North York Moors National Park Authority

White Clawed Crayfish Species action plan

North York Moors National Park
White-Clawed Crayfish Species Action Plan
2008–2012

White-clawed crayfish (*Austropotamobius pallipes*)

Our objectives for white-clawed crayfish are:

1. To maintain the range of the white-clawed crayfish within the National Park.

2. To maintain the population density of the white-clawed crayfish within the National Park.

Introduction

The white-clawed crayfish (*Austropotamobius pallipes*) is the only native freshwater crayfish in Britain. It gets its name from the pale undersides of its claws, the rest of the crayfish being a dark greenish brown. Native crayfish can be found in a range of still and flowing freshwater habitats. Their diet mainly consists of fallen leaves and aquatic plants, but may also include some animal food such as snails and caddis-fly larvae, dead fish or even other crayfish. They survive best in calcareous, clear, well-oxygenated water with little sedimentation and few pollutants. They are eaten by many fish, birds, rats, mink and otters, so shelter is essential to their survival. This is provided by overhanging banks, submerged vegetation, cobbles, rocks, roots and woody vegetation, and water-saturated logs. The crayfish must also use shelter to avoid being washed away when streams are in spate after snow or heavy rain.

White-clawed crayfish are most active in the summer, when the water in the streams is at its warmest, there is plenty of food and they can grow well. In the autumn the male crayfish go out at night looking for a mate. After mating the females lay a clutch of up to 100 tiny eggs which they keep attached under their tails throughout the winter. Crayfish don’t hibernate, but they are not very active in the winter, when the water is cold and there is a much greater risk of high flows. The females release their young in June. They look after them for only a day or two, and then the young ones are on their own. Most are eaten by aquatic insects, fish, or other crayfish, or are lost in floods. Some survive to breed themselves after about three years. A few may survive for 10 years or more.

White-clawed crayfish are good indicators of a healthy river. They are vulnerable to pollution, from urban areas or farms. Sheep dips are especially harmful to crayfish and to many other kinds of river life.

National Status

During the 1970s and '80s the white-clawed crayfish suffered a drastic fall in numbers and many populations became locally extinct across England. The main reason for this dramatic decline was the introduction of the American signal crayfish from fish farms. Signal crayfish are bigger and more

aggressive predators, capable of out-competing and preying on their smaller native relatives. Signal crayfish can also carry the fungal pathogen *Aphanomyces astacii* which can kill off native crayfish populations within weeks. The intensification of agriculture and the consequent general reduction in our nation's water quality (due to sedimentation and chemical runoff) compounded these survival issues for the native crayfish in the UK.

Since the formation of the National Rivers Authority in 1989, water quality across Britain has improved significantly. Despite this, the steady increase in signal crayfish populations means that white-clawed crayfish are still in decline.

Local Status

Signal and other non-native crayfish are believed to be absent from rivers in the North York Moors. No crayfish farms were registered within the National Park before the creation of the 'no-go' area for the stocking of signal crayfish in 1996. Surveys on the Derwent in the Forge Valley during 1996 and 1997 showed it to have one of the best populations of white-clawed crayfish in the UK.

Unfortunately in 2007 the Environment Agency surveyed and confirmed the presence of signal crayfish in Settrington Beck (just outside the National Park boundary, but within the Derwent catchment). The crayfish are quite widespread in the beck and if they have not yet reached the main river Derwent, they may well be getting very close to it by now.

Another non-native crayfish species was found in the River Hertford at Ganton (again outside of the Park boundary, but just upstream of the Derwent confluence) in one of EA's 2007 biology samples. There is no known method at present to remove non-native crayfish from a water catchment without also severely harming native crayfish and other wildlife.

Surveys along the River Rye have also shown a healthy white-clawed crayfish population in the past, although there are unconfirmed reports that this population has been declining in recent years, possibly because of the severe flooding in 2005. By contrast, no crayfish have been recorded in the Esk either during Environment Agency surveys or by water bailiffs or anglers. However no official surveys have been carried out.

Local Examples

- The upper reaches of the River Derwent, including Raincliffe and Forge Valley SSSI and NNR, support an abundant and virtually continuous population that is probably of national importance, although it is now under threat from non-native crayfish populations downstream.

- The Rye supports a relatively small crayfish population. This river may still be of regional importance for its crayfish populations. Small stretches of the river are within SSSIs.
- Gormire Lake SSSI and the adjacent small lake supported large native crayfish populations in the 1930s, but no crayfish surveys have taken place since then. The size of any current population is not known, but if crayfish are present the site would be important, as it is isolated and unlikely ever to be colonised by non-native crayfish.

