Headline advice note for developers

White-clawed Crayfish

The notes below give headline advice only and may not include the latest information as legislation and guidance is subject to change. Please seek professional advice.

When do I need to consider white-clawed crayfish?

White-clawed crayfish are protected under national legislation. If you are carrying out any work that could harm them (see list below) you should obtain advice from a suitably experienced and licensed ecologist.

The white-clawed crayfish is the only native species of crayfish (freshwater crustacean that resembles a small lobster) in the UK. Although widely distributed throughout England and Wales it is in serious decline due to habitat modification, pollution and crayfish plague. The escape and release into river systems of farmed non-native American signal crayfish has weakened populations of the native species by predation, competition and by passing on the crayfish plague which they carry.

In Devon few rivers have ideal conditions for the species' survival as white-clawed crayfish prefer calcareous rivers rather than the mostly acidic rivers found in Devon. The species was historically found in the rivers Exe, Culm, Clyst, Creedy, Creedy Yeo and Otter. However, there are now only two remaining populations in the Creedy Yeo and Creedy system (below the Yeo confluence) and the Culm. Although Devon is currently free of crayfish plague these two remaining populations are declining and likely to become extinct as signal crayfish are spreading through their river reaches, killing and out-competing them as they go.

Activities that can negatively affect white-clawed crayfish on the Creedy-Yeo and Creedy system and the Culm watercourses include:

- Bank re-profiling, sheet piling, revetting;
- Installation or re-installation of gabions;
- Construction and repair of bridges, outfalls, walls;
- Pipeline crossings;
- Dredging;
- Surfacing the bed (e.g. around outfalls);
- Channel diversions;
- Removal of bankside trees and vegetation;
- Weed cutting and removal of in-channel vegetation;
- De-watering operations;
- Drainage of construction sites;
- Permanent removal of riverside stock fencing;
- Siltation of river beds from any in-channel or bank works or stock access;
- Removal of established debris dams and woody debris.

Additionally, crayfish plague spores can be spread on damp and muddy equipment such as machinery that has been used on watercourses where crayfish plague is present. Therefore it is essential that equipment that has been in contact with river or lake water is not moved without either disinfecting (iodine based disinfectant) or washing (clean tap water) then drying completely. This will avoid spreading crayfish plague between watercourses and prevent infecting Devon watercourses which are currently free from crayfish plague. See the 'Check Clean Dry' website for more information on best practice for biosecurity: http://www.nonnativespecies.org/checkcleandry/index.cfm

If you are applying for planning permission from DCC please follow the Wildlife Planning Guidance for Applicants. If applying for planning permission from another LPA please follow their guidance. If you are taking forward a DCC project that doesn't need planning permission please follow the internal Environmental Review guidance.

Basic ecology

White-clawed crayfish occur in watercourses with relatively hard mineral-rich water (pH 6.5-9.0 and calcium 5mg 1-1 minimum) with gravel-bottomed or pebbled stream beds, where they live under larger stones in pools or riffles, in undermined, overhanging banks, amongst stonework, roots of woody vegetation, saturated logs and accumulations of fallen leaves. They are active mainly at night, hiding by day under stones or in crevices in the riverbank. They are important indicators of good water quality as they are intolerant of pollution.

The species grows to about 10 or 12 cm in length and gets its name from the pale undersides to its claws that contrast with the upper side of the animal, which is dark greenish brown. They are omnivores with worms, insect larvae, snails, small fish, macrophytes and algae as the main components of their diet. Sediment can clog their gills and siltation and turbidity will degrade their habitat and affect their prey. For these reasons they are not normally found in mud or silt substrates.

Mating takes place in autumn; the eggs develop whilst attached to the mother's abdomen, and the female overwinters with the eggs still attached to her. After the eggs hatch, the juveniles remain attached to the mother before becoming independent at the beginning of summer.

Surveys - quick overview

Note that a licence is required to catch or handle white-clawed crayfish. You must therefore employ an ecologist with a white-clawed crayfish licence.

Surveys for white-clawed crayfish would only be required if works are going to affect the Creedy-Yeo and Creedy system and the Culm watercourses. They should be **undertaken after the breeding season (mid-July to mid-September)**. Females may be carrying newly hatched young in late May and June so these months should be avoided.

Acceptable methods for surveying crayfish are:

- manual searching (when the water is clear and the flow is low)
- hand-netting
- night searching by torch (when water is deep and slow-moving, or in pools which are too deep to search by hand)
- trapping using a baited plastic mesh trap (when water is too deep or cloudy for manual searches) or artificial refuge traps. The Environment Agency recommends the use of ARTs in low density populations where baited traps have been shown to produce false negative results. Environment Agency consent is required for the setting of traps – see links in Further Information below.

Legislation and licensing - headlines

Species legislation

The white-clawed crayfish is scheduled under the Wildlife and Countryside Act 1981 (as amended) and is on the IUCN Red Data List for endangered and threatened species. It is also listed as a Species of Principal Importance under the provisions of the NERC Act 2006 and therefore is protected via Planning Policy.

Under the Wildlife and Countryside Act it is illegal to take or sell white-clawed crayfish. Whilst it is not an offence under the Wildlife and Countryside Act to disturb or kill white-clawed crayfish or to damage or destroy their habitat, both Natural England and the Environment Agency recommend that anyone carrying out any form of management or development work on suitable watercourses take into account the conservation of this endangered species.

Avoidance, mitigation, compensation and enhancement measures

Everything should be done to avoid impacts. Where this is not possible mitigation and compensation measures should be proportionate to the impact and ideally result in enhanced habitat for this species.

Examples of avoidance measures

- Design the scheme in order to protect white-clawed crayfish habitat.

Examples of mitigation measures

- gradual water level drawdown, and local in river crayfish translocation, by licenced ecologist
- reducing disturbance to the river bank
- ensuring no sediment released into the water
- reducing the area affected
- doing work in small sections
- ensuring no water pollution including silt
- adding appropriate vegetation
- excluding crayfish from construction areas, but only when the water temperature is 4^{o}C or higher

Examples of compensation measures

- providing habitat to replace any that will be lost

Where should I go for further information?

- Peay.S. (2000) Guidance on works affecting white-clawed crayfish. Scott Wilson Resource Report for English Nature Species Recovery Programme.
- Peay, S. (2003) Monitoring the White-clawed Crayfish Autropotamobius pallipes. Conserving Natura 2000 Rivers Monitoring Series No. 1. English Nature, Peterborough.
- https://www.gov.uk/white-clawed-crayfish-protection-surveys-and-licences
- https://www.buglife.org.uk/sites/default/files/artificial%20refuge%20traps.pdf
- http://www.nonnativespecies.org/checkcleandry/index.cfm
- https://www.gov.uk/permission-to-trap-crayfish-eels-elvers-salmon-and-sea-trout#crayfish-trap-authorisation
- Devon Biodiversity Records Centre
- Devon Wildlife Planning Guidance
- Biodiversity Planning Toolkit

Important note

Legislation, survey guidelines, species distribution and best practice mitigation may be subject to change and this note may not necessarily include the latest information. Please seek professional advice.

This Advice Note was produced by DCC's Ecologist with input and advice from the Environment Agency and Jacobs Ecologists. If you have any comments on this Advice Note or ideas for improvement please email nature@devon.gov.uk