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Short Communication

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Occurrence of the Non-Native Pumpkinseed *Lepomis gibbosus* in a Reservoir of the Karamenderes Basin (Çanakkale, Türkiye)

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Abstract This study reports the recent discovery of the pumpkinseed *Lepomis gibbosus* in the Bayramiç Reservoir, which is located in the Karamenderes Basin (NW Türkiye). A total of five specimens were captured with a portable electrofishing unit. Total length (TL) and body weight (W) measurements were recorded with an accuracy of 0.1 cm and 0.01 g, respectively. The length and weight ranges of the specimens were 41–88 mm and 7.2–14.3 g, respectively. The presence of this non-native species in the study area could be attributed to either natural expansion or multiple (deliberate/indeliberate) introductions.

Keywords Non-indigenous species · Bayramiç · reservoir · introduction · freshwater fish

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Introduction

Pumpkinseed (*Lepomis gibbosus*), a carnivorous benthopelagic fish native to North America, became widely established as an invasive species in Europe by the late 19th century, as documented by early studies (Copp & Fox, 2007; Lever, 1977; Wheeler & Maitland, 1973). In Türkiye, the pumpkinseed first recorded by Erk'akan (1983) in the Thrace Region (Northern Marmara). Subsequent reports have expanded its known distribution, particularly across the Aegean Region, with contributions from multiple researchers over decades (Ağdamar *et al.*, 2015; Baran & Ongan, 1988; Bay, 2010; Dirican, 2001; İlhan *et al.*, 2020; Keskin *et al.*, 2013; Koca *et al.*, 2005; Özcan, 2007; Özuluğ *et al.*, 2019; Reis *et al.*, 2018; Türker *et al.*, 2022).

This study reports the presence of *L. gibbosus* in the Bayramiç Reservoir, a waterbody hydrologically connected to the Karamenderes Stream.

Materials and Methods

Study area

With an average length of 109 km, the Karamenderes Stream is the longest river in the Biga Peninsula, situated within Çanakkale Province, northwestern Türkiye (Baba *et al.*, 2007). Originating from the northern slopes of Mount İda (Kazdağı), the stream follows a meandering path through three primary geomorphological zones - the Evciler Depression (upper basin), the Ezine-Bayramiç Plain (middle basin), and the Karamenderes Delta (lower basin)- before discharging into the Dardanelles (Akbulut *et al.*, 2009). Constructed between 1986 and 1996 for irrigation, the Bayramiç Reservoir features an earth-filled structure with a total body volume of 4.0 hm³. The reservoir stands 55.5 meters high from its foundation and has a total storage capacity of 86.5 hm³ (Akbulut *et al.*, 2006).

Figure 1

Map (Modified from Partal & Yalçın Özdilek, 2017) and images of the study area (Photograph by Sevan Ağdamar).

