexes II and V of the EC Habitats Directive. Annex II lists species of community interest whose conservation requires the designation of Special Areas of Conservation. It is protected under Schedule 5 of the Wildlife and Countryside Act 1981 (WCA) in respect of taking from the wild and sale.

In Hertfordshire records suggest that the native crayfish was common throughout most waters. Today it seems that confirmed populations are restricted to parts of the Colne catchment, the Mimram and the Ver near Radlett.

### 23.3 Current factors causing loss or decline

#### 23.3.1 Crayfish Plague

This is a fungal disease caused by *Aphanomyces astaci*. The spores are particularly virulent and were first brought into the country by the introduced North American Signal Crayfish *Pacifastacus leniusculus*, which carries them but appears to be immune to the plague. The fungal spores can also be transmitted in water, mud, dirty fishing nets, fish scales, and through infected individuals or carcasses moved by mammals

or birds. However, if crayfish have been absent from a stretch of river, the disease is likely to die out as crayfish are the only host.

The first recorded outbreak of the Crayfish Plague in Britain occurred in the River Lea at Ware in 1981. It quickly spread to the tributaries of the Lea including the Ash, Rib, Beane, Stort and Mimram. Crayfish Plague has caused widespread extinctions from rivers and other watercourses including still waters throughout the County and the rest of the UK.

### **23.3.2 Direct competition for food and habitat**

Competition from non-native crayfish is a major threat. There are three species of non-native crayfish breeding in the wild in the UK. In Hertfordshire the major threat comes from the North American Signal Crayfish, an aggressive and dominant species which carries Crayfish Plague without suffering ill effects and prefers the same habitat as that of the native White-clawed Crayfish. The other species present in Hertfordshire is the Narrow-clawed (Turkish) Crayfish *Astacus leptodactylus* which is rare in the county.

### **23.3.3 Water quantity and quality**

Low flows caused by over-abstraction and drought result in poorer quality water and the build up of suspended solids and silts. This alters the riverbed, making it unsuitable for the crayfish and also reduces the amount of oxygen in the water, decreasing overall habitat quality.

### **23.3.4 Deliberate release of non-native crayfish**

There is a potential black-market in the release of non-native crayfish into still waters and some rivers and the later harvesting of the resulting population. There is some evidence of this sort of activity having occurred in Hertfordshire. This threat could include release of all four introduced species, including the North American Signal Crayfish, Turkish Crayfish, Noble Crayfish *Astacus astacus* and Red Swamp Crayfish *Procambarus clarkii*.

### **23.3.5 Other dangers**

The use of Crayfish as livebait by anglers or for consumption by the local community, though not being

major causes of decline can be significant threats at particular locations, especially where a colony of native crayfish is vulnerable.

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## **23.4 Current action**

The Environment Agency (EA) has commissioned Nottingham University to research the effects of non-native crayfish on freshwater ecosystems and to formulate a strategy into the future conservation management of the native species.

The three species of non-native crayfish established in the wild are listed in Schedule 9 of the WCA which makes it an offence to release or allow them to escape into the wild. The Red Swamp Crayfish will also be added to the schedule if it is found to breed.

The Ministry of Agriculture Fisheries and Food (MAFF) have introduced the 'Import of Live Fish Through Prohibition of Keeping of Live Fish (Crayfish) Order 1996', which allows the establishment of no-go zones, but also removes the prohibition on keeping Signal Crayfish within certain areas designated by postcode, in an attempt to protect native crayfish and habitats in England and Wales.

The EA Thames Region is running a project, undertaken by the Institute of Freshwater Ecology, examining the effect of fishing crayfish from waterbodies on the crayfish population and the ecology of the waterbody.

The EA have published a leaflet describing the identification of the different crayfish species.

English Nature is running a project to determine the extent of trapping of wild living North American Crayfish.

### 23.5 White-clawed Crayfish action plan objectives

To ascertain the distribution of the White-clawed Crayfish in Hertfordshire.

