

First records of the tubenose goby *Proterorhinus marmoratus* (Pallas, 1814) in the Baltic Sea

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Received 5 November 2007; accepted in revised form 22 November 2007

Abstract

The Ponto-Caspian invasive gobiid fish *Proterorhinus marmoratus* (tubenose goby) is recorded for the first time from the Baltic Sea area: single specimens were found in the Neva River on 15 August 2006 and the eastern part of the Gulf of Finland on 23 July 2007. This fish is at the initial stage of a Baltic Sea invasion.

Key words: gobiid fish, invasive species, alien species, Baltic Sea, Gulf of Finland

The Baltic Sea in general, and the Gulf of Finland in particular, is one of the possible donor areas from which European aquatic invertebrates have been transported to the Great Lakes of North America (Panov et al. 2003, Panov et al. 2007a). However, the Gulf of Finland is also the recipient of alien species, including the Ponto-Caspian fish - the round goby *Neogobius melanostomus*, which has recently progressively spread into the Gulf of Finland from the western Baltic coasts of Poland and Lithuania (Wandzel 2000, Ojaveer 2006, Orlova and Antsulevich 2006). However, the tubenose goby *Proterorhinus marmoratus* (Pallas, 1814), another Ponto-Caspian gobiid species reported as invading Western Europe (Copp et al. 2005), has not been observed in the Gulf of Finland (e.g. Naseka et al. 2005) until now (Annex, Figures 1 and 2). Interestingly, invasion by *P. marmoratus* into the Gulf of Finland via the Volga-Baltic

inland waterway (the so-called "northern invasion corridor") was predicted in the recent risk assessment by Panov et al. (2007b).

Tubenose goby was originally native to the Black and Azov Seas, the Caspian Sea, the eastern Mediterranean Sea and adjacent estuaries and rivers, where this euryhaline species inhabits a range of salinity conditions from 0 to 33 ppt (Berg 1949, Svetovidov 1964). About two decades ago, this species began to expand its range upstream of Ponto-Caspian area into the rivers and reservoirs of the rivers Volga, Danube and Dnepr, reaching the River Moscow (Naseka et al. 2005, Rizevsky et al. 2007). Similar to some other Ponto-Caspian fishes, the tubenose goby has also invaded the Great Lakes of North America (Dillon and Stepien 2001).

The tubenose goby is a small fish, with a maximum standard length of 6–7 cm (Svetovidov 1964, Reshetnikov 2003), and both specimens



Figure 1. Records of *Proterorhinus marmoratus* in the Neva River and Gulf of Finland



Figure 2. *Proterorhinus marmoratus* specimen from the Neva River, in central St.-Petersburg city (photo by A.E.Antsulevich)

from the Neva were mature despite the small size of the specimen captured in 2007. Judging from the very high environmental tolerance of *P. marmoratus*, especially as regards salinity, this species is likely to disperse throughout the Baltic Sea, though perhaps to a lesser extent in the colder parts thereof.

Acknowledgements

The work was supported by the Committee for Ecological Safety of St.-Petersburg City Administration (State contract # 532).

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Annex

Records with coordinates (latitude, longitude), water depth (in m), date of capture, and standard length (SL, in mm) and body weight (W, g) for single specimens of tubenose goby *Proterorhinus marmoratus* collected in the central part of St.-Petersburg (River Neva) and in Neva Bay (Gulf of Finland), North-Western Russia

Location	Coordinates		Date	Depth	SL	W	Collector
	Latitude °N	Longitude °E					
Neva River	59°56.5'	30°18.4'	15.08.2006	12	59.8	3.980	A. Antsulevich
Neva Bay	59°59.9'	30°03.9'	23.07.2007	1	25.5	0.395	A. Antsulevich