

First Record of *Lampris guttatus* (Brünnich, 1788) in North-Eastern Mediterranean (Mersin Bay, Turkey)

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Abstract

A single male specimen of the Opah *Lampris guttatus* (Brünnich, 1788) (50 cm in total length and 5 kg in weight) was caught off Erdemli coast, Turkey at a depth of 185 m by a commercial trammel net on 27 May 2017. The present work is the first report of *L. guttatus* from the Northeastern Mediterranean coast of Turkey. All measurements and counts, morphological description and color of the opah agree with previous descriptions. Although *L. guttatus* has distributed at a large area covering both tropical to temperate waters including Mediterranean, this is the first confirmed report of the species from Turkish marine waters including the eastern Mediterranean area.

Keywords: Opah, *Lampris guttatus*, Erdemli coast, Mediterranean Sea.

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Introduction

In recent years, deep-water fishing activity has become a common performance throughout the northeastern Mediterranean area. As a result of this fishing activity either new species have been discovered, e.g. *Epigonus denticulatus* Dieuzeide, 1950 (Erguden et al. 2017), or presence of known species such as *Stomias boa boa* (Risso, 1810), *Nemichthys scolopaceus* Richardson, 1848, and *Heptranchias perlo* (Bonnaterre, 1788) have been confirmed in the region (Bayhan et al. 2015; Erguden and Bayhan 2015).

The genus *Lampris* belonging to the family Lampridae was thought to comprise two species, namely Opah, *L. guttatus* (Brünnich 1788) and Southern Opah, *L. immaculatus* (Gilchrist 1905) (Wiley et al. 1998; Underkoffler et al. 2018). However, the study of Hyde et al. (2014) revealed five distinct, monophyletic lineages within *L. guttatus* based on DNA sequence data. Consequently, Underkoffler et al. (2018) reported three new species; *L. australensis*, *L. incognitus* and *L. megalopsis* for this genus. The family Lampridae is represented in the Mediterranean Sea by single specie viz. *L. guttatus* (Brünnich, 1788). The opah, *L. guttatus* is known to be an oceanic species and apparently prefers a solitary life (Palmer 1986). It generally occupies tropical to temperate waters in the world (Collette 2003). *Lampris guttatus* is distributed throughout the Atlantic including the Mediterranean and Eastern Pacific (Robins and Ray 1986; Quéro and Gayet 1990; Froese and Pauly 2018).

First record of *L. guttatus* in the Mediterranean was made from Ligurian Sea, Italy (Spinola, 1807). Consequent reports were made from southern Tyrrhenian Sea (Andaloro and Di Natale, 1979), central Tyrrhenian Sea (Psomadakis et al. 2006), Greesk Seas (Sinis 2004), Adriatic waters (Dulcic et al. 2005; Sprem et al. 2014) and Albanian waters from Adriatic Sea, Western Mediterranean, (Bego and Kashta 2012). Francour et al. (2010) reported that at least 23 specimens of this species along the French Mediterranean coasts were observed since 2008.

Despite the presence of *L. guttatus* in the checklist of marine fishes of Turkey (Bilecenoglu et al. 2002, 2014), Francour et al. (2010) emphasized that this reports are not direct observations but probably citations from Palmer (1986) whose report was also relied on possibility of the presence of the species in Turkish marine waters due to eastward distribution of this species. Thus, this is the first confirmed report of the species from Turkish marine waters including the eastern Mediterranean area.

