

# Discovery of a ponto-caspian mysid shrimp (*Hemimysis anomala*) in South East England with likely bird-mediated dispersal

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## Abstract

The Ponto-Caspian Bloody-red mysid shrimp (*Hemimysis anomala*) was discovered in a large freshwater reservoir in the south-east of England in 2020 (Abberton reservoir, Essex, UK). The shrimp was discovered while carrying out aquatic invertebrate surveys across a range of permanent, semi-permanent and seasonal habitats between October and December 2020. The shrimp were found in semi-permanent lagoons adjacent to and connected to the main reservoir and in shallow water bays in the main reservoir. Surveys conducted in January 2021 along a reservoir wall also found the shrimp but no accurate abundance estimates were made. Surveys conducted across the same sites with increased effort in July 2021 did not find any individuals in lagoons, bays or off the reservoir wall in either shallow or deep shelves. The identity of the species was confirmed with high magnification inverted light microscopy due to the shape and setae distribution of the antennal scale and telson in addition to the characteristic bloody red colour of the shrimp pre-preservation. Previous introductions of this species to the UK have been identified before, but whether these propagules arrived from natural or anthropogenic introductions was not clear. Abberton reservoir has no public access for boating or recreational activities other than a small, restricted local angling group but is an internationally important site for migratory and overwintering waterfowl and waders. The migration routes of several waterfowl species for which Abberton is noted would mean that this new shrimp species is likely to have been introduced from either its native range or from its expanded non-native range in the UK or Netherlands by birds. It is not yet confirmed that this discovery represents a successful invasion of this species at Abberton and if it is, when it arrived or what effects it may be having on the food web of this site.

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