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Conference Abstract

# Goldfish, Gibel, or Crucian? Testing Public Recognition of *Carassius* Species

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## Abstract

The crucian carp (*Carassius carassius*) is a native freshwater species whose populations in the Czech Republic have been rapidly declining in recent decades. The main driver of this decline is the expansion of the invasive gibel carp (*Carassius gibelio*), which is morphologically similar and occupies similar habitat. The resemblance among *Carassius* species leads to frequent misidentification, not only among citizens but also among experts. Such confusion complicates species monitoring and hinders the effective implementation of conservation measures. Reliable identification of *C. carassius*, *C. gibelio*, and the domesticated goldfish (*C. auratus*) is essential, especially in light of repopulation measures citizens are conducting in recent years. To explore the public's ability to distinguish between these species, we conducted a species determination experiment during the largest angling trade fair, For Fishing 2023. A total of 327 participants were randomly assigned one of five image sets, each containing nine photographs: three of *C. carassius*, three of *C. gibelio*, and three of *C. auratus*. Results showed high recognition accuracy for ornamental goldfish and large *C. gibelio* individuals. However, participants often confused smaller *C. gibelio* with *C. carassius*, particularly when determination characteristics were subtle. These findings highlight that species recognition depends on individual fish size and prominent determination characteristics. Accurate identification is not only vital for public education but also for safeguarding the genetic integrity of *C. carassius*, a critically endangered species. As a

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flagship for pond biodiversity and wetland restoration, its protection represents a broader commitment to conserving native aquatic ecosystems. The presentation associated with this contribution (Suppl. material 1).

## Keywords

*Carassius carassius*, species misidentification, hybridization, invasive species, visual perception, freshwater conservation

## Presenting author

Milan Gottwald

## Conflicts of interest

The authors have declared that no competing interests exist.

## Supplementary material

**Suppl. material 1: Goldfish, Gibel, or Crucian? Testing Public Recognition of *Carassius* Species** doi

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