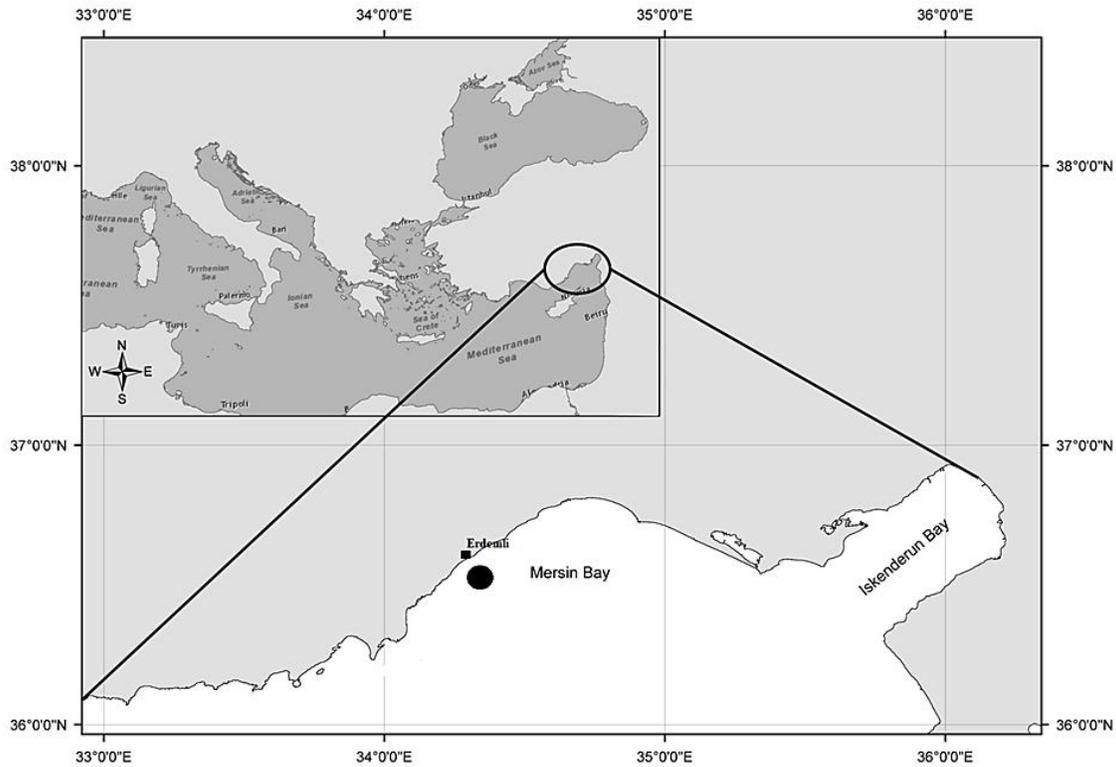


Figure 1. Map showing capture site (●) of *Lampris guttatus* from coast of Turkey in the northeastern Mediterranean Sea.

Material and Methods

A single male specimen of *L. guttatus* was caught off the coast of Erdemli ($36^{\circ}16'31''\text{N}$, $34^{\circ}22'25''\text{E}$) (Fig. 1) at a depth of 185 m by a commercial trammel net on 27 May 2017 (Fig. 2). Sex was determined by macroscopic examination of the gonad. All morphometric measurements were measured to the nearest 0.1 cm using calipers. All measurements and counts, and morphological descriptions of the collected opah was agree with previous descriptions (Hart 1973; Palmer 1986; Francour et al. 2010).

Results

The single recorded male specimen of *L. guttatus* was 50 cm in total length (TL) and weighed 5 kg. The specimen of *L. guttatus* had the following diagnostic characters: Dorsal fin ray I 51, Pectoral fin ray 24, anal fin ray 38, pelvic-fin rays 14, caudal fin ray 30. The measurements were determined as body depth (72.13% of SL), head length (33.88% of SL), pre-dorsal length (53.33% of SL), pre-anal length (55.83% of SL). Eye diameter (26.63%), pre-orbital length (58.73%) and post-orbital length (47.90%) were calculated as the percentage of head length.

Fish with a large, deep, compressed and oval-shaped body. Mouth small and toothless. Dorsal and anal fins long and single, and both retractable into deep grooves. Dorsal fin with a high anterior lobe. Caudal fin broadly lunate; pectoral fins long and falcate; pelvic fins similar to pectoral fins in shape but a little longer. Body covered with very small, smooth scales. Lateral line strongly arched over pectoral-fin base (Hart 1973; Rosenblatt and Johnson 1976).

The dorsum dark steely blue and dorsally shading into green with silver and purple iridescence. Belly rose-red and body covered with silvery spots in irregular rows, with light mottling on caudal and dorsal fins. Coloration around jaws, fins and eyes bright scarlet golden (Hart 1973).



Figure 2. The collected *Lampris guttatus* from Erdemli coast of Mersin-Turkey (northeastern Mediterranean).

Discussion

Lampris guttatus is a bathypelagic species (Riede, 2004) occurring between 0 and 500 m (McMillian et al. 2011) in the Mediterranean and it usually inhabits 50-400 m depths and 8-22°C (Polovina et al. 2008). It is a solitary species preferring mainly warm waters (Briggs 1960; Palmer, 1986). However, during night, *L. guttatus* migrates to shallower waters (about 50 m depth) with higher temperature. Polovina et al. (2008) claimed that the species constantly moves vertically within this broad range. This particular behavior corresponds to the thermoregulation behavior of the species (Golovanov 2006). This species feeds mainly on small cuttlefishes, crustaceans and fishes (Palmer, 1986). Although maximum length (TL) of the species was given as 200 cm (Gon 1990), it is generally around 120 cm (Cervigon et al. 1992). Maximum published weight of the species is 270 kg for a male specimen (Gon 1990). The present study reports total length of the *L. guttatus* as 50 cm for a male specimen.

Lampris guttatus has a worldwide distribution preferring warm oceanic waters (Tortonese 1970). Somot et al. (2006) pointed out that increase of records for this species may be related to the sea temperature increase in the north-western Mediterranean. Similarly Francour et al. (1994) and Francour et al. (2010) claimed that the recent records for this species from the Adriatic and Mediterranean are associated with the increase in sea water temperature as a result of global climate change.

Although *L. guttatus* is included in the checklists of marine fishes of Turkey, there were no capture record of this species from the corresponding area. This article is the first substantiated report of this species from Mersin coast of Turkey (north-eastern Mediterranean). In the region, the surface temperature is usually higher than 19.0°C in spring months 2018 (MGM 2018). The cause of occurrence of this species could be related to the changes in environmental factors such as increase in sea water surface temperature in the Mediterranean Sea. *Lampris guttatus* is known as an excellent food fish with a quite tasty meat. It is marketed as fresh and frozen (Collette 1978). This species is listed as Least Concern (LC) in the Global Red List by the International Union for Conservation of Nature (IUCN) since 2015 (Smith-Vaniz et al. 2015; IUCN 2018). Despite the occurrence of this species in the Mediterranean, its population structure and possible threats are not well-established yet. Hence, this species is considered as Data Deficient (DD) in the Mediterranean Sea (Abdul Malak et al. 2011).

The present record is highly significant because this study is the first substantiated record of *L. guttatus* from the southeastern coast of Turkey, northeastern Mediterranean. This is also the first confirmation of a lamprid species in the Mediterranean marine waters of Turkey.

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