

Bloody-red Mysid, *Hemimysis anomala*

Overview

Short description of *Hemimysis anomala*, Bloody-red Mysid

Adults are 6-11mm long and shrimp-like in appearance. They range in colour from deep red to ivory-yellow or translucent. Their colour can change in response to light and temperature, and juveniles are often more translucent than adults. They often swarm just below the water surface, and so can be seen as reddish-tinged clouds of thousands of individuals.

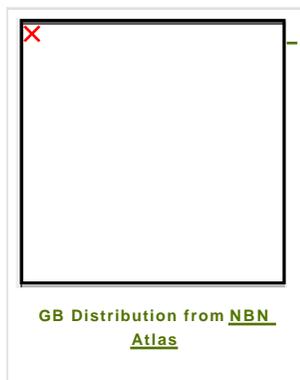
Description of *Hemimysis anomala*, Bloody-red Mysid status in GB

The bloody-red mysid is found at several sites in the English Midlands and especially along the River Trent catchment. Unpublished surveys suggest it is present in a number of English reservoirs, including Rutland Water. It has not been found in Wales or Scotland.

Habitat summary: *Hemimysis anomala*, Bloody-red Mysid

The bloody-red mysid is found in freshwater and brackish water with salinity up to 18ppt. They seek shelter in rocky crevices and are often found along banks of rivers, lakes and water bodies that have loose stones. They can tolerate water temperatures from 0-28°C, but prefer 9-20°C. They avoid direct sunlight and migrate to surface waters during the night.

Distribution map



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Overview table

Environment:	Freshwater
Species status:	Non-Native
Native range:	Eastern Europe, Western Asia
Functional type:	Omnivore
Location of first record:	Erewash Canal, Nottinghamshire
Date of first record:	2004

Invasion history: *Hemimysis anomala*, Bloody-red Mysid

Origin

Ponto-Caspian. The bloody-red mysid is native to the lower reaches of rivers that flow into the Black Sea, the Azov Sea and the eastern Caspian Sea.

First Record

English Midlands, 2004/2005.

Pathway and Method

The bloody-red mysid was intentionally introduced into water bodies in the former USSR to try and boost fish productivity. The species has spread across Europe through canals and rivers, aided by river transport and transport in boat ballast. It is not known how they were transported to GB but one of the sites where mysids were first found is an international rowing lake, so it is possible they were introduced with boats and equipment used for racing.

Species Status

Since being introduced in eastern Europe for fish food, the bloody-red mysid has now spread over most of western Europe. It reached Finland in 1992, Germany, the Netherlands and Belgium in the late 1990s and France and Britain in 2004/5. It has also spread to the Great Lakes in North America, most likely by transport in ballast water.

Ecology & Habitat: *Hemimysis anomala*,

Bloody-red Mysid

Dispersal Mechanisms

Mysids can move downstream by passive dispersal but are unable to swim upstream. They may be transported between water bodies by birds, fishermen or on the outside of boats. Given that most new occurrences in Europe have been in harbours, it is very likely that they are transported between ports in the ballast water of ships; their high salinity tolerance may facilitate this.

Reproduction

Bloody-red mysids have a high reproductive rate, producing three broods per year in warm conditions, but fewer at lower temperatures. Mean brood sizes of between 13 and 29 have been reported, and brood size tends to increase with female length. Females carry their eggs in their marsupial pouch and may be carrying young at several stages of development at the same time. Juveniles reach maturity in less than 45 days.

Known Predators/Herbivores

Bloody-red mysids are predated by fish such as perch and bullheads, and large invertebrate predators including dragonfly larvae.

Resistant Stages

The adults are tolerant to wide ranges of temperature and salinity; they are able to survive under ice, and survive the complete change of ballast waters.

Habitat Occupied in GB

The bloody-red mysid has recently spread from a few sites in the English Midlands. It is found in the margins of the River Trent and tributaries, in Rutland Water reservoir, and a number of other East Anglian reservoirs. Large swarms are also found in a rowing lake that is linked to the River Trent.

Distribution: *Hemimysis anomala*, Bloody-red Mysid

Impacts: *Hemimysis anomala*, Bloody-red Mysid

Environmental Impact

Bloody-red mysids form large colonies, are omnivorous and so can have large ecosystem impacts across trophic levels. Juveniles feed mainly on phytoplankton whilst adults consume large numbers of zooplankton – dramatic decreases in cladocerans have been observed in some cases, but further study is needed. The physicochemical environment is affected by high inputs of fecal pellets, and algal growth is changed.

Health and Social Impact

By lengthening food chains there is a risk of increased biomagnification and accumulation of contaminants in consumers at higher trophic levels. If top consumers, such as fish, are eaten by people this could cause health concerns.

Economic Impact

Despite being introduced to increase fish production, stocks often do not grow. Changes in food webs and increased predation of zooplankton by mysids may reduce essential food supplies for fish, so reducing the economic value of fisheries.

References & Links: *Hemimysis anomala*, Bloody-red Mysid

Identification

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