

What are freshwater invasive non-native species?

Animals and plants that have been introduced by human actions to parts of the world outside their natural range are known as non-native species. Most of these do not cause any problems in GB.

However, a small proportion, known as invasive non-native species, can cause serious and permanent problems by harming ecosystems. They can be bigger, faster growing or more aggressive than native species, and may also have fewer natural predators to control their numbers. As a result, native species are often unable to compete.

A number of invasive non-native species have been introduced into the freshwater environment in GB which includes, for example, lakes, rivers and ponds.

Why should I be concerned ?

These species can devastate populations of native species and change whole ecosystems, for example, by competing with and displacing native species, spreading disease, altering the local ecology and physically clogging waterways.

This can adversely affect recreational facilities, for example, by reducing the population of fish, restricting navigation through waterways and affecting the quality of our rivers.

How are they usually spread?

Water users can unknowingly assist the spread of these species from one water body to another by accidentally carrying individuals, eggs, larvae and viable plant fragments on their equipment, shoes, clothing and other damp places.

What can I do to stop the spread of these species?

By following three simple steps when leaving the water, you can help stop the spread of freshwater invasive non-native species:



Check your equipment and clothing for live organisms—particularly in areas that are damp or hard to inspect.



Clean and wash all equipment, footwear and clothes thoroughly. Use hot water when possible. If you do come across any organisms, leave them at the water body where you found them.



Dry all equipment and clothing—some species can live for many days in moist conditions. Make sure you don't transfer water elsewhere.

www.nonnativespecies.org/checkcleandry

Freshwater Invasive Non-Native Plants

Freshwater invasive non-native plants can have a negative impact on our waterways leaving them unsuitable for both wildlife and recreation. These plants can grow rapidly, blocking out light and making it very difficult for our native species to survive.

Identification of these problem plants can be difficult with many looking similar to our native freshwater plant species. Expert advice should always be sought if you think you have found one.

The five species included in this leaflet are some of the many freshwater invasive non-native plant species found in the UK that are of most concern to our wildlife and economy.

Australian Swamp-stonecrop *Crassula helmsii*



- Small round fleshy leaves arranged along the stem in opposite pairs
- Flowers very small, white with small petals
- Can be submerged, emergent and terrestrial forms
- Forms dense impenetrable mats, can grow 200 times faster than native pond plants

Floating Pennywort *Hydrocotyle ranunculoides*



- Fleshy stems and roundish bluntly toothed leaves held horizontal and generally dissected to the middle
- Flowers without petals, greenish, held erect
- Precludes growth of other aquatic plants
- Obstructs movements of animals and boats preventing navigation and recreational use of watercourses

Water Primrose *Ludwigia grandiflora*



- Creeping perennial water plant with long oval leaves like a willow
 - Large, bright yellow flower like that of a primrose
 - Plant can produce huge numbers of seed per year
 - Currently known from just a few sites in Britain
- Urgent action needed, if found submit an image to alertnonnative@ceh.ac.uk**

Water Fern *Azolla filiculoides*



- Very small free floating water plant
- Leaves have fern like rough granular appearance and range from green to red in colour
- Black brown roots hang below the plant and can be easily broken
- This plant forms dense mats on the surface of still waters which can cause the waters surface to appear solid

Parrots Feather *Myriophyllum aquaticum*



- Aquatic perennial with both emergent and submerged forms
- Blue-green feather like leaves in whorls of 4-6
- Emergent form is more robust than submerged form
- Can block ditches and dominate ponds
- Dies back in winter although submerged form is present all year

This leaflet was produced by the Cheshire Wildlife Trust with support from Defra and the GB Non-Native Species Secretariat.



Find out more about your local Wildlife Trust visit at:
www.wildlifetrusts.org

Cheshire Wildlife Trust Registered Charity No: 214927



Freshwater Invasive Non-Native Invertebrates

Freshwater invasive non-native invertebrates can have a negative impact on our freshwater environments leaving them unsuitable for both wildlife and recreation. These organisms can reproduce rapidly, compete with and predate our native species and spread disease and parasites.

Identification of these problem species can be difficult so expert advice should always be sought if you think you have found one.

The following six species are some of the many freshwater invasive non-native invertebrates found in the UK that are of most concern to our wildlife and economy.

Zebra Mussel *Dreissena polymorpha*



© NNS5

- Invasive mollusc 20-50 mm in length
- Distinctive 'D' shape
- Usually brownish-yellowish colour with a dark and light coloured ("zebra") zigzag banding, although this can vary
- Can significantly reduce native biodiversity, and alter whole freshwater ecosystems by filtration
- A major economic pest due to its ability to block water pipes

Quagga Mussel *Dreissena rostriformis bugensis*



- Similar size and shell pattern to Zebra Mussel
- More rounded in cross section, unlike Zebra Mussel which is triangular
- Rolls to the side when placed on its front, Zebra Mussel tends to lie flat
- Similar impacts to Zebra Mussel but potentially even more invasive

Urgent action needed, if found send an image to alertnonnative@ceh.ac.uk

Killer Shrimp *Dikerogammarus villosus*



© NNS5

- Up to 30 mm in length, body is curled and semi-transparent with two pairs of antennae and large, powerful mandibles (jaws)
- Predator of native shrimp and other native fauna. Likely to disrupt ecosystems through direct predation and indirect effects across food chains
- Parasites carried by killer shrimps could reduce fish stocks

Urgent action needed, if found send an image to alertnonnative@ceh.ac.uk

Signal Crayfish *Pacifastacus leniusculus*



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- Much larger than our native White-clawed Crayfish although juveniles of both species are very similar
- Claws bright red underneath with a small turquoise / white spot on the surface
- Spreads up and down stream and may cross land to colonise adjacent water bodies where it will dominate and replace our native crayfish
- Carries Crayfish Plague which is deadly to our native crayfish

Chinese Mitten Crab *Eriocheir sinensis*



© NNS5

- Only freshwater crab found in the UK
- Migrates downstream to estuaries in Autumn to spawn
- Green, brown or grey in colour, front white tipped pincers covered in dense matt of fine hairs
- Legs long and hairy, body square and up to 86mm across
- Undermines riverbanks through burrowing leading to increased risk of erosion

Asian Clam *Corbicula fluminea*



© NNS5

- Invasive mollusc species usually less than 25 mm but can grow up to 50 to 65 mm in length
- Yellow-green to brown rounded triangular shell with evenly spaced ridges on surface
- Reach high densities and outcompete native species for food and space
- Threatens fish spawning grounds and native freshwater mollusc species

What do I do if I find an invasive non-native species?

Alert Species!

It is particularly important to let us know if you see an alert species. Tell us at:

alertnonnative@ceh.ac.uk

For more information on recording visit

www.nonnativespecies.org/recording

Remember to Check Clean Dry!

www.nonnativespecies.org/checkcleandry

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Freshwater Invasive Non-Native Plants and Invertebrates