Legal Status

- *Annexes II and V of the EC Habitats Directive*
  This EU Directive requires the UK government to ensure and monitor the favourable conservation status of the species.
- *Appendix III of the Bern Convention (Conservation of European Wildlife and Natural Habitats)*
- *Schedule 5 of the Wildlife and Countryside Act 1981*
  Under the Wildlife and Countryside Act it is illegal to take or sell a white-clawed crayfish. A licence may be issued for operations in relation to maintenance or engineering works which affect the species. The three species of non-native crayfish established in the wild are listed on Schedule 9 of the W&C Act, which makes it an offence to release or allow them to escape into the wild.

Links to other Action Plans

Habitat Action Plans:	**Species Action Plans:**
Rivers and streams*#	Water vole*#
* = Local Species Action Plan	
# = UK Species Action Plan(s)	

Threats

Biological

- Crayfish plague is caused by the fungal pathogen *Aphanomyces astacii* and is fatal to our native species, causing localised extinctions within weeks.
- Signal and other non-native crayfish species, introduced for commercial farming from the late 1970s (and still available in some pet shops) carry crayfish plague.
- Crayfish plague can be introduced when stocking watercourses and ponds with fish that have been raised on farms, lakes or rivers that support non-native crayfish populations.
- The disease can also be introduced to watercourses on wet nets, boots or other angling gear.

Physical

- Changes in agricultural management (such as land drainage, ploughing arable grasslands, and over-grazing) can cause excessive erosion and siltation. This results in an anoxic silty layer close to the bed of a stream, which adversely affects crayfish habitat.
- Increased tree cover (often via natural regeneration, eg of alders, but also commercial forestry) along watercourses might decrease the invertebrate food sources for crayfish.
- Flood defences can reduce suitable habitat and cause disturbance.

Chemical

- White-clawed crayfish are susceptible to acute pollution caused by spills of organic material with a high biochemical oxygen demand (eg cattle slurry).
- Eutrophication from sewage or fertiliser run-off results in the growth of dense filamentous algae which impedes the crayfish's movement.
- Pollution by sheep dip is a major threat, as it can kill crayfish and other crustaceans and insects over long stretches of river.
- Land-use changes such as moor gripping or afforestation have the potential to increase acid run-off, and acidification could affect white-clawed crayfish in headwater streams where present conditions are only marginally suitable.

Requirements

- Angling clubs operating within the North York Moors should only stock fish from sources that are free of non-native crayfish.
- Anglers should take measures to ensure that the plague is not transferred on wet equipment and should never bait with crayfish as this practice is illegal.
- Wide buffer strips are needed along the riparian zone, to protect it from sedimentation due to ploughing etc.
- Ditching and drainage into watercourses needs careful planning to prevent excessive sedimentation.
- Stock access to watercourses should be controlled to reduce bank erosion.
- Selective coppicing of trees to increase the amount of light reaching watercourses. This provides better growing conditions for submerged plants and thereby increases the numbers of small invertebrates that feed on them. In turn, populations of top predators such as fish and crayfish may be enhanced.
- Control the keeping of non-native crayfish which are not yet established in the wild, and the trade in non-native crayfish as pets or for other ornamental purposes throughout the UK.

Local Action

- In 1996 the North York Moors National Park Authority began a Species Recovery Programme for the crayfish. The programme assessed the status of white-clawed crayfish in the North York Moors National Park through systematic surveys of suitable habitat within SSSIs.
- Surveys of crayfish populations were undertaken in the upper Derwent catchment as part of the Upper Derwent Enhancement Project. This project also enhanced the quality of river habitat in general through the creation of buffer strips etc. Such general riparian habitat enhancement work will have benefited crayfish.
- Crayfish survey work was undertaken just outside the National Park within the Derwent catchment by the EA in 2007. There are plans for further survey work here in 2008. The Agency's current crayfish work in the Derwent catchment is mainly dedicated to identifying the presence and spread of non-natives and to checking on historical white-clawed crayfish sites.
- Thirty sites on the Rye and its tributaries are due to be surveyed in 2008, nine of them in the National Park.

Opportunities

- Conservation options such as ditch management and buffer strip creation could benefit crayfish and are available under the Defra Environmental Stewardship Schemes.
- Nationally, there is a move to identify isolated lake sites such as Gormire for stocking white-clawed crayfish. These will act as 'ark' sites to prevent the species from totally disappearing from river catchments throughout England and Wales.

What you can do to help

- Report sightings of white-clawed and signal crayfish to the National Park using the online recording form: www.moors.uk.net/recording
- Anglers should ensure that their equipment is cleaned and thoroughly dried to avoid spreading crayfish plague or signal crayfish larvae from one river catchment to another.
- Never pour toxic chemicals such as oil and paint down the drain.
- If you are a landowner, retain a strip of unmanaged land (a buffer strip) adjacent to watercourses in order to reduce diffuse pollution input to the river, and to maintain good riparian habitat for crayfish.
- If you ever see dead fish or crayfish in a stream and suspect any kind of pollution incident phone the Environment Agency emergency number: 0800 807060