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A rare occurrence of *Gymnothorax unicolor* (Delaroche, 1809) in the South Eastern Mediterranean, Türkiye

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Keywords

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Abstract

In the present study, one specimen of *Gymnothorax unicolor* (Delaroche, 1809) was reported from the Southeastern Mediterranean waters with visual record during an underwater Scuba survey conducted on October 28, 2018, in the Keldağ/Yayladağı. This brown moray specimen was observed at 12 m in depth at night. This species, which was observed during night feeding in its natural environment, was reported for the first time during underwater observation from Iskenderun Bay. This report also constitutes a rare record of brown moray eel for this region.

Research Article

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1. Introduction

The family Muraenidae is represented by four species belonging to three genera in the Mediterranean waters (Fricke et al. 2023). These genera comprise brown moray eel, *Gymnothorax unicolor* (Delaroche, 1809), moray eel *Gymnothorax reticularis* Blotch, 1795, Mediterranean moray *Muraena helena* Linnaeus, 1758 and Fangtooth moray *Enchelycore anatina* (Lowe, 1838) (Golani et al. 2006; Stern and Goren 2013; Spinelli and Castriota 2017). Of these species, *E. anatina* and *G. reticularis* are non-indigenous species, and two moray species were reported for the first time in 1984 (Ben-Tuvia and Golani 1984) and 2013 (Stern and Goren 2013) from the Mediterranean Sea.

The brown moray *G. unicolor* has also been recorded in the eastern Atlantic, the Azores, Madeira, and Canary Islands, and also throughout the Mediterranean Sea, including the Balearic Islands (Riera et al. 1980; Froese and Pauly 2023). *G. unicolor* is a benthic fish species and prefers temperate waters (Spinelli and Castriota 2017).

Although Turkish checklists mentioned, the brown moray *G. unicolor* was reported (Bilecenoglu et al. 2002; Fricke et al. 2007) in the Mediterranean Sea for the Turkish waters. This species is rare in the southeastern Mediterranean (Iskenderun Bay). Besides, this species was first observed in the present study during nocturnal feeding.

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2. Method

Iskenderun Bay has a vast continental shelf, and the depth within this region does not exceed 90 m (Erguden and Turan 2013). On October 28, 2018, an individual of brown moray *G. unicolor* was observed with a teleost fish species in a rocky crevice in the Iskenderun Bay (Keldag/Yayladağı) at 12 m in depth during the night Scuba dive (Fig. 1). The surface water temperature was 24° C.

The brown moray specimen was photographed, and video recorded using a digital underwater camera during the scuba survey. The morphologic identification for *G. unicolor* (Fig. 2) was made according to Smith and Böhlke (1990).

3. Results

The following morphological features: The body is moderately compressed. The head and snout are short. The posterior nostril is a simple opening without a tube. The dorsal fin originates on the head just before the branchial anteriormost line-lateral pore (Carpenter and De Angelis 2016).

Color: The body and fins are uniform medium to dark brown, the anterior part of the head darker. The mouth is angle dark, fins margins with light yellowish.

