

Range extension of blue-barred parrotfish *Scarus ghobban* Forsskal, 1775 along the Mediterranean Coast of Turkey

Deniz ERGÜDEN^{*1}, Yusuf Kenan BAYHAN², Sibel ALAGÖZ ERGÜDEN³, Ayhan ALTUN¹

¹Marine Science and Technology Faculty, Iskenderun Technical University, Iskenderun-Hatay, Turkey.

²Kahta Vocational School, Adıyaman University, Kahta, Adıyaman, Turkey.

³Imamoglu Vocational School, Cukurova University, Imamoglu, Adana, Turkey.

*Corresponding author: deniz.erguden@iste.edu.tr

Abstract: A single specimen of blue-barred parrotfish *Scarus ghobban* 442 mm in total length and 1820 g in weight was recorded from the Gazipaşa coast of Turkey. This paper reports the third location along the Mediterranean coast of Turkey inhabited by *S. ghobban*. The presence of this species in the Southwestern coast of Turkey is also being reported for the first time here. Morphometric and meristic characters of our specimen were given and some remarks about the geographical distribution of the species all around the Mediterranean were presented.

Keywords: Alien species, Expansion, Gazipaşa coast, Mediterranean Sea, Turkey.

Introduction

Mediterranean Sea is claimed to be a hotspot of invasion by alien species due to its connection to the Red Sea via the Suez Canal, its heavy maritime traffic, and the effects of climate change (Iglésias and Frotté, 2015).

The blue barred parrotfish, *Scarus ghobban* Forsskal, 1775 is a widespread species occurring in Indo Pacific, Eastern Pacific and Mediterranean (Randall, 1986; Humann and Deloach, 1993). First record of *S. ghobban* in the Mediterranean Sea was made in 2001 from the Shigmona coast (Israel) in the eastern Mediterranean Sea (Goren and Aronov, 2002). Records of presence of the species in the Mediterranean Sea is increasing (Bariche and Saad, 2004; Ioannou et al., 2010; Turan et al., 2014; Filiz and Sevingel, 2014; Apostolopoulos and Karachle, 2016; Yağlıoğlu and Ayas, 2016). Despite the fact that the species is rapidly expanding its range, it has never been reported from the Southwestern coast of Turkey previously. This is the first confirmation of the presence of *S. ghobban* in the Southwestern coast of Turkey. This occurrence suggests westward range extension of the species already distributed in the eastern Mediterranean.

Material and Method

A single specimen of *S. ghobban* (Fig. 1) was caught in

the coast of Gazipaşa, Turkey (Fig. 2) by trammel nets (44 mm of mesh size) at a depth of 30 m on December 24, 2016. All morphometric measurements were made to the nearest 0.01 mm using digital calipers. The weight was measured with a precision scale of 0.1g. The specimen was fixed in 90 % ethanol, and deposited in the collection of Department of Marine Sciences, University of Iskenderun Technical.

Results

The blue barred parrotfish, *Scarus ghobban* caught in the coast of Gazipaşa was an immature female with 442 mm total length and 1820 g weight. Meristic formula of the specimen is given in accordance with Randall (1986) as follows: D, IX-11; A, III+9; P, 15; V; I-5; C, 13. Morphometric measurements were taken according to Turan et al. (2014) and presented in Table 1. Geographical distribution and range extension of the species all around the Mediterranean were summarized in Table 2.

Discussion

The introduction of invasive alien species to the Mediterranean Sea is a major threat to biodiversity, structure and function of the ecosystem. Especially long-term monitoring of coastal habitats and biodiversity in the



Figure 1. *Scarus ghobban* from Gazipaşa coast (Gulf of Antalya), Turkey.



Figure 2. Map showing the capture site (●) of *Scarus ghobban* in the Southwestern Mediterranean coast of Turkey.

Mediterranean is increasingly contributing to the discovery of new alien fish species (Gucu et al., 2010; Mavruk et al., 2017).

The blue-barred parrotfish is an alien species entered to the Mediterranean Sea. Adult specimens of the blue-barred parrotfish inhabit lagoons and seaward reefs (Myers, 1991). They are often solitary but may sometimes occur in small groups. Juvenile groups are observed inshore on covered by algae (Lieske and Myers, 1994) and sometimes enter silty, murky waters (Randall, 1986). Length reports indicated that the males of this species are

commonly around 30 cm and may reach to a maximum total length of 90 cm (Souza and Dias, 1981; Jiménez Prado and Béarez, 2004) Feeding habit of the species is scraping algae from rocks and corals (Human and Deloach, 1993).

Although the establishment of a population of *S. ghobban* cannot be claimed with the occurrence of a single specimen, westward the range extension in the Mediterranean is confirmed with the occurrence of this species in the coast of Gazipaşa the Southwestern Mediterranean, Turkey). Establishment of a permanent

Table 1. Morphometric measurements of the specimen of *Scarus ghobban* from Gazipaşa coast, Turkey.

Measurement	mm	%
Total length (TL)	442.0	-
Fork length	422.0	95.47 TL
Standard length (SL)	369.0	83.48 TL
Head length (HL)	114.34	3.09 SL
Eye diameter	13.60	11.89 HL
Pre-orbital length	38.33	33.52 HL
Body depth	132.31	35.85 SL
Dorsal fin length	206.37	55.92 SL
Pre-anal length	226.0	61.24 SL
Pre-pelvic length	116.51	31.57 SL
Pre-pectoral length	107.29	29.07 SL
Pre-dorsal length	95.33	25.83 SL

Table 2. Distribution of *Scarus ghobban* in the eastern Mediterranean Sea.

Author'(s)	Year	Location	Country	Depth (m)	Length, TL (mm)
Goren and Aronov (2002)	2001	Shiqmona coast	Israel	12	505
Bariche and Saad (2005)	2004	Beirut	Lebanon	31	218
Ioannou et al. (2010)	2010	Nikosia	Cyprus	20	505
Turan et al. (2014)	2013	Iskenderun Bay	Turkey	6	560
Filiz and Sevingel (2014)	2013	Iskele City	North Cyprus	16	460
Yaghoğlu and Ayas (2016)	2015	Yeşilovacık Bay	Turkey	100-110	330
Apostolopoulos and Karachle	2016	Kastellorizo Island	Greece	<1	110
Present study	2016	Gazipaşa	Turkey	5	442

population in the region and it is effect to the environment have to be monitored closely.

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