

## First report of thresher sharks (Alopiidae) in the Gulf of Antalya

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### Introduction

Generally, Alopiidae family members are active, strong-swimming, pelagic, coastal and deep-water sharks. They are characterized by a very long upper caudal lobe. They have two dorsal fins; the second dorsal and anal fins are very small. They can be found in all warm oceans and mainly feed on small to moderately large schooling fishes and squids (Compagno, 2002).

Up to now, only three species have been described in family Alopiidae with two of them *Alopias vulpinus* (Bonnaterre, 1788) and *Alopias superciliosus* (Lowe, 1839) reported from the Mediterranean Sea (Golani *et al.*, 2006). The third species (*A. pelagicus*) is reported from the Pacific Ocean (Compagno, 2001; Golani *et al.*, 2006; Gowthaman *et al.*, 2014).

*Alopias superciliosus*: This species is highly migratory species and can be found up to 750 m depths. It is distributed in the tropical and temperate seas (from Nassau and the northern coast of Cuba; northward to off New Jersey and Long Island; end the Gulf of Mexico South to Venezuela; off southern Brazil and eastern Atlantic, Mediterranean and Indo-Pacific) (Compagno, 2002). *A. superciliosus* was reported three times (first species from the Sivrice Coast in 2006, second species from the Fethiye Coast in 2011, third species from the Silivri Coast in 2011) from the Mediterranean coast of Turkey (Kabasakal *et al.*, 2011).

*Alopias vulpinus*: This species is epipelagic, swims usually close to the surface but was recorded at 350 m (Golani *et al.*, 2006). It feeds mainly on schooling fishes such as sardines,

anchovies, mackerels, carangids etc. The thresher shark is found from tropical seas to the cold temperate waters in almost worldwide. In the eastern Atlantic Ocean it is known to exist from Norway and the British Isles to Cape Province, South Africa, including the Mediterranean Sea. It is also found throughout the western Atlantic, Pacific and Indian Oceans (Compagno, 2001).

An overview of fisheries in the Gulf of Antalya, longline is used for swordfish fishing. During swordfish fishing by longline sometimes non-target fish species were caught (Gökoğlu and Oray, 1992).

Recently all the thresher shark species were reported as vulnerable for global assessment by the The IUCN Red List of Threatened Species 2009 (