

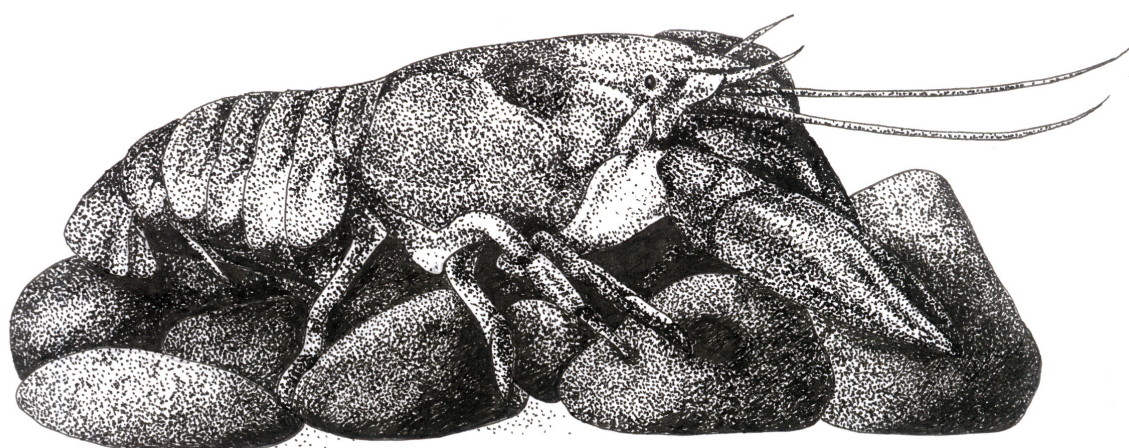
# WHITE-CLAWED CRAYFISH ACTION PLAN

## Description

The native white-clawed crayfish (*Austropotamobius pallipes*) is Britain's largest native freshwater crustacean. It is widely distributed in Europe (west and south) from the river Rhine to northern Spain. In the British Isles it occurs in Ireland, England and central and south east Wales; where it is effectively limited to the Severn, Wye and Usk catchments. The species is absent from south-west England, Scotland and parts of Wales. The white-clawed crayfish inhabits base-rich waters (providing calcium for its exoskeleton) and avoids acid waters, hence its absence from much of Wales.

Typical habitats for white-clawed crayfish in Powys are fast flowing streams with a loose rocky substrate, where they are found beneath the boulders. They also seek shelter in tree roots within the stream or loose alluvial banks. Crevices within retaining stone walls of waterways, e.g. canals, are also favoured habitats. White-clawed crayfish are known to inhabit standing waters in Powys; in the 1980s the retaining dam at Pencerrig Lake near Builth Wells (Radnorshire) gave way, flooding fields in the Dulas valley and leaving hundreds of crayfish stranded.

White-clawed crayfish can be found throughout the year but are most active in summer and autumn when water temperatures are at their highest. From late September female crayfish will carry a batch of eggs resembling a small blackberry under their tails. They carry this until the eggs hatch in May. The young then feed and grow for at least two, and usually three, years before reaching breeding size. Males can be identified by the forward pointing pair of appendages on the first abdominal segment. Males are seasonally less active but less secretive than females in the winter and thus more frequently caught at this time. The only other crayfish species in Powys is the alien signal crayfish (*Pacifastacus leniusculus*) which can be distinguished from the native species by its large red claws with a white (signal) patch, compared to the appropriately pale claws of the generally smaller white-clawed crayfish.