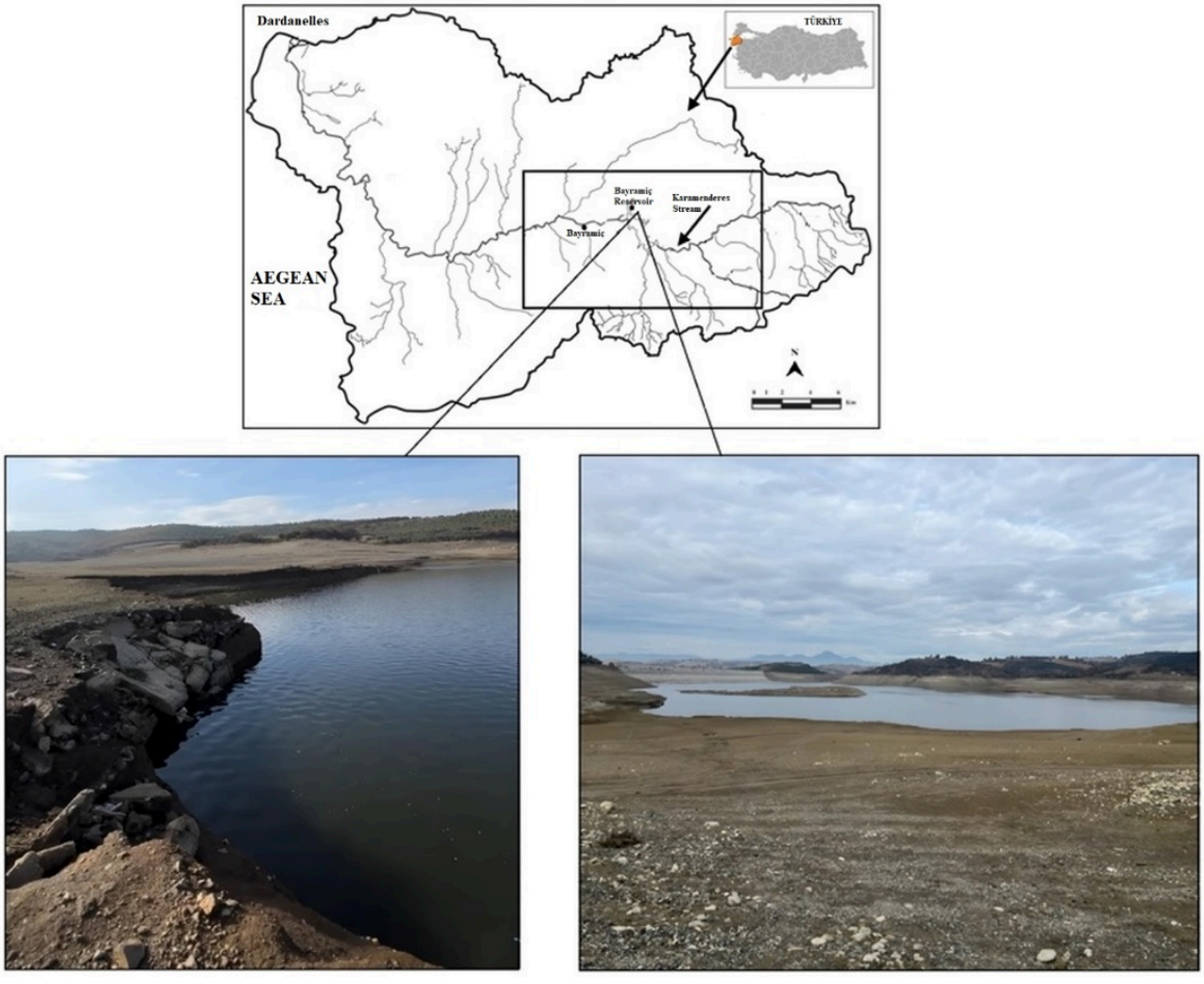

Table 1

Fish data on the sampling location of the pumpkinseed in the Bayramiç Reservoir.

Species	Number of specimens	Length range (TL, mm)	Weight range (W, g)	Coordinate
Lepomis gibbosus	5	41–88	7.2–14.3	39.814180° N, 26.673390° E

Figure 2

The specimen of pumpkinseed caught in the Bayramiç Reservoir, Çanakkale, Türkiye on December 27, 2024 (Photograph by Sevan Ağdamar).

Sampling

The samplings were performed in the Bayramiç Reservoir (Çanakkale, Türkiye) between December 2024 and January 2025 (Figure 1). The specimens were collected using a portable electrofishing device, SAMUS 1000 (Figure 2). Total length (TL) and body weight (W) were measured to the nearest 0.1 cm and 0.01 g, respectively. After examination, the specimens were released back to their habitat. Fish data on the sampling site are listed in Table 1.

Results and Discussion

Because of the field surveys carried out in the study area, five specimens of *L. gibbosus* were collected. The length and weight ranges of the specimens were 41-88 mm and 7.2-14.3 g, respectively (Table 1).

Consequently, this study marks the first documented occurrence of the pumpkinseed within the reservoir system of the Karamenderes Basin. There are several possible scenarios that could explain how this species appeared in the reservoir. In Türkiye, the spread of non-native freshwater fish species has been facilitated by multiple introductions as well as the involvement of local fishermen (Aydın *et al.*, 2011). Given the connection between the Bayramiç Reservoir and the Karamenderes Stream, it is hypothesised that this non-native species may have entered the area through natural dispersal mechanisms or intentional/unintentional introductions. It is advised that thorough on-site studies be carried out in all waterbodies connected to the Karamenderes Stream to evaluate the dispersal of non-native species and their possible effects on the ecosystem.

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Ethics Approval: No specific ethical approval was necessary, and no ethical contraventions occurred in this report.

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