



NAS - Nonindigenous Aquatic Species


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***Proterorhinus semilunaris***

(tubenose goby)

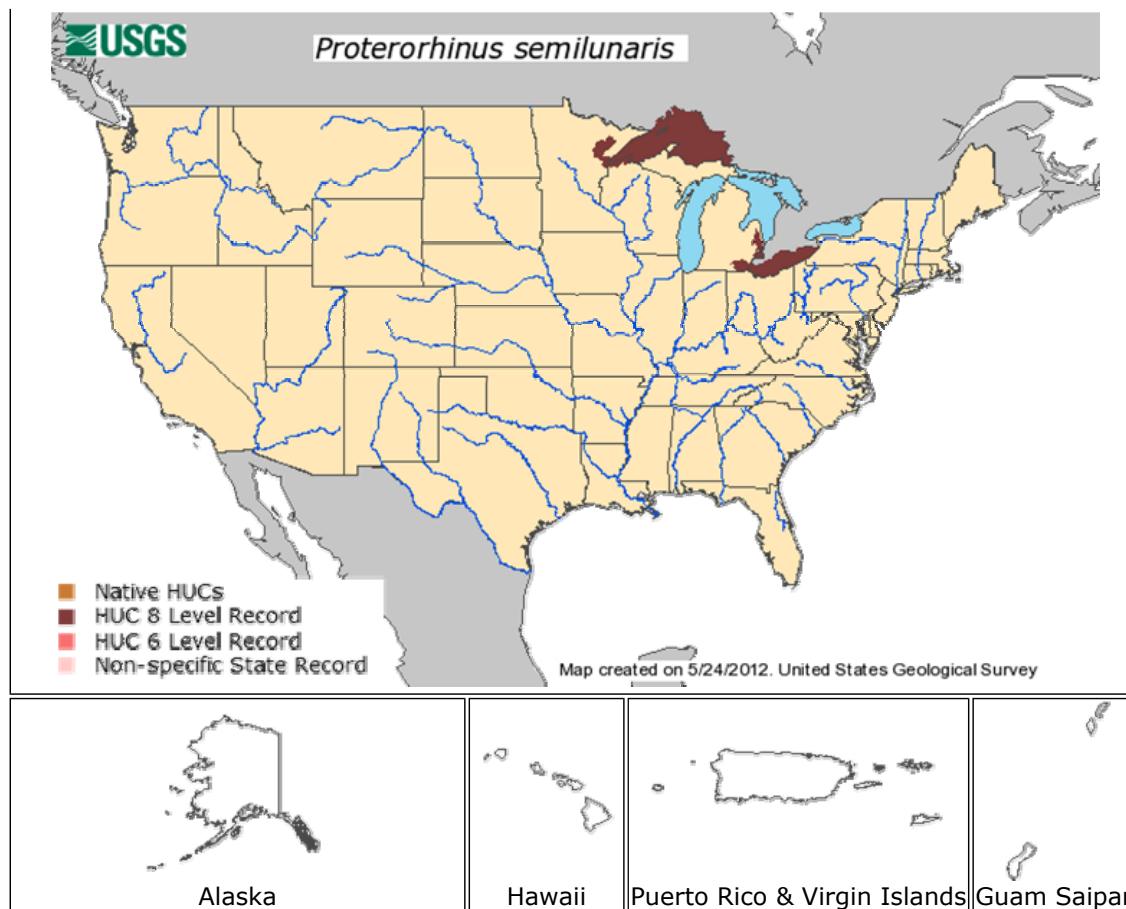
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Piet Spaans

Proterorhinus semilunaris* (Heckel, 1837)*Common name:** tubenose goby**Synonyms and Other Names:** *P. marmoratus* of authors, not of Pallas 1814; See Stepien and Tumeo 2006 for name change.**Taxonomy:** available through ITIS**Identification:** Characteristics were given by Berg (1949) and Miller (1986). This species (along with the round goby *Neogobius melanostomus*) can be distinguished from all other fishes in the Great Lakes by the presence of fused pelvic fins. Tubenose goby can be distinguished from the round goby by its long anterior nostrils and lack of black spot on posterior base of dorsal fin (Miller 1986; Jude 1993). Miller (1986), Crossman et al. (1992), and Jude et al. (1992) provided characteristics to distinguish the round and tubenose gobies.**Size:** 12.7 cm total length**Native Range:** Slightly brackish to freshwater. Eurasia, primarily in rivers and estuaries of the Black Sea basin; also in rivers of northern Aegean (Miller 1986, Freyhof and Naseka 2007; Neilson and Stepien 2009).



