

Family Gasterosteidae

Sticklebacks

A small family comprising five genera and approximately 21 species, distributed across fresh and coastal waters in Eurasia and northern America. They are characterised by the presence of a series of spines in front of the soft dorsal, a single spine in the anal, a pair of pelvic spines (which are absent in many species), and in most species, several bony scutes on the flank and the caudal peduncle. The male constructs a nest of vegetal debris and algae in all species, anchored to the substrate or submerged vegetation. The nest is held together by a thread-like substance secreted by the kidney, which acts as a glue. The male guides the female into the nest, where the eggs are laid and fertilised. The male then guards the nest and subsequently the young. Sticklebacks represent significant species in the fields of behavioural and evolutionary biology. The number of species in *Gasterosteus* has been a topic of discussion. Previously, several populations from northern Eurasia and America had been placed in

Gasterosteus gymnurus. However, this classification has not been accepted and is not supported by large-scale molecular data, suggesting that all Western Palaearctic *Gasterosteus* populations are closely related. **Further reading.** McLennan & Mattern 2001 (phylogeny); Mattern & McLennan 2004 (phylogeny).

Gasterosteus aculeatus

Common name. Threespine stickleback.

Diagnosis. Distinguished from all other freshwater fishes in West Asia by: ● 3 spines in front of dorsal. Size up to 60 mm SL.

Distribution. Localised in Mediterranean basin: Dalaman (southern Aegean) south to Nahr Surit, a coastal river in Syria. Widespread in Black Sea and introduced in Caspian basin. Widespread in Europe, northern Asia, and America.

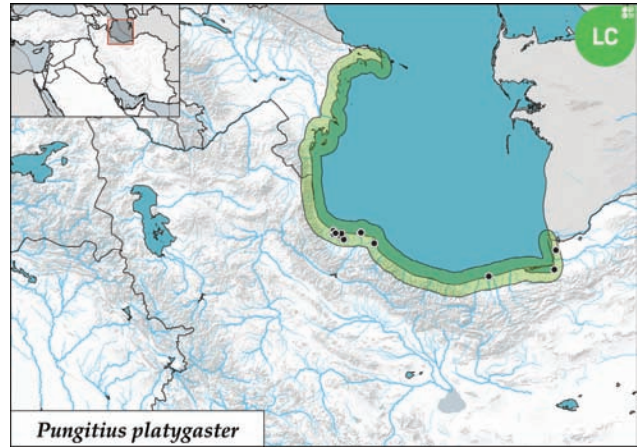
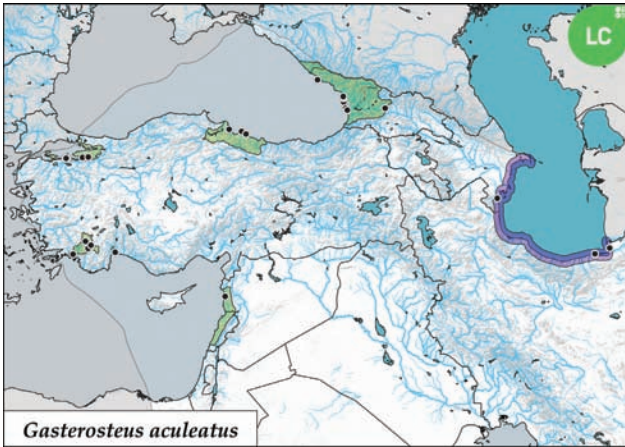
Habitat. Streams, lakes, and ponds with slow to moderate currents, clear water, and sandy bottoms. In Mediterranean basin, usually in spring-fed waters, but also found in other habitats (including brackish waters in Po delta). In Europe, often pelagic at sea.



Gasterosteus aculeatus; Lake Gölhisar basin, Türkiye; immature individual, 35 mm SL.



Gasterosteus aculeatus; Lake Gölhisar basin, Türkiye; nuptial male, ~50 mm SL.



Biology. Only resident populations in West Asia, anadromous and resident in Europe. Spawns in April–May in Spain, May–July in Italy in springs, and earlier in brackish waters, at temperatures above 12°C. Spawns first time at 1 year. During spawning season, male develop a bright red belly, defend their territory against rivals, and build a nest on bottom in relatively shallow areas. They dig a depression into which they place plant material glued together with kidney secretions and covered with sand, leaving only a visible entrance. Several females are led into nest to spawn and are then chased away. Male guard and fan

eggs to provide them with oxygenated water. Spawning behaviour very stereotyped. Eggs hatch in about 10 days, and young are guarded for a few days, after which male abandons nest. Outside spawning season, often pelagic at sea or in large lakes and reservoirs. Usually heavily infested with the tapeworm *Schistocephalus solidus*, especially in warm-water habitats. Feeds mainly on small invertebrates.

Conservation status. LC.

Further reading. Krupp & Coad 1985 (record from Syria); Gandolfi et al. 1991 (biology); Kottelat 1997 (systematics, nomenclature); Paepke 2002a (biology); Mäkinen et al. 2006 (genetics).



Pungitius platygaster; Danube delta, Romania; ~45 mm SL.

Pungitius platygaster

Common name. Ukrainian stickleback.

Diagnosis. Distinguished from *Gasterosteus aculeatus* in West Asia by: ● 7–11 isolated spines in front of dorsal. Size up to 60 mm SL.

Distribution. In West Asia restricted to lower reaches of rivers in Azerbaijan and lower Sefid and associated wetlands in Iran. Native in lower rivers and wetlands draining to northern shores of Black, Caspian, and Aral basins. In Danube drainage as far upstream as Belgrade. Isolated populations in Axios and Aliakmon drainages (Greece). Also in upper Tobol system (Ob drainage), Lake Issyk-Kul basin (Kyrgyzstan), and Sarysu drainage (central Kazakhstan).

Habitat. Marshes and slow-flowing streams with dense vegetation, occasionally enter brackish water.

Biology. Spawns first time at 1 year in spring when temperature reaches 15°C. Territorial during spawning. Males build a nest of filamentous algae and submerged vegetation with a separate entrance and exit. Females lay about 90 eggs. Male guard nest until young swim away a few weeks later. Feeds on benthic invertebrates.

Conservation status. LC.

Further reading. Keivany & Nelson 2000 (systematics); Paepke 2002b (biology).