

Staffordshire Wildlife Trust

Native Crayfish & Small Streams





A remote upland limestone stream. Sites like this could hold the key to the long-term survival of 'white-claws' in Europe.

White-clawed Crayfish

This booklet aims to raise awareness about the plight of our native crayfish and to highlight the role small streams can play in securing a future for this species...

Just one species is native to the British Isles and Ireland: the **white-clawed crayfish**. The name 'crayfish' is thought to derive from the old French word for 'crevice'. This is apt as these fascinating creatures hide up in various nooks and crannies during the day and come out to forage at night. Its menu is unfussy: it will eat whatever it can get its claws into including dead fish, insects, plants, detritus and one another. Its presence is an indication of a healthy freshwater environment.

Common Name:	the white-clawed crayfish
AKA:	the Atlantic stream crayfish
Scientific name:	<i>Austropotamobius pallipes</i>
Global Status:	Endangered species
Distribution:	Across Europe from Ireland to Montenegro
Protection:	Protected, along with its habitats, under UK and European legislation
Habitat:	Streams, rivers, canals, lakes
Habitat Features:	Submerged crevices among stones, tree roots, leaf litter and woody debris
Size:	11 cm long by 8 years old
Max. Life Span:	About 8-15 years
Breeding:	Takes place in late autumn. A 'berried' female carries about 80 eggs through the winter and spring. These hatch into juveniles which the mother will continue to carry underneath her tail until early summer
Main Predators:	otter, mink, grebe, carp, trout, perch, chub, eel

Going, going...

Prior to the 1970s the white-clawed crayfish was common and widely distributed across much of England, Wales, Ireland and continental Europe. Since then the population has suffered a catastrophic decline and there is now genuine concern over its future.

The reason for its swift disappearance is chiefly a result of the introduction of non-native crayfish species. The American signal crayfish is the most notorious of these alien invaders. It has spread throughout much of Britain and has, directly or indirectly, caused extinctions of native crayfish from an increasing number of rivers. Signal crayfish are much bigger, breed faster, disperse quicker, and generally displace white-claws.

The most severe impact, however, has come from a fungal-like disease, which American crayfish often carry, but which our native species has no immunity to. This 'crayfish plague' has wiped out hundreds of millions of white-claws. Plague can be transmitted by a number of 'wet pathways' such as fish stocking, angling kit, diving gear, birds' feet and mammal fur. Spores can live for up to two weeks in damp conditions.

Rogues' Gallery

Several non-native species have been confirmed in Britain so far:



White river crayfish



American Signal crayfish



Spiny-cheek crayfish



Turkish narrow-clawed crayfish



Red swamp crayfish



Virile crayfish

A Race against Time

The number one priority is to protect white-clawed crayfish at sites where they still occur. However, many conservationists have accepted that this species needs additional help to secure its long-term survival. The establishment of 'Ark sites' is being promoted.

Ark sites are locations where new populations of white-clawed crayfish can be set up. These sites can be selected to provide crayfish with the best chances of survival, where they are isolated from contact with non-native crayfish or plague. Careful assessment is required to identify and establish suitable Ark sites.



Headwater Arks

A number of Ark sites have been set up at suitable quarries, ornamental lakes and reservoirs. More recently plans have been taken forward to translocate white-claws to headwater stream sites where they are protected by their remote locations as well as natural or man-made barriers such as waterfalls, sink holes, culverts, weirs or dams. Thus they have a fighting chance at surviving nearby plague outbreaks and can also help re-colonise sub-catchments once the plague has 'burned' itself out.



The UK's varied topography and geology gives rise to a rich diversity of stream types that are ideal for native crayfish. These include Coastal Streams (e.g. Northumberland), Forest Streams (e.g. Wyre), Chalk Streams (e.g. Lincolnshire Wolds), Limestone Streams (e.g. Yorkshire Dales) and Tufer Streams (e.g. White Peak).

Case study

The following case study presents work carried out at **Cannock Chase's Forest Streams** in Staffordshire to set up an initial seven Headwater Arks between 2012-14.



Main partners: *Staffordshire Wildlife Trust, SITA Trust, Forestry Commission England, Staffordshire County Council, Natural England, Environment Agency, Harper Adams University, Cannock Chase AONB, South Staffs Water, CE Horsford Forestry & Environmental and private landowners*

Shortlisting

Great care is taken to assess potential 'donor' sites and Headwater Ark sites. Species' surveys, habitat assessments, water quality / quantity / chemistry tests are all carried out to check the suitability of the sites for translocations. Only a small percentage of sites will meet the criteria as potential Arks.



Wood is Good

The next step was habitat work at the shortlisted Ark sites. Many of the forest streams at Cannock Chase had suffered from the routine removal of fallen trees and branches from the channel. Surveys demonstrated that this was having a detrimental impact on a number of invertebrate species, including white-claws.



Work was carried out to 're-sag' several streams by 'chopping & dropping' alder, willow and birch into the channel and by introducing rootballs, stems and branches to appropriate stretches.





Repeat surveys at these sites have demonstrated the importance of this woody debris for crayfish. Along several reaches we have recorded white-claws increase from 0-5 per sq.m to 20-40 per sq.m.

At some sites additional work was required to re-connect forest streams that were disrupted by a series of 'perched' culverts. These culverts were removed and cobbles from a local quarry were introduced to the channel to create riffle habitat.

Cannock Chase case study



On the Move

Translocation proposals were then submitted to Natural England for licensing. Once approved, a small team was established to move the crayfish to their new homes. White-claws were collected at the donor sites, measured, health checked and monitored in aerated transportation tanks until they were considered ready for their journey to the Ark site. Strict biosecurity routines were observed at all times.



Gauging success

Once the white-claws were introduced to their new home disturbance was kept to an absolute minimum. Annual monitoring is carried out using methods that do not require contact with the water or the animals themselves. Night-torching is the most favoured technique, but at some sites a small number of white-claws were tagged prior to release to allow us to study their movements. Monitoring also helps evaluate the effectiveness of this approach and whether it needs altering in any way.



Follow the Crayfish Code

- ! Do not touch, buy or sell crayfish. Movement of live non-native crayfish is a major way to spread plague.
- ! **Check, Clean, Dry...** Disinfect, or completely dry out, all kit (waders, nets, rods, wetsuits, etc.) before using again.
- ! Avoid fishing, diving or surveying in more than one location in one day.
- ! Do not use native or non-native crayfish as fishing bait.
- ! Report all sightings of native and non-native crayfish to your local Wildlife Trust.
- ! Let us know where you remember seeing crayfish in the past.
- ! Report any suspected illegal crayfish trapping to the Environment Agency.
- ! Seek advice before planning any schemes that might disturb crayfish and their habitats.
- ! Report all pollution incidents and fish kills immediately to the Environment Agency on their 24 hour emergency **Pollution Hotline 0800 80 70 60**.



Buglife (National crayfish website)

www.buglife.org.uk/uk-crayfish

SITA Trust

www.sitatrust.org.uk/projects/can-we-save-the-native-crayfish

Staffordshire Wildlife Trust

www.staffs-wildlife.org.uk/node/3422

Check, Clean, Dry

www.nonnativespecies.org/checkcleandry

The Wildlife Trusts

www.wildlifetrusts.org

The Environment Agency

www.gov.uk/government/organisations/environment-agency

Natural England

www.gov.uk/government/organisations/natural-england

Chartered Institute of Ecology & Environmental Management (CIEEM)

www.cieem.net





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