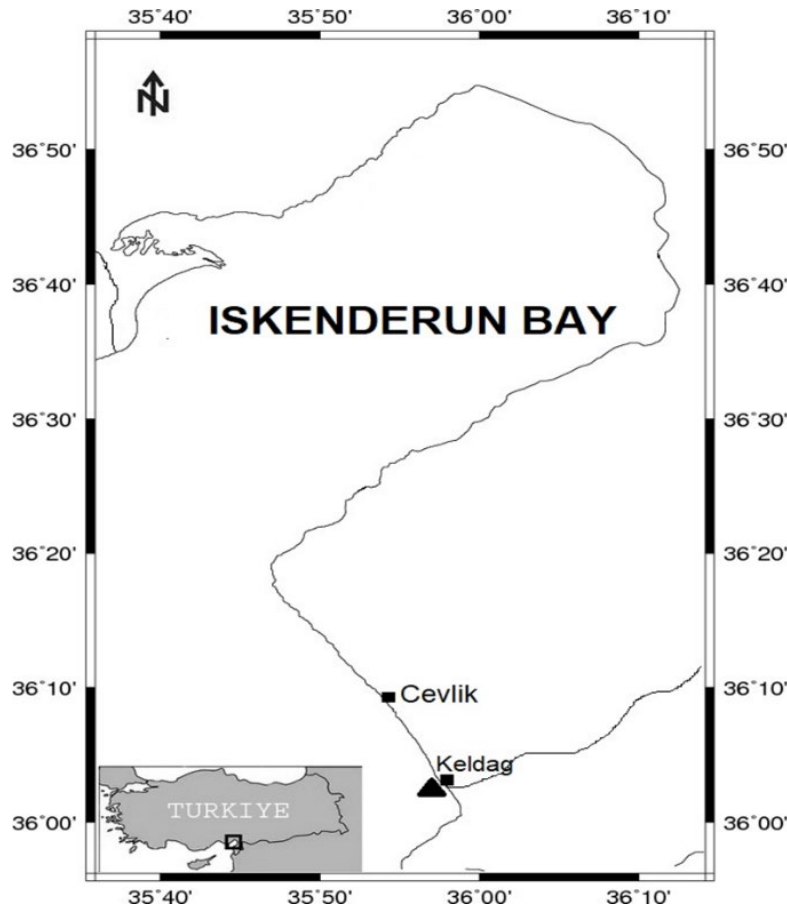


Figure 1. Sampling point (▲) of *Gymnothorax unicolor* (Delaroche, 1809) in Iskenderun Bay, Türkiye



Figure 2. Underwater images of the recorded brown moray *Gymnothorax unicolor* (Delaroche, 1809) in İskenderun Bay (Southeastern Mediterranean, Türkiye)

4. Discussion

The brown moray *G. unicolor* is a solitary nocturnal species. It is commonly found on shelves, on rocky bottoms, gravel, crevices, and small caves at depths of 10-80 m (Bauchot 1986). In this study, a brown moray specimen was found at 12 m depth. This depth range entirely agrees with the literature (Spinelli and Castriota 2017; Spinelli and Vitale 2023).

The typical total length of *G. unicolor* is 80 cm (Didier et al. 2023). The recorded maximum adult moray length is 110 cm for this species (Bini 1970; Didier et al. 2023) in the Mediterranean Sea. It feeds on small crabs, gastropods, and cephalopods (Bini 1970; Bohlke 1981).

In the Mediterranean Sea, the distribution and population of the brown moray eel is poorly known. The

brown moray *G. unicolor* individual observed during night feeding during scuba diving showed docile behavior and did not display an aggressive attitude towards the diver. It is seen that the individual who leaves his hole is looking for prey on the sandy-gravel ground at night (Fig. 2).

Although two moray species belonging to the genus *Gymnothorax* are known in the Mediterranean, *G. unicolor* differs from its other Mediterranean moray species in having a short snout and high dark head, separated from the brown body (Fischer et al. 1981).

G. unicolor is occasionally caught as a bycatch, and this species lives in coastal habitats where it may be vulnerable to anthropogenic impacts. There are no known major threats for this species in the eastern Mediterranean. This species has been assessed globally as Least Concern (LC) on the IUCN Red List (Tighe, 2015; IUCN 2023). However, it has been evaluated as Data Deficient (DD) on the Mediterranean Red List (Papakonstantinou et al. 2011).

In the present study, we report on the rare occurrence of *G. unicolor* specimens from the southeastern Mediterranean coast of Türkiye (Keldağ/Yayladağı). Besides, there is not enough information about the biology of this species observed during night feeding. Therefore, this visual record provides a vital filling gap about this species, which has not been adequately studied in the Mediterranean.

5. Conclusion

The brown moray *G. unicolor* is very rare in the southeastern Mediterranean. Thus, the present study is very important in monitoring, determining, and evaluating the conservation status of this Brown moray, which is Data Deficient “DD” in the Mediterranean Sea.

Author contributions

The article has a single author.

Conflicts of interest

The authors declare that for this article they have no actual, potential, or perceived conflict of interest.

Statement of Research and Publication Ethics

For this type of study formal consent is not required.

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