



REVISED PLAN MAY 2017

WHITE-CLAWED CRAYFISH

Austropotamobius pallipes

1. INTRODUCTION

The white-clawed crayfish (also known as the Atlantic stream crayfish) is the only native species of freshwater crayfish in the UK. It lives in a variety of aquatic habitats that include streams, rivers, lakes, canals, reservoirs and water-filled quarries, preferring those without too much sediment and minimal pollution. Good refuges and cover, e.g. rocks, stones, aquatic vegetation, tree roots and bank cavities are important for its survival and lifecycle.



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It is generally nocturnal, feeding on a range of vegetation, animal matter and detritus. Young crayfish are predated on by fish; larger crayfish are taken by birds, especially Grey Heron (*Ardea cinerea*), as well as mammals such as rat (*Rattus norvegicus*), mink (*Neovison vison*) and otter (*Lutra lutra*). The young can also fall prey to predatory insects such as dragonfly nymphs and diving beetle larvae. Maturation takes 3-4 years, with adults rarely exceeding 10cm in body length.

For identification purposes, it is worth noting that at least six further species of crayfish have been introduced into Britain, with the American signal crayfish (*Pacifastacus leniusculus*) now accounting for an increasingly high proportion of crayfish records in the sub-region. Other non-native species include the noble (*Astacus astacus*), red swamp (*Procambarus clarkii*), spiny-cheeked (*Orconectes limosus*), virile (*Orconectes virilis*), and Turkish narrow-clawed crayfish (*Astacus leptodactylus*), some of which are recorded within the Severn and Humber River Basins.

The introduction and spread of these non-native species has impacted the survival of white clawed crayfish, which is out-competed for food and habitat by these more aggressive species. Furthermore, these non-native species also carry crayfish plague (*Aphanomyces astaci*), a fungal disease that is lethal to the whole localised population of white clawed crayfish once infected. Together with loss and degradation of habitat, poor water quality and impacts from pollution, white clawed crayfish have declined greatly within their natural range. Research states there has been a >52% decline in England within the last 10 years ([IUCN, 2015](#)). Without conservation action, this species will continue to disappear from the freshwater environment, with research suggesting that if current trends continue, it could be extinct within 30 years.

To ensure the survival of this species, regulation and national conservation strategies have been developed alongside a toolkit to develop a catchment scale conservation strategy that can be applied at a more local catchment level. The toolkit was created in partnership with [Buglife](#).

2.	OBJECTIVES	TARGETS
Associated Action Plans are: 'Quarries & Gravel Pits', 'Rivers & Streams', 'Lakes & Reservoirs', 'Canals' and 'Otter'		
PLEASE CONSULT THE ' GENERIC SPECIES ' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR OBJECTIVES COMMON TO ALL SPECIES PLANS		
A.	Review the distribution, health and status of the white-clawed crayfish within the sub-region.	2018
B.	Maintain the present population and range of white-clawed crayfish.	ongoing
C.	Increase population size and range.	2020
D.	Promote biosecurity measures to protect native crayfish from non-native crayfish disease threats.	ongoing

3. NATIONAL BAP OBJECTIVES & TARGETS

White-clawed crayfish are listed on the current UK Biodiversity Action Plan (BAP) Priority Species list published in 2007 ([Joint Nature Conservation Committee](#)). This was developed further in the England Biodiversity Action Plan 2010 to 2015 by the [Environment Agency](#) (EA) in 2009.

The aims for both the UK and England Biodiversity Strategy are the same and have been reflected in the local action plan:-

- Work together to invest in common goals
- Effectively manage data and information
- Protect and improve habitat and populations
- Invest in Knowledge and Communication

4. CURRENT STATUS

White-clawed crayfish was formerly widespread in the UK, especially in areas where the water is alkaline. Recent decades have seen major losses of the species range, although it remains widespread but localised in central England. About a quarter of the world population of this species is estimated to occur in the UK.