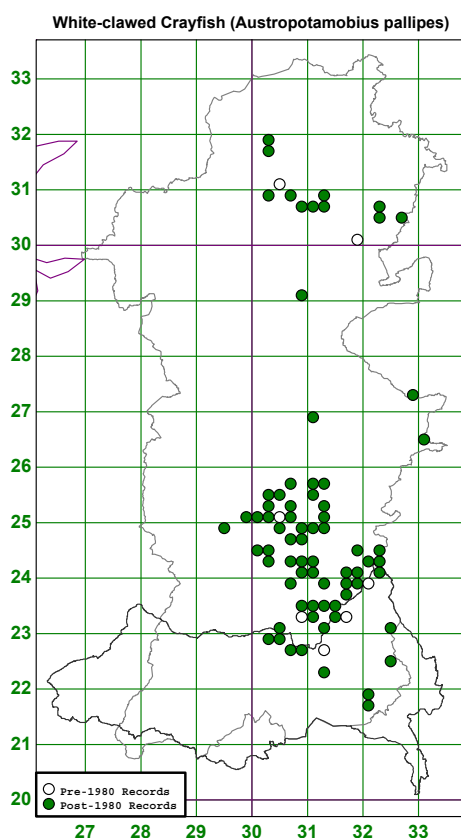


## Targets

<b>Target 1:</b>	To understand the current distribution and population sizes of white-clawed crayfish within water courses and water bodies in Powys and to monitor known adverse factors affecting their distribution.
<b>Target 2:</b>	To retain existing populations of white-clawed crayfish and encourage a return to the pre-1980s range.
<b>Target 3:</b>	To restore habitat within river habitat improvement schemes primarily designed for other species.
<b>Target 4:</b>	To ensure that through education and legislation, water quality problems relating to agricultural chemicals are minimised.
<b>Target 5:</b>	To ensure that adequate precautions against the spread of crayfish plague are taken and maintained and eradicate non-native crayfish species where they are a threat to the native white clawed crayfish.

## Current status

The status of the white-clawed crayfish in Powys catchments is not known in detail but a general picture of recent trends has been established by the Environment Agency and other organisations (2000 survey). A more comprehensive overview for the Wye and Usk was provided by a CCW-funded survey in 1995 (Rogers and Holdich, 1995), due to be repeated in summer 2002. The species is thought to be seriously threatened on the river Wye. White-clawed crayfish were probably introduced to the area via stretches of the River Irfon, a tributary of the River Wye (near Builth Wells) around the turn of the 19<sup>th</sup> century.



The first systematic survey for white-clawed crayfish in mid-Wales was in 1978 on the River Wye. Numerous crayfish studies were undertaken throughout the 1980s and 1990s. All recent studies show a decline in populations when compared to numbers from the 1980s. There are still good populations in some reaches of Powys rivers.

White-clawed crayfish are limited in distribution by water quality; water must lack significant pollution and contain sufficient calcium and magnesium for development of the carapace (exoskeleton).

Powys rivers are generally acidic and poor in minerals thus white-clawed crayfish are rare here. Historically the river Wye has been a good habitat for native crayfish and it has been proposed as a SAC for the species. Given suitable water chemistry they may be found in standing or flowing waters, lakes, old quarries, rivers and streams. Populations are scattered throughout the river Wye and its tributaries but are thought to be declining.

The white-clawed crayfish achieved legal protection in 1986 through its addition to Schedule 5 of the Wildlife & Countryside Act 1981 (in respect of taking native crayfish from the wild). It is also covered under Schedule 9 of this act, making it an offence to release into the wild, or allow to escape, all three species of non-native crayfish in the UK. The European Union Habitats and Species Directive (1992) lists white-clawed crayfish in Appendix II requiring, amongst other things, Special Areas of Conservation (SAC) to be set up to protect it. Further international recognition of its vulnerability has resulted in its inclusion in Appendix III of the Bern Convention. Within Britain, to help protect the species from the damaging consequences of the introduction of alien crayfish species, ARAD (formerly Ministry of Agriculture Fisheries & Food) introduced the Prohibition of Keeping of Live Fish (Crayfish) Order 1996, which designated “no-go” areas for alien crayfish farming and banned the unlicensed keeping of *Pacifastacus leniusculus* in no-go areas.

### **Current factors affecting the species**

- Introduction of alien crayfish species (*Pacifastacus leniusculus*) which competes with the native white-clawed crayfish and carries the crayfish plague (the fungus *Aphanomyces astaci*).
- Outbreaks of crayfish plague are hard to diagnose due to the narrow time period when diseased animals are visibly present.
- Over-stocking (sheep and cattle) of riverside fields results in severe poaching of river banks. The streams and rivers become more silted and consequently habitat quality is reduced. Good populations in cavities in canal stone work (and dams) are further evidence that un-silted environments are favourable.
- Direct and indirect disposal of sheep dip and pesticides into water courses. Crayfish appear to be particularly sensitive to synthetic pyrethroid sheep dips. Even when other aquatic invertebrate populations have recovered in a stream, crayfish populations do not return. It may be that a low level of pollution is still occurring although they are naturally slow in recolonising.
- Crayfish are often the dominant item in an otters diet and increasing otter numbers over the last decade in mid-Wales could be having an impact on crayfish numbers. This is unlikely to be a significant threat.
- Upland coniferous forestry clearance caused huge siltation of the Upper Edw river in the early 1990s killing a large proportion of the crayfish and affecting the river for many years afterwards.

