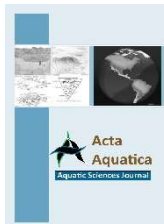




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Second record of the Blacktip Grouper *Epinephelus fasciatus* (Teleostei: Serranidae) in the Mediterranean Sea

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Abstract

A red grouper was caught with a spear gun at depths of 8-10 m at the Alanya Harbor Breakwater. The purpose of this study is to determine this species, which is seen for the first time in the Mediterranean coasts of Turkey, and to add it to the Gulf of Antalya fish fauna. In the species identification, it was determined that this fish was *Epinephelus fasciatus*. *E. fasciatus* caught in Alanya Harbor is the second record for the Mediterranean and the first record for the Turkish coast. This fish became the second lessepsian Serranid species detected in the Gulf of Antalya, and the number of Serranid species with high economic value increased to nine with this species.

Keyword: Blacktip; *Epinephelus fasciatus*; grouper; Gulf of Antalya; record

1. Introduction

Serranids are a family of bony fish found in tropical and subtropical oceans of the world (Nelson 2006). Serranidae members are important species for commercial fisheries. According the Nelson (2006) this family is diverse with about 475 species distributed in 64 genera, all characterized by an operculum with 3 spines and a tip of maxilla exposed when mouth is closed. Another feature of this family is that most grouper are protogynous hermaphrodites. These fish usually live in rocky areas and their food is fish, cephalopod and crustacea.

Important grouper species indigenous to the Mediterranean are *Epinephelus aeneus*, *E. caninus*, *E. costae*, *E. marginatus*, *E. haifensis*, *Mycteroperce rubra*, *Polyprion americanus*. Apart from these species, new grouper species have been included due to exotic migrations (Gökoğlu and Özvarol 2015).

The Gulf of Antalya is one of the regions where Lessepsian migrations are seen in the Mediterranean. More than 60 lessepsian fish species have been recorded in the Gulf of Antalya so far Gerovasileiou et al. (2017). Among these recorded species, there is also orange spotted grouper (*Epinephelus coioides*) (Gökoğlu and Ozvarol 2015). With the registration of this species, the number of important grouper species in the Gulf of Antalya has become eight.

Epinephelus fasciatus is one of the grouper species registered in the Mediterranean. The first record of this species was made by Barich and Heemstra in 2012 from the Lebanese

coast. The specimen was entangled in a trammel net set at a depth of 20–25 m over a soft bottom, scattered with rocks. This fish is one of the most common species living in the Indo-Pacific region and is one of the two most widely distributed species of grouper in the world (Heemstra and Randall,1993). The food of this fish, which is also widely found in the Red Sea, consists of fishes, cephalopods, stomatopod, decapods (Barich and Heemstra 2012).

After this recording, a person hunting with a speargun shot a red grouper at a depth of 7-8 m in the Alanya harbour breakwater. He took a photo of the fish he thought might be a poisonous species and sent it to us. In this article, it is aimed to determine the species of fish caught with spear gun in Alanya Harbour breakwater and to add it to the fish fauna list of the Gulf of Antalya.

2. Materials and Methods

Ümit Demirel, who was hunting with a speargun at the Alanya Harbour breakwater, caught a colorful grouper at a depth of 8-10 m (Coordinate: 36° 32.3114'N; 32° 0.272'E) on September 4, 2021. He took a photo of this fish, which he thought might be a poisonous fish. Later, he sent us this photo and asked to determine the specie of fish.. Specie identification of the fish was made according to Randall and Ben-Tuvia (1983); Heemstra and Randall (1993); Bariche and Heemstra (2012).

3. Results and Discussion

The red grouper caught by shooting with a speargun in Alanya Harbour Pier was identified as *Epinephelus fasciatus*. Species identification of this fish was made through photography. This species differed from the native grouper species of the Mediterranean by its body colour (Figure 1).

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Figure 1. *Epinephelus fasciatus* caught by speargun in the Alanya Harbor breakwater (upper) (Foto: Ümit Demirel).

The first recording of the Indo-Pacific black-tipped grouper *E. fasciatus* in the Mediterranean was made by Bariche and Heemstra (2012) from the Lebanese coast. They also determined the fish from the photo. The feature that Bariche and Heemstra (2012) described for *E. fasciatus*, the pale yellowish-red colour of the body with orange-red bars, the series of conspicuous black triangles behind the tip of dorsal fin spines and the dark reddish-brown dorsal part of head and nape are characteristic features of the species.

The characteristics described by Bariche and Heemstra (2012) for *E. fasciatus* are similar to the fish caught in Alanya Harbor (Figure 1). *E. fasciatus* is a serranidae species in the LC category in the IUCN list (Basith et al 2021). The length and weight of *E. fasciatus*, which was caught on the coast of Alanya, was estimated to be approximately 25 cm and 350 g. *E. fasciatus* is a fish that can reach a total length of 40 cm and up to 2 kg. The size of the fish caught on the coast of Lebanon is around 22 cm, and it is a small fish from our sample. In the article of Bariche and Heemstra (2012), it has been reported that there may be more than one individual of this fish in the Lebanese coasts. This fish we detected in the Gulf of Antalya confirms these thoughts of Bariche and Heemstra.

So far, many organisms have migrated from the Red Sea to the Mediterranean using the Suez Canal (Galil, 2008). It is thought that Red Grouper also made the transition to the Mediterranean using this route. *E. fasciatus* caught in Alanya Harbor is the second record for the Mediterranean and the first record for the Turkish coast. This fish became the second lessepsian Serranidae species detected in the Gulf of Antalya, and the number of Serranidae species with high economic value increased to nine with this species.

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