

SHORT COMMUNICATION

The New Maximum Length and Depth of *Lagocephalus guentheri* Miranda Ribeiro, 1915 in the Mediterranean Sea

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Introduction

Since the opening of the Suez Canal in 1869, the coastal ecosystems of the Eastern Mediterranean Sea have been subjected to the establishment of many non-indigenous species, including the pufferfish. Pufferfish are among the most invasive species in the marine environment. As the population of the pufferfish continues to grow, so does the public health risk they pose to humans and animals due to their tetrodotoxin production (Beköz, et al., 2013).

With 19 genera and approximately 130 species within the family Tetraodontidae (Nelson, 2016), six species are found in the eastern Mediterranean (Turan, et al., 2018).

Among them, the diamondback puffer (*Lagocephalus guentheri* Miranda Ribeiro, 1915) is a demersal species and it is distributed in shallow waters (up to 64 m) of tropical and subtropical zones at latitudes between 30°N and 30°S (Keskin, et al., 2011; Froose & Pauly, 2020). It was previously known as *L. spadiceus* in the Mediterranean Sea, before Matsuura et al. (2011) clarified this conflict.

The first report of *L. guentheri* in the Mediterranean Sea was from Egypt in 2015 (Farrag et al. 2016) and afterwards, the species was caught from the Turkish waters of the Aegean Sea (Akyol and Aydın 2016), as well as the Levantine coasts (Ergüden et al. 2017) and off the coasts of Gökova Bay (Çelik et al. 2018). The species occurs in

Abstract

In this study, one specimen of *Lagocephalus guentheri*, the largest individual (536 mm) ever recorded, was obtained from the Iskenderun Bay, Levantine Sea. The specimen was caught from two nautical miles off the Samandağ coast at a depth of 128 m with a commercial trawler. The present finding reports the maximum length and the deepest record of the species for the Mediterranean Sea. Apparently, the distribution of the species in the Mediterranean Sea will expand in the following years.

Keywords: Deepest catch, Maximum length, Lessepsian, Diamondback puffer, Levantine Sea

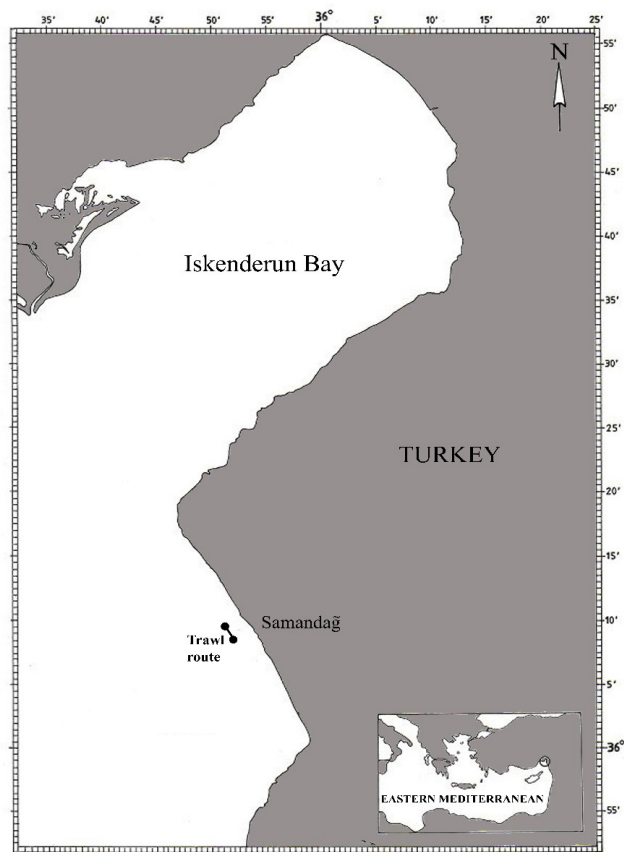


Figure 1. Study area in the İskenderun Bay, Levantine Sea.



Figure 2. The obtained individual of the *L. guentheri* (TL: 536 mm) in the Iskenderun Bay, northeastern Mediterranean Sea.

the Mediterranean Sea as a Red Sea immigrant, and has reached up to the Sea of Marmara (Tuncer, et al., 2008). The present paper provides the largest and deepest record of *L. guentheri* from the Mediterranean Sea.

Material and Methods

A single specimen of *L. guentheri* (Fig. 2.) was caught from two nautical miles off the Samandağ coast ($36^{\circ} 06' 54'' - 35^{\circ} 53' 16''N$, $36^{\circ} 06' 13'' - 35^{\circ} 53' 44''$) at a depth of 128 m from sandy bottom with commercial trawl vessel on 20 January 2015 (Fig. 1). The length of the vessel is 23 m, powered by a 400 HP engine with a codend mesh size of 44 mm. All morphometric features and color of the diamondback puffer agree with the descriptions by Matsuura et al. (2011) and Farrag et al. (2016).

Results and Discussion

L. guentheri is among the most common large-sized pufferfish, together with *L. sceleratus* (Gmelin, 1789) in the eastern Mediterranean Sea. It is commonly found in trawl fishing as discard in the eastern Mediterranean Sea (Yemiskan, et al., 2014; Keskin, et al., 2011). The biggest individual ever captured was measured as 43.1 cm (Başusta, et al., 2013). In the present study, the total length and weight of the caught individual were measured as 536 mm and 1783 g, respectively. The individual is preserved in 50% ethanol solution and stored in the Istanbul University Science Faculty, Hydrobiology Museum (IUSHM 2021-1465).

Mutlu et al. (2021) mentioned that the length of the species shows a declining trend from shallow waters to deeper zones, and the longest individuals were observed at the depths of 75 m. It is not surprising for the individuals to reach a larger average size in such populations occurring in depths shallower than 60 m, due to the fact that there is not any industrial demersal fishing pressure in such depths, regarding the Mediterranean Sea. However, it is very unusual to obtain the species of this size from a depth of 128 m, a depth contour that is known to be under dramatic fishing pressure. The morphometric characters of the captured individual were measured using a digital compass and the measurements are presented in Table 1.

Table 1. Morphometric features of *L. guentheri* off the Samandag coast (northeastern Levantine Sea)

Morphometric features	Value
Weight (g)	1783
Total length (mm)	536
Standard length (mm)	445
Body depth (mm)	88
Head length (mm)	120
Snout length (mm)	60
Eye diameter (mm)	27
Interorbital distance (mm)	62
Dorsal fin base length (mm)	44
Anal fin base length (mm)	36
Pectoral fin base length (mm)	34
Predorsal length (mm)	273
Preanal length (mm)	285
Caudal peduncle (mm)	23

Conclusion

The range expansion, reproduction, growth and feeding biology of the immigrant species should be monitored to better understand their invasion dynamics. Among the many biological parameters, growth parameter provides the most conspicuous information regarding the status of invasive species population.

This study reports the largest and deepest record of *L. guentheri* ever given from the Mediterranean Sea. Driven by the many effects of human pressure and climate change, it seems likely that the distribution and establishment of the species across the Mediterranean Sea will expand in the following years.

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