Interactive maps: [Point Distribution Maps](#)

Nonindigenous Occurrences: The species was introduced into the St. Clair River, **Michigan**. It was taken in several 1990 collection samples from the cove next to the Detroit Edison Company's Belle River Power Plant and near the intake structures (Jude et al. 1992; Jude 1993; Jude, personal communication; G. Smith, personal communication). As of 1994, it also had been found at the north end of Lake St. Clair at Anchor Bay (Cavender, personal communication). In July 1997, a single tubenose goby was captured in Lake Erie at Port Glasgow, Canada (ROM 70904) (A. Dextrase, personal communication). Since then, additional specimens have been found in the area (Kingsville Marsh) and the species is believed to be established on the northwestern shore of Lake Erie. Tubenose gobies have been collected in the waters of western Lake Erie around Catawba, Kelly's, and the Bass Islands, **Ohio** (Kocovsky et al. 2011). In 2001, a specimen was found in Duluth Harbor of western Lake Superior on the **Minnesota-Wisconsin** border (Vanderploeg et al. 2002). This species is also reported in Lake Huron (Cudmore-Vokey and Crossman 2000). Collected in Swan Creek, Monroe County in 2001 (Bowen, personal communication).

Ecology: The tubenose goby is a benthic omnivores, consuming a wide variety of benthic invertebrates (chironomids, crustaceans, copepods, dipterans, ephemeropterans, ostracods, and trichopterans) and occasionally larval fishes (French and Jude 2001; Adamek et al. 2007).

Generally inhabits shallow (less than 5 m depth), slow-moving, nearshore environments. Prefers areas with abundant aquatic macrophytes, but can also be found in sandy areas (Jude and Deboe 1996).

Means of Introduction: Introduced via ballast water.

Status: This species is believed to be established but rare in the St. Clair River, and in Lake St. Clair, Michigan (Jude 1993; Cavender, personal communication). Eggs attached to vegetation brought up during a trawl in 1994 were brought into a laboratory and hatched (Cavender, personal communication). This species is not spreading rapidly (Vanderploeg et al. 2002), but has undergone some recent expansion (Kocovsky et al. 2011).

May be able to occupy all shallow waters of all five Great Lakes (U.S. EPA 2008) It is predicted by the GARP model to become established in Lake Erie and the shorelines areas of the other Great Lakes. Predictions could not be made for most of the rest of the region. Their distribution around the inshore areas of the Black and Caspian Seas indicates their potential for widespread occupation of inshore habitats where cover, especially plants, occurs in the lower Great Lakes (Jude et al 1992). Recently, tubenose gobies have expanded into the western basin of Lake Erie (Kocovsky et al. 2011).

Impact of Introduction: The tubenose goby does not feed on zebra mussels, as do round gobies (Vanderploeg et al. 2002). However, it has been shown to have a significant overlap in diet preference with rainbow darters (*Etheostoma caeruleum*) and northern madtoms (*Noturus stigmosus*) and may compete with these native fish for food (French and Jude 2001).

Remarks: All tubenose gobies were previously included in a single species, *P. marmoratus*. Recently, *P. marmoratus* was restricted to marine/brackish populations in the Black Sea, and several names were resurrected/created for freshwater populations of tubenose gobies in different regions: *P. nasalis* and *P. semipellucidus* for populations inhabiting the Caspian Sea and Volga River basins (Freyhof and Naseka 2007; Neilson and Stepien 2009); *P. tataricus* endemic to several rivers on the Crimean Peninsula, Ukraine (Freyhof and Naseka 2007); and *P. semilunaris* for tubenose gobies in rivers and estuaries in the Black, Azov, and Aegean Sea basins (Freyhof and Naseka 2007; Neilson and Stepien 2009). *Proterorhinus semilunaris* is the only species of tubenose goby that has been introduced to North America (Stepien and Tumeo 2006; Neilson and Stepien 2009), and has also been introduced into several areas of central and western Europe (e.g., Manné and Poulet 2008; Cammaerts et al. 2011).

Although *P. semilunaris* is widely dispersed among drainages within the Black Sea basin, it is threatened in certain locale. The tubenose goby is considered endangered in Greece in the Ayannis spring near the town of Seres due to pollution and human-induced habitat change (Economidis 1995). In the Greek State, the tubenose goby is protected by law No. 67/1981 (Economidis 1995). This goby may live as long as five years (Jude 1993).

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Revision Date: 3/8/2012

Citation Information:

Fuller, P., L. Nico, E. Maynard, M. Neilson, J. Larson, and A. Fusaro. 2012. *Proterorhinus semilunaris*. USGS Nonindigenous Aquatic Species Database, Gainesville, FL.
<http://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=714> Revision Date: 3/8/2012



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Page Last Modified: Aug 19, 2009