

Family Tincidae

Tench

The phylogenetic position of the tench has been debated for decades, with the species currently classified as belonging to a distinct family within the order Cypriniformes. Following the publication of several molecular studies in the 21st century, *Tinca* was occasionally grouped with a diverse range of East Asian fishes, including *Zacco*, *Tanichthys*, and bitterlings belonging to the family Acheilognathidae. In this context, Tincidae was proposed as a distinct family, with the genus *Tinca* representing a monotypic taxon. The fossil record of tincids is extensive, with remains dating back to the early Oligocene (30 million years ago) in Europe, Central Asia, and Siberia. *Palaeotinca* and *Tarsichthys* were the first known genera in Tincidae and among Central Europe's earliest representatives of Cypriniformes. It is possible that they reached this area together with a small number of other Asian invaders. *Tinca* was first recorded in the Middle Miocene and has since been widespread in Europe and Central Asia. Despite the long history of Tincidae, there is only one extant species, indicating that it has very strong dispersal abilities. This may be due to the species being able to guarantee gene flow over large distances, or it may be due to a massive extinction event in the past, which reduced the species' range. The range of *Tinca* is subdivided between two slightly differentiated molecular groups of populations. The first is from the

British Isles to Poland, while the second is from Germany throughout Asia to China. Both groups show a large overlap in their range within Central Europe (Germany, Poland, and the Danube), which might originate from postglacial expansion and stocking. These two population groups indicate that there might have been two glacial refuge areas. **Further reading.** Schulz-Mirbach & Reichenbacher 2006 (*Palaeotinca*); Gaudant 2007 (*Tarsichthys*); Lajbner et al. 2010 (phylogeography); Hirt et al. 2017 (phylogeny); Tan & Armbruster 2018 (Tincidae).

Tinca tinca

Common name. Tench.

Diagnosis. Distinguished from species of Cyprinidae in West Asia by: ○ golden greenish brown body / ○ orange or red iris / ○ one pair of barbels (maxillary) / ○ 96–115 total lateral-line scales, small and deeply embedded / ○ 6–9½ branched anal rays / ○ 8–9½ branched dorsal rays. Size up to 600 mm SL.

Distribution. Centuries of stocking in West Asia and Europe have blurred the original distribution pattern. In West Asia, thought to be native to Black and Caspian Sea basins. Now widely introduced in Anatolia. Presumed native to most of Europe, naturally absent only in Ireland, Scandinavia north of 61°30'N, eastern Adriatic basin, and western and southern Greece, where it is now introduced. In northern Asia, native east to Yenisei drainage south of 60°N. Introduced in North and South Africa, Tasmania, Australia, New Zealand, India, North America, Chile, and probably elsewhere.



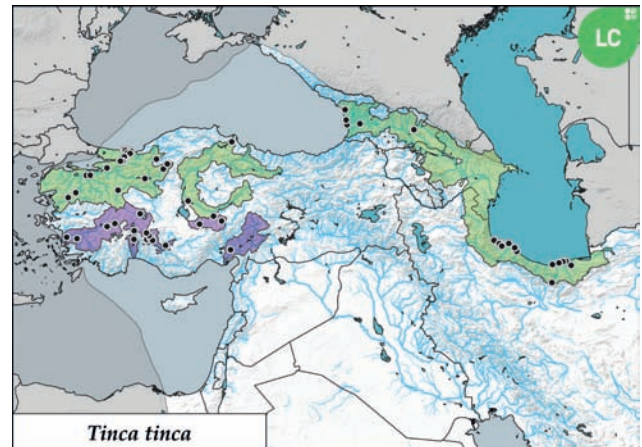
Tinca tinca; Danube drainage, Germany; ~350 mm SL. © A. Hartl.

Habitat. Typically, in shallow, densely vegetated lakes and backwaters, but introduced often to all kinds of lakes and reservoirs. Often overwinters buried in mud. Spawns in still water among dense vegetation.

Biology. Lives up to 20 years. First spawns at 2–6 years and 70–250 mm SL, females usually a year later than males. Pelvic rays more robust, longer, and extending beyond anus in males. Spawns May–October in Central Europe, usually June–July, at temperatures above 19°C, usually 22–24°C. Several males follow a female who lays eggs in several parts above vegetation. Females may spawn 1–9 times a year, every 11–15 days, if weather is warm enough. High embryo mortality has been observed when temperatures fluctuate greatly. Larvae and juveniles restricted to dense vegetation. Tolerant of low oxygen and salinity up to 12 ‰. Feeds on detritus, benthic animals, and plant material. Adults often feed mainly on molluscs.

Conservation status. LC.

Further reading. Bogutskaya 1986, 1988b (osteology, phylogeny); Brylińska et al. 1999a, b (biology); Kottelat & Freyhof 2007 (summary of distribution and biology).



Tinca tinca inhabits mostly stagnant and densely vegetated waterbodies and occasionally establishes in such waters outside its native range (Lake Gölhisar, Türkiye).