In Warwickshire, the most notable site for white-clawed crayfish is [Ensor's Pool](#) on the outskirts of Nuneaton, which as a [Special Area of Conservation](#) (SAC) is a strictly protected site designated under the EU Habitats Directive. In 2014 a survey at Ensor's Pool revealed no crayfish present, thought to be due to infection by non-native crayfish. Natural England (NE) organised a number of surveys at the site during 2015 but extensive trapping failed to catch a single crayfish. This was followed up with a hand search by a NE dive team and again no crayfish were found. Specialist crayfish consultants have followed up these surveys in 2015 to investigate the pool's ecology, water quality and if crayfish plaque might be present. An internal report by NE on the investigation produced in 2015 states that "Further specialist advice recommended a bioassay which was then

carried out June – September 2015 and this found no evidence of crayfish plague. A further trapping survey in September 2015 again found no crayfish. The results of these surveys indicate that it is unlikely that crayfish remain present in Ensor's Pool, although there is no agreed level of trapping effort to demonstrate complete absence."

Other local water bodies known to be supporting the species include the R.Alne (LWS) and its tributaries - the Ullenhall and Tapster Brooks and the Coventry Canal. They are assumed present on R Arrow and possibly Newbold Quarry, Rugby.

Other populations may exist on the R.Leam , R. Avon, R. Itchen R. Stour, R. Swift, R. Arrow R. Anker, and at Middleton Hall (alongside the American signal crayfish). The population of native crayfish previously present on the R. Blythe is thought to be extinct and a large population of signal crayfish is now believed to exist there. There may also be remnant populations on parts of the canal network, though many of these records are not recent and likely to have been replaced with non-native species. Positively, new populations are being discovered, including a good population on the Low Brook in 2014 near Birmingham Airport; this flows into Kingshurst Brook, a pLWS. Due to the species fragmentation and their secretive nocturnal existence, small populations are likely to be still found in the future, probably on an ad-hoc basis due to limited resources to survey for them.

Local Wildlife Sites designated for crayfish in 2016 are R. Alne, Coventry Canal Basin and Perch Hill Quarry where the large pools at Griff Quarry and Pool Farm, claimed to have native crayfish, will be resurveyed 2017. Potential LWS are R. Arrow and Kingshurst Brook which includes Low Brook.

4.1 Legal and Policy Status

The white-clawed crayfish is listed on Annexes II and V of the [EU Habitats Directive](#) and Appendix III of the [Bern Convention](#), and is classed as globally endangered on the [IUCN Red Data List](#). In the UK, the species has some protection under Schedule 5 of the [1981 Wildlife & Countryside Act](#) (as amended) in respect of being taken from the wild and sold but not being killed. Under the new [Biodiversity 2020](#) framework, white-clawed crayfish are listed as a Schedule 41 species ensuring due regard is taken for its protection by authorities.

It should also be noted that it is an offence to release non-native crayfish into the wild without a licence (under the Wildlife & Countryside Act 1981). Furthermore, under the Import of Live Fish Act 1980, the [Prohibition of Keeping Live Fish \(Crayfish\) Order 1996](#), it is an offence to keep signal crayfish and other non-native species in certain 'no-go' areas defined by a post code areas, without a licence; the schedule lists postcode areas within which no licence is required. The area of Warwickshire in the River Avon catchment lies outside the 'no-go' areas. However, areas of Solihull, North Warwickshire, Nuneaton and Bedworth and Rugby within the Anker and Blythe catchments are inside these 'no-go' areas.

The [Environment Agency \(EA\) bylaws](#) make it an offence to use any crayfish as angling bait. This should help protect the native species and help prevent the spread of crayfish plague. In addition, all trapping of any crayfish requires [a licence](#) from the EA to carry out

the activity; no trapping in the 'no-go' is allowed other than for approved scientific or fisheries management reasons.

4.2 Current Factors Affecting the Species

- **Crayfish plague**, a disease caused by a fungus (*Aphanomyces astaci*). It is carried by signal crayfish (*Pacifastacus leniusculus*) as well as other introduced species and the fungal spores can be transmitted by a variety of means including water, fish and damp fishing and sampling equipment.
- **Direct competition** for food and habitat from non-native crayfish. Signal crayfish are thought to be relatively widespread in the county, while spiny-cheek crayfish (*Orconectes limosus*) have also been recorded.
- **Loss of habitat** through development and intensive/inappropriate land management (e.g. loss of ponds and other water bodies) and river maintenance practices.
- **Pollution**, particularly sheep dip chemicals, pesticides, sewage and sedimentation.
- **Low water levels** can increase the white-clawed crayfish's vulnerability to predation by various fish, mammals, birds, etc.

