# Demon shrimp threaten British species

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A native shrimp and its larger rival.

A species of shrimp, dubbed the 'demon shrimp,' which was previously unknown in British waters, are attacking and eating native shrimp and disrupting the food chain in some of our rivers and lakes. The problem is contributing to the cost of Invasive non-native species (INNS) to the British economy, which is estimated at a total annual cost of approximately £1.7 billion.

Dr Alex Ford, a marine scientist from the University of Portsmouth, is investigating the problem with support from the Environment Agency. He said that demon shrimp, so called because of their larger size and aggressive behaviour, are currently a more widespread threat than the 'killer shrimp' also known to have invaded British waters in 2010. The

fear is that some of Britain's native shrimp are in danger of being completely eradicated from some rivers and lakes, he added.

"They are out-eating and out-competing our native shrimps and changing the species dynamic in our rivers and lakes. As soon as one species is depleted it can affect the whole food chain with potentially catastrophic results."

The demon shrimp originates from the region around the Black sea and Caspian sea (known as the Ponto-Caspian region) and found their way into British waters accidently, possibly through shipping in ballast water and are now infiltrating the country via navigable waterways

Dr Ford, from the University's Institute of Marine Sciences, said: "One of the main reasons why invasive species are successful is the escape from predators, parasites and disease in their native habitats. We are looking at whether these demon shrimp carry 'demon parasites,' which could also affect our native species that won't have any immunity. There is a very real bio-security threat of spreading disease and parasites in native populations without acquired resistance."

The Environment Agency considers the demon shrimp to be a big problem. Tim Johns from the Environment Agency said: "Invasive shrimps such as this species present a major threat to the ecology of our rivers and lakes and we have a real battle on our hands to control their spread."

Dr Ford and colleagues from the University's Institute of Marine Sciences are now investigating which parasites the demon shrimp are vulnerable to. They are looking at whether they bring with them their own parasites and if they are able to acquire native British parasites, which may result in suppressing population growth over time.

One of their findings indicates that a very large proportion of demon shrimp are 'intersex' – displaying male and female characteristics, which is caused by parasites which 'feminise' the host. Feminising parasites exist in both British and foreign waters, but in the demon shrimp, the feminising process has not been fully completed leaving them intersexual. One theory is that the feminising parasites affecting demon shrimp travel with them from the Ponto-Caspian region but do not perform the feminising process well in British water, possibly due to its different chemical makeup.

Provided by University of Portsmouth