## **Current action in Powys**

- The status of the species in the Usk and Wye catchments was determined by an Environment Agency survey in 2000 with a repeat survey to be undertaken in 2002.
- The Environment Agency continue to monitor sheep dip in rivers and have produced reports for 1998, 1999 and 2000.
- The River Edw was surveyed for crayfish under contract to the Countryside Council for Wales in 2000.
- The crayfish of the Monmouthshire and Brecon Canal were surveyed under contract to CCW in 2001 although only one site adjacent to the canal was occupied.
- The work of the Wye Foundation on river habitat improvement is of both direct and indirect benefit to white-clawed crayfish.
- Brecknock Wildlife Trust has provided training on crayfish to its otter group so that they can help to gather distribution data.
- The river Wye in Powys has been notified as a cSAC partly on account of its significant white-clawed crayfish population.

## **Key Habitats**

Fast flowing rivers and streams are favoured by native crayfish; fine sediment is flushed away and they have plenty of oxygen. These tend to be headwaters and smaller tributaries because they are less likely to be contaminated by run-off and soil from heavily stocked pastures. Although there could be some benefit in establishing reserve populations in isolated waterbodies, the main habitat associated with the species in Powys and requiring positive action is running water. In particular first, second and third order tributaries. In many places bank damage and siltation have physically destroyed crayfish habitat.

## White-clawed Crayfish Action Plan

Action	Meets target	Deliverer	Complete by
<b>Policy and legislation</b>			
Ensure local enforcement of Wildlife & Countryside Act (1981) relevant to native crayfish and their habitat.	1,2	CCW	2003, ongoing
Ensure guidelines for SAC and SSSI areas are adhered to and provision for white-clawed crayfish made in management plans.	2,4,5	CCW	2005
Use EA LEAPS and forthcoming EA corporate plans to promote good management practice in streams inhabited by crayfish.	2,3,4,5	EA	2003, ongoing
<b>Site safeguard and management</b>			
Ensure the needs of native crayfish are taken into account in controlling sheep dip pollution and related issues.	4	EA	2003, ongoing
Give adequate protection to known crayfish sites – using SAC and Tir Gofal	4	EA, CCW	2005
Improve degraded crayfish habitat through riparian and in-stream improvements in ten areas close to known populations.	3	CCW, EA, WF, WTs	2010
<b>Monitoring and research</b>			
Undertake detailed native crayfish surveys of Usk, Wye and Severn catchments in Powys to determine extent of populations with particular emphasis on minor tributaries and head-waters.	1	CCW, EA, UW, WTs	2005
Monitor the use of improved habitat by white-clawed crayfish at five known sites.	1	CCW, UW	2008
Assess (by surveying) the state of Powys streams particularly in terms of bank erosion, siltation and points of effluent discharge.	1	EA, CCW, UW	2005
Investigate the problems/possibilities of native crayfish reintroductions at extirpated sites and the problems of rearing stock for release.	2	CCW, UW	2010
Encourage trained volunteers from WTs to survey regularly for crayfish in known sites (under CCW licence) every two years.	1,5	WTs	2005, 2007
Pass survey information to local records centre.	1	BIS + ALL	2003, ongoing
Environment Agency to continue its annual sheep dip surveys to include known crayfish rivers.	4	EA	2003, ongoing
<b>Advisory</b>			
Ensure information on native crayfish conservation and habitat management is available to all site owners, fisheries interests, Local Authorities and other interested bodies.	5	PCC, CCW, EA, WTs	2005
Ensure that the availability of EA documentation concerning crayfish is made known to all interested bodies.	5	EA	2003, ongoing
Publicise the legislation concerning the keeping and release of non-native crayfish.	5	ALL	2003, ongoing
Utilise all available means to raise the media profile and public perception of native crayfish.	5	ALL	2003, ongoing

## **Associated action plans**

- UK action plan for the conservation of the native freshwater crayfish (for which JNCC is the lead partner)
- Powys rivers and streams action plan
- BBNP white-clawed crayfish action plan
- MoD Integrated Land Management Plan (Sennybridge)