5. LOCAL ACTION

- The EA is working with partners to help protect and increase white-clawed crayfish in Warwickshire. In particular it is co-ordinating white-clawed crayfish surveys and monitoring in the county, and is liaising with landowners and managers to promote its continued survival.
- Warwickshire Ecological Services / Warwickshire Wildlife Trust (WWT) / EA / [Natural England](#) (NE) respond to planning applications in respect of development that might impact on existing populations and ensuring mitigation, consenting and habitat enhancement under [National Planning Policy Framework](#). Embed protection within Local and Neighbourhood Plans and other strategic documents such as the Minerals Plan.
- Canal & Rivers Trust is considering Terry's Pool at Earlswood lakes as a potential ARK site that could disperse the white clawed crayfish into the Blythe SSSI and Stratford Canal; this is reliant on the eDNA surveys not turning up any non-native crayfish in that catchment (pers.comm. Paul Wilkinson, 2016)
- Other activities in the sub-region potentially benefiting white-clawed crayfish include:
 - Appropriate habitat management plans at key sites including the SAC site at Ensor's Pool (dependent on the 2015 report).
 - NE's Site Improvement Plan (SIP) for SAC sites.

Warwickshire, Coventry and Solihull Local Biodiversity Action Plan

- Implementation of policies (by EA, NE, etc.) relating to habitats, water quality, fisheries etc.
- Implementation of appropriate working practices and mitigation for works by organisations such as the [Canal & River Trust](#) (previously British Waterways)
- Publication and implementation of corporate Biodiversity Action Plans (e.g. [Severn Trent Water](#), Canal & River Trust, etc).
- Improved educational materials for schools and groups with regards to white clawed crayfish, non-native species and biosecurity
- Combined efforts from all partners to promote the [Clean Check Dry](#) biosecurity campaign at all known sites, especially those where local recreational / volunteer / anglings groups exist that use the water environment, to clean equipment and clothing after fishing.
- [agri-environment schemes](#) administered by Natural England, including carr option agreements for the pollarding of willows, have improved the management of riparian / wetland habitats.

6. PROPOSED LOCAL ACTIONS

ACTION	Lead	Partners	By
PLEASE CONSULT THE '<i>GENERIC SPECIES</i>' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR ACTIONS COMMON TO ALL SPECIES PLANS			
Policy, Legislation & Protection			
PL1. Ensure all known sites are considered for designation as Sites of Special Scientific Interest (SSSIs).	NE		ongoing
PL2. Ensure all known sites are considered for designation as Local Wildlife Sites (LWSs)	LWSP	NE EA WCC CRT LAs WWT	ongoing
PL3. Investigate extending the 'no-go' area for signal crayfish to include parts of the Blythe and Upper Avon catchment in Warwickshire / Solihull where known populations of white clawed crayfish still exist as and when post code areas are revised.	EA	NE WCC WWT LWSP CRT	2018
PL4. Use the enforcement of national and local EA fisheries byelaws in regard to preventing use of any crayfish as bait.	EA	ACs LAs LOs	ongoing
PL5. Use the enforcement of policies / licences relating to keeping non-native crayfish/fish,	EA	ACs LOs	ongoing

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including reviewing existing licences and ensuring licences are only issued in respect of secure sites (See Section 4.1).			
Site / Species Safeguard & Management			
SM1. Maintain the present population and range by undertaking positive habitat management works, linking populations on particular watercourses/sites to improve ecological resistance.	EA	NE WCC WWT LWSP CRT LAs	ongoing
SM2. Maintain water quality at known sites and promote the minimisation of sedimentation and pollution and biosecurity of these watercourses.	EA	NE WCC WWT CRT LWSP LAs	ongoing
SM3. Ensure a response to planning proposals regarding works to watercourses at or close to populations, especially SAC sites, strongly stating the need to minimise the impact on and, where appropriate, enhancement of habitats for the species. Embed protection within Local and Neighbourhood Plans and other strategic documents such as the Minerals Plan.	EA	NE WCC WWT CRT LWSP LAs	ongoing
SM4. Using results of RM3 , establish new colonies at appropriate sites.	EA	NE WCC WWT CRT LAs	2020
SM5. Implement appropriate and feasible measures to control the spread of crayfish plague and eradicate non-native crayfish where they pose a threat to populations of white-clawed crayfish.	EA	NE WWT CRT LAs	ongoing
Advisory			
A1. Provide advice to key landowners / managers with regard to best practice management for the benefit of white-clawed crayfish.	EA	NE WWT	ongoing
A2. Provide advice to the fishing community on prohibiting use of crayfish as bait which is now an offence, and appropriate disinfection procedures to prevent the further spread of crayfish plague.	EA	ACs Fisheries	ongoing
A3. Actively promote management agreements	NE	EA WCC LAs LOs	ongoing

