

Invasive shrimp (*D. haemobaphes*)

Overview

The purpose of this briefing note is to give an update on the current situation regarding the recent discovery of *Dikerogammarus haemobaphes*, a relative of the killer shrimp, *D. villosus*.

The first population of *D. haemobaphes* was confirmed in the River Severn in September 2012.

Monitoring programmes are being revised as we learn more about the new species.

Following the "Invasive Non-Native Species Strategy for Great Britain" (Defra, 2008), which was developed jointly by government and stakeholders and is the first of its kind in Europe, the response is now to slow the spread by applying better biosecurity through the 'Check, Clean, Dry' approach (www.nonnativespecies.org/checkcleandry). This is important not only to help slow the spread of this species, but also other invasive species that might be present in our waterways.

While it is important to apply biosecurity measures in all cases when using our waterways, it is particularly important in areas where *D. haemobaphes* is found and of even higher priority at the four locations where the 'killer shrimp', *D. villosus* has been found, which is still relatively limited in its distribution.

Recent findings

In response to the arrival of the 'killer shrimp' in 2010, surveillance efforts have been increased and further guidance issued on the identification of this and similar species. An alert system was established for the reporting of suspect sightings and the first record of *D. haemobaphes* was reported through this system.

D. haemobaphes has now been found in The River Severn and Trent catchments and associated canals; these locations are spread over a wide area and give an indication of the potential extent of the population. The species has also been found at sites on the Foss Dyke, on the River Witham in Anglian Region and over a 12km reach of the Thames. A distribution map is given in Annex 1. It is believed that the populations have been in place for some time.

Environmental risk

In response to the arrival of *D. haemobaphes* a rapid risk assessment has been produced by experts from Cambridge University, which concludes that the potential ecological risk from the species is high (with high confidence). The assessment notes that the impact of this species in GB is likely to be high (with medium confidence), similar to that of *D. villosus*, and could result in marked ecological change, leading to decreased diversity in the invaded range by competing with or preying upon a broad range of invertebrates.

The assessment states that engaging with key stakeholders and promoting the Check, Clean, Dry process will help slow the spread. The assessment is in the process of being finalised and will be placed on the NNSS website at: <https://secure.fera.defra.gov.uk/nonnativespecies/index.cfm?sectionid=51>

Communications

A communications plan, to promote the 'Check, Clean, Dry' (CCD) messages internally and externally, has been implemented in the Midlands region. This has included a press release, during which local and national partners were briefed. There was good local coverage of the media launch with good support from the Angling Trust and the Canal and Rivers Trust. The need to apply good biosecurity to our working practices has been communicated across all functions in the Midlands.

We are working closely with Non-Governmental Organisations, such as The Angling Trust and the Royal Yachting Association, to encourage better biosecurity amongst water users.

In South East Region, 'Check Clean, Dry' leaflets were circulated to lock sites and marina operators on the 23rd October and a briefing note was sent to waterway, biodiversity and fishery stakeholders on the 31st October.

Governance

Within the Midlands, there is a Local Shrimp Operations Group that includes the Canal and Rivers Trust and Natural England. The make-up of the group is currently being revised to take account of the recent findings. The purpose of the group is to agree the monitoring programme and how that is shared amongst partners; it also oversees the communications. In South East region, a task and finish group was set-up on the 24th October to oversee the local response.

The Killer Shrimp Task Group is advising on the response to *D. haemobaphes*. Members include Defra, Natural England, Welsh Government, SEPA, CCW, and the Broads Authority. The group has contributed to this interim briefing note.

Monitoring

Our existing monitoring might be expected to pick-up *D. haemobaphes*, where it occurs. This includes a national monitoring programme for *D. villosus* to survey around 300 still water sites selected on their habitat suitability. Natural England and CCW also carry out specific *D. villosus* monitoring. All other routine invertebrate sampling sites (around 2000 per year) are also analysed for the presence of *Dikerogammarus* species. The *D. villosus* specific programme will be reviewed in November and will consider the adaptations necessary to pick up other Ponto Caspian species.

Surveying is underway in the three affected regions to gather more information on the extent of the species.

Emerging evidence is that the arrival and spread of *D. haemobaphes* was not spotted for a number of reasons. We do not routinely monitor canals, and do not sample in the deeper areas of large rivers or on hard structures. These are the sites at which *D. haemobaphes* has been found so far. We have adapted our sampling techniques to increase the likelihood of recording *D. haemobaphes*.

We expect that more records of *D. haemobaphes* will appear in the next couple of months, especially as we learn more about its behaviour and suitable sampling strategies. Increased public awareness may result in new sightings, via the alert_nonnative@ceh.ac.uk email.

More information on the identification of this and other invasive shrimp can be found in a guide published by the Freshwater Biological Association and funded by Defra:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=720>

Strategy

The strategy remains to slow the spread of both *Dikerogammarus* species by encouraging those who work and take their leisure in the water environment to observe good biosecurity, namely the 'Check, Clean, Dry' campaign. This holds even if the populations are widespread. "Check, Clean, Dry" should be the norm; slowing the spread of the species to new sites and lowering the risk of spreading new species. This is also important to help reduce the risk of introducing new invasive non-native species and in slowing the spread of other plant and animals that are already present.

The excellent work of the public and stakeholders to slow the spread of 'killer shrimp', *D. villosus*, from its four locations remains a particularly high priority.

Annex 1

