

## The distribution and abundance of the *Neogobius* fishes in their native range (Bulgaria) with notes on the non-native range in the Danube River

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With 8 figures and 2 tables in the text

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**Abstract:** The recent distribution and abundances of the genus *Neogobius* were studied (using electrofishing and beach seining) within (Bulgaria) and outside (Austria, Slovakia, Croatia) its native range along the longitudinal profile of the Danube River in 2004, 2005 and 2006. The sampling was conducted under normal autumn water levels. CPUE values (number of fish per 100 m shoreline) were calculated and compared between sampling sites. The presence of four *Neogobius* species – *N. kessleri*, *N. fluviatilis*, *N. melanostomus*, and *N. gymnotrachelus* – was confirmed in Bulgaria and Croatia. Though the latter two species did occur in Croatia, they occurred at very low densities (comparing to the densities in the upper and lower Danube), indicating newly established populations. Our results support the hypothesis of disjunct spreading of these species. The presence of *N. fluviatilis* in Austria was not confirmed. In general, the *Neogobius* spp. showed the lowest density within their native range (6 individuals per 100 m shoreline) while their densities were considerably larger outside their native range (18–28 individuals per 100 m shoreline). In addition, *N. kessleri* and *N. melanostomus* were significantly larger at sites of non-native distribution compared to native sites.

## Introduction

A number of studies concerning the occurrence and population density of the four invasive *Neogobius* species (*N. fluviatilis*, *N. gymnotrachelus*, *N. kessleri*, *N. melanostomus*) in the upper and middle Danube was carried out during recent

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