To halt the decline of the White-clawed Crayfish in the county within 10 years.

To restore the White-clawed Crayfish to all suitable open water habitats within 50 years.

To enhance river habitat quality through a programme of river enhancement schemes with at least three schemes completed annually for the next 10 years (to overlap with Water Vole and Otter Action Plans, Chapters 11 and 14).

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### 23.6 Proposed actions

#### 23.6.1 Policy and legislation

**WC1.** Strengthen regulations regarding the farming, sale and introduction of non-native crayfish, by 2000.

**Action:** [EA](#).

**WC2.** Create 'no-go' areas for the keeping of non-native crayfish (as outlined in the National Species Action Plan for the White-clawed Crayfish) in the Hertfordshire river catchments, by 2000.

**Action:** [EA](#).

**WC3.** Investigate the use of control measures such as byelaws or regulations to restrict the spread of crayfish plague by movement of angling equipment between waters, particularly at key sites, by 2002.

**Action:** [EA](#).

#### 23.6.2 Site safeguard and management

**WC4.** Identify and protect White-clawed Crayfish Wildlife Sites in LEAPs and Local Plans at the next review.

**Action:** [EA](#), [LA's](#), [HMWT](#), [HBRC](#).

**WC5.** Implement at least one enhancement scheme specific to White-clawed Crayfish each year for the

next 10 years to restore suitable habitat for native crayfish, targeted initially to currently occupied rivers.

**Action:** [EA](#).

**WC6.** Encourage sympathetic land management, such as the establishment of 10 m riparian buffer zones along all rivers to reduce the levels of sediment and pollutants entering watercourses. Aim for 100km over the next five years.

**Action:** [EA](#), [TWU](#), [TVW](#), [HMWT](#), [CMS](#), [FWAG](#), [CLA](#), [NFU](#).

#### 23.6.3 Species management and protection

**WC7.** Investigate the feasibility of implementing eradication programmes for non-native crayfish, by 2000, targeting areas where they threaten White-clawed Crayfish populations (sterilisation and release of males and removal of females should be investigated as a possible method).

**Action:** [EA](#).

**WC8.** Investigate the feasibility of re-introducing native crayfish to selected sites by 2002, where the habitat is suitable and non-native crayfish are absent. If feasible, undertake a programme of re-introductions according to accepted scientific principles, from 2003.

**Action:** [EA](#), [UH](#).

#### 23.6.4 Advisory

**WC9.** Provide advice for those involved in the conservation of this species and management of non-native populations e.g. angling organisations and landowners. The Environment Agency has produced a leaflet.

**Action:** [EA](#), [HMWT](#).

**WC10.** Provide advice to angling clubs occupying or close to White-clawed Crayfish Wildlife Sites on measures to help conserve the species.

**Action:** [HMWT](#), [EA](#), [angling groups](#).

#### 23.6.5 Research and monitoring

**WC11.** Carry out a detailed survey of Hertfordshire waterways by 2000 designed to show the areas occupied by native crayfish to produce an inventory of Key Sites. Records should be sent to HBRC, and then

onto the Environment Agency/University of Nottingham national monitoring scheme.

**Action:** [HBRC](#), [HMWT](#), [EA](#).

**WC12.** Monitor the populations at Wildlife Sites, at least every 3 years. Prepare and implement monitoring strategy by 2001.

**Action:** [EA](#), [HMWT](#), [HBRC](#).

#### **23.6.6 *Communication and publicity***

**WC13.** Raise public awareness of the status, threats and needs of the native crayfish in Hertfordshire, through promotion of The Environment Agency leaflet, from 1998.

**Action:** [EA](#), [HMWT](#).

**WC14.** Raise public awareness of the status, threats and needs of the native crayfish in Hertfordshire, through production of a revised leaflet incorporating a survey form, by 1998.

**Action:** [HBRC](#), [EA](#), [HMWT](#).