

Prussian Carp and Related Species August 2022

We have confirmed the presence of an invasive non-native freshwater fish called Prussian carp in England. Through our investigations we have initially detected two further, similar-looking non-native fish species known commonly as ‘ginbuna’ and ‘nigorobuna’. It is illegal to import any of these fish into the UK due to the risk they pose to our native fish populations and fisheries. Our National Fisheries Laboratory are undertaking detailed analyses of the physical and genetic characteristics of these cryptic fish species to better understand their distribution and the risk they pose. Please report any suspicions or sightings of these fish to us immediately.

Prussian Carp

Prussian carp (*Carassius gibelio*), are native to central and eastern Europe but have been introduced to many other countries, either intentionally for food or angling, or inadvertently due to their similarities with other *Carassius* species. Prussian carp may also go by the names gibel carp, gibelio, carassio and silver crucians. Prussian carp were first detected in England in 2020 and have been confirmed in four stillwater fisheries.



Ginbuna and Nigorobuna

Ginbuna (*Carassius langsdorfii*), are native to Asia but have been recorded in Europe and North America. They can also go by the common name of silver crucian carp. Nigorobuna (*Carassius auratus grandoculis*) are native to Japan, specifically Lake Biwa and its tributaries. It is unclear whether nigorobuna represents a distinct species or whether it is a sub-species of goldfish (*Carassius auratus*). Both species share many identifying features with each other and those of Prussian carp, however recent genetic analysis show both these fish are distinct from Prussian carp and crucians (*Carassius carassius*).



Ginbuna (*Carassius langsdorfii*)



Nigorobuna (*Carassius auratus grandoculis*)

The challenge of identification

Prussian carp, ginbuna and nigorobuna come from a group of fish known as the *Carassius auratus* Complex. It can be extremely difficult to distinguish these fish visually without very detailed examinations. This situation is further complicated by inconsistent records of these fish from other parts of the world. Currently, confirmation of these carp species relies on molecular tests conducted within the laboratory. Molecular tests examine the DNA of fish and enable identification based on genetic characteristics. Staff at our National Fisheries Laboratory have been working with world experts at the Natural History Museum to review and resolve this complex taxonomic group and develop better tools for their identification.

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What risk do these fish pose to our fisheries?

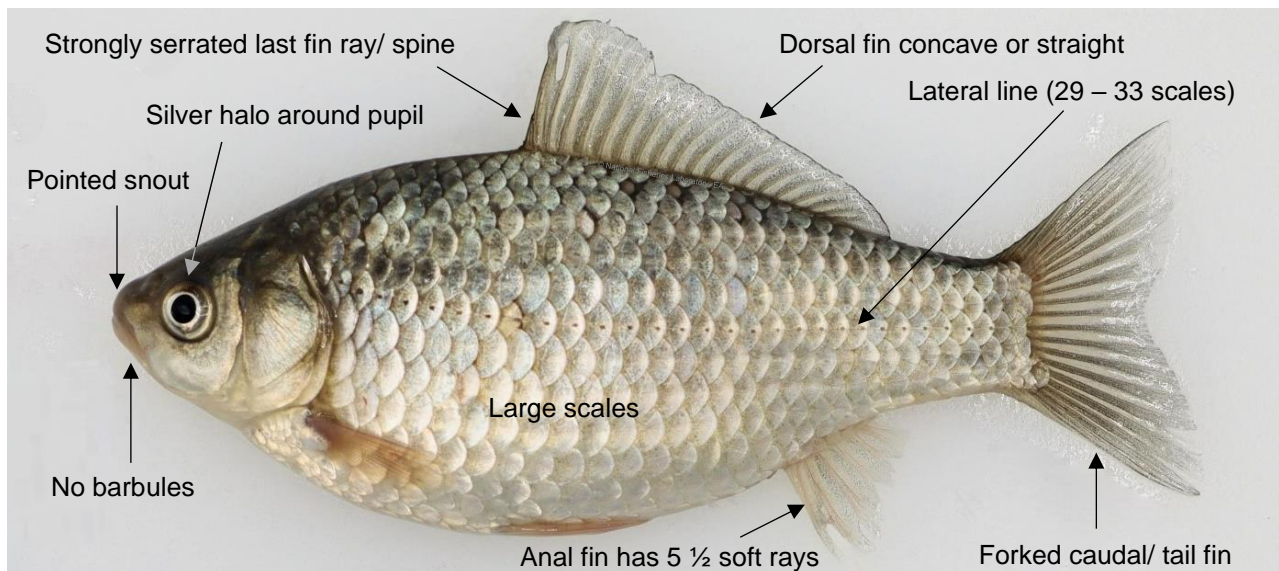
Once introduced, Prussian carp can rapidly expand their population size leading to impacts on native species and ecosystems. Prussian carp have been shown to cause environmental harm where they have been introduced elsewhere in Europe. They can reduce native biodiversity, outcompete other fish for resources and readily hybridise with other *Carassius* species, including crucians. Impacts resulting from introductions of ginbuna and nigorobuna are unclear but given their similarity to Prussian carp, they are likely to carry similar risks.

What are we doing about them?

Staff at our National Fisheries Laboratory have been leading the way on the identification of these species through detailed analyses of their physical and genetic characteristics. All samples discovered or suspected in England are being sent here for confirmation. We have provided expert input to risk assessments to better understand the biology of Prussian carp and the risk they pose to our fisheries. We will also aim to determine the risks posed by the recent discoveries of ginbuna and nigorobuna. Based on knowledge so far, we have placed movement restrictions on all waters where these non-native carp have been confirmed present. Work is also underway to establish how they might have arrived in the country and to prevent future introductions and spread.

How to recognise a Prussian carp and related species

Based on the most common external physical features, Prussian carp, ginbuna and nigorobuna look very similar to brown goldfish and some carp hybrids. However, a number of features can be used to raise suspicion of these fish for a more detailed examination. Prussian carp, ginbuna and nigorobuna are all deep-bodied, usually no more than 35 cm in length with relatively large scales. They are often silvery in colour, but larger specimens can darken to a golden brown. They lack barbules, which distinguishes them from carp (*Cyprinus carpio*). The image below highlights some of the features that can be used to help distinguish Prussian carp from other similar fish.



What you should do

We are encouraging anyone to report any suspected sightings or suspicion of these fish to our incident helpline on 0800 80 70 60. If you suspect you have captured one of these fish, please take images of the fish and email them to us: non-natives@environment-agency.gov.uk. For further information, please contact:

**National Fisheries Laboratory – Fish Health, Ageing and Non-native Fish Species,
Environment Agency, Bromholme Lane, Brampton, Huntingdon, PE28 4NE.**

Email: non-natives@environment-agency.gov.uk

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