Emily Wilkinson is a Masters student with Royal Holloway, University of London conducting a study to identify whether there are any predators consuming invasive decapod crustacean species in the Thames catchment area. The survey questionnaire aims to a) collect eyewitness accounts of the consumption of invasive decapods by predators, and b) collect accounts of invasive decapod crustacean remains found within the Thames freshwater catchment area. Emily explains more about the invasive crustaceans she's researching and how you can help in the article below.

- Click here to complete the Predators of invasive crustaceans in the Thames freshwater catchment questionnaire

The Chinese Mitten Crab

The Chinese mitten crab (*Eriocheir sinensis*) is native to South East Asia, and is a catadromous species, meaning the adults reproduce in coastal and estuarine environments before the juveniles migrate upstream to freshwater where they mature for several years. Trans-oceanic shipping has accidently introduced the Chinese mitten crab to many regions across the globe by depositing ballast water containing their larvae. Consequently, this crab has earned itself a place on the list of the world's 100 worst invasive species.



The Chinese mitten crab eats a wide range of food, including plant material, fish eggs and invertebrates including other crustaceans and molluscs. So, when Chinese mitten crabs become established in a new habitat they can consume and outcompete native species thereby depleting biodiversity and disrupting local ecology. Furthermore, they can cause serious damage to fishing gear and their burrowing behaviour can lead to riverbank collapse, having a negative impact on the invaded region's economy.

In the mid-1930s the Chinese mitten crab was recorded in the Thames for the first time, and

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since then the population has dispersed and has been found as far upstream as Mapledurham, Oxfordshire. It is a notoriously difficult species to control with eradication programmes, migration barriers and traps all having little to no success.

The American Signal Crayfish



Also found within the Thames freshwater catchment area are invasive American signal crayfish, *Pacifastacus leniusculus*. Signals were introduced under the pretext of crayfish farming, but many have escaped or been deliberately released into the surrounding area. The problem with this invasive crustacean is that it carries a fungus referred to as crayfish plague.

While it is immune to this disease, our native white-clawed crayfish, *Austropotamobius pallipes* is not. Consequently, native white clawed crayfish populations have been decimated. The IUCN Red List assessment for the white-clawed crayfish lists the population as decreasing and the species is designated as endangered and therefore facing a very high risk of extinction in the wild (IUCN 2010).

My project

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Little is known about the predators of these invasive crustaceans. My project is aiming to establish which animals, already found along the Thames, are feeding on them. Not only would it be good to know what their predators are, but by increasing our understanding of the ecological connections with our native fauna, we can better understand how human intervention can be targeted.

The most likely terrestrial predators of Chinese mitten crabs and American signal crayfish are mammals (e.g. otter, mink, fox) and birds (e.g. heron, gulls, great crested grebe). To determine whether these potential predators are actually eating the crustaceans, I have been looking through samples of faeces, pellets and regurgitations (very glamourous, I know).

I have had some success but unfortunately the current COVID-19 situation has made sampling extremely hard, which is why I could use your help...

How you can help

I have created a questionnaire to collect naturalists' observations of the predation of invasive crustaceans in and around the Thames catchment. I have heard from some individuals who have watched birds catch and consume different invasive crustacean species, some have noticed claws and exoskeleton in pellets, and others have found crustacean remains with bite marks on them. If you have ever witnessed something like this, even if you are unsure of the predator or the prey, I would love to hear about it.

The questionnaire (link below) starts with an information sheet and consent form for you to complete. It will then ask you about what you witnessed as well as questions such as when and where you saw it (but do not worry if you can't remember exactly). There will also be an opportunity to upload any photographs you are willing to share. **It should only take about 10 minutes to complete**; if you have any questions please do not hesitate to contact me. I really appreciate your help and I can't wait to hear from you!

- Click here to complete the Predators of invasive crustaceans in the Thames

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freshwater catchment questionnaire

- Email Emily to find out more about the project

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Date Published: 20/02/2021

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