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under agri-environment schemes that are sympathetic to, and promote the requirements of, white-clawed crayfish where appropriate.			
Research & Monitoring			
RM1. Assess the existing status, presence, extent and relative abundance of each population and create a sub-region catchment risk assessment, using Buglife's ' <i>Toolkit for development of catchment-scale conservation strategy for White-clawed Crayfish</i> '.	EA	WWT CRT	ongoing
RM2. Map the current distribution and 'ARK' sites to facilitate identification of opportunities for new sites, e.g. quarries, pools and headwater streams that are isolated from high-risk water bodies referring to Buglife's ' <i>Using GIS to prioritise and identify regional Ark sites for White Clawed crayfish</i> '.	EA	WBRC LOs	2016
RM3. Extend surveys on appropriate watercourses to determine the extent of both native and non-native crayfish populations, with reference to historic records where appropriate.	EA	WWT WBRC CRT	2020
Communication & Publicity			
CP1. Ensure that users of sites supporting crayfish, and in particular anglers, are made aware of the risks of spreading crayfish plague on equipment, and the legal controls on the release of non-native crayfish and promote the 'Check Clean Dry' campaign for biosecurity.	EA	NE WCC WWT LWSP CRT	ongoing
CP2. Produce and use improved educational materials for schools and groups with regards to white clawed crayfish, non-native species and biosecurity to encourage awareness in the local area.	EA	NE WCC WWT CRT LAs	ongoing

Abbreviations: **ACs** – Angling Clubs, **CRT** – Canal & River Trust, **EA** – Environment Agency, **LAs** – Local Authorities, **LOs** – Landowners, **LWSP** – Local Wildlife Sites Project, **NE** – Natural England, **WBRC** – Warwickshire Biological Record Centre, **WCC** – Warwickshire County Council, **WWT** – Warwickshire Wildlife Trust.

7. PROGRESS WITH ACTIONS

From 2015–2020 there will be a rolling programme of reporting on progress, of 10 action plans per year with an annual summary of results. Progress with this plan up to 2016 can be seen at www.warwickshirewildlifetrust.org.uk/LBAP.

8. BIBLIOGRAPHY

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Lawton, J.H. (2010) [Making Space for Nature](#): a review of England's wildlife sites and ecological network. Report to Defra, advocating a landscape-scale approach guided by four key principles, summarised as 'more, bigger, better and joined'.

DEFRA (2011) [Biodiversity 2020](#): A strategy for England's wildlife and ecosystem services.

Peay S., Kindema V., Attwood F. and Christmas, M. (2011) A toolkit for developing catchment-scale conservation strategy for White-clawed Crayfish. Version 1 October 2011 Buglife – The Invertebrate Conservation Trust, Peterborough.

RSPB (2016) [State of Nature](#) – a stocktake of all our native wildlife by over 50 wildlife organisations.

Natural England (2016) [Conservation Strategy for the 21st Century](#). Sets out how NE will help deliver DEFRA's ambitions for the environment to reverse biodiversity loss, sustain distinctive landscapes and enhance engagement with nature.

9. FURTHER INFORMATION

Natural England: Standing Advice Species Sheet: [White-clawed crayfish](#)

UK crayfish hub: [Identifying Crayfish](#)

MineralsUK - the British Geological Survey's [Centre for Sustainable Mineral Development](#). This website has a wealth of information on mineral resources, mineral planning, policy and legislation, sustainable development, statistics and exploration.

[Nature After Minerals](#) is a resource for everyone with an interest in quarry restoration & minerals planning for biodiversity.

[Warwickshire CC Mineral Strategy](#) - the minerals development framework consists of a number of documents.

Environment Agency: [Crayfish Trapping](#)

10. CONTACT

Contact your local Environment Agency Biodiversity Officer via the general enquires email address: enquiries@environment-agency.gov.uk or by telephoning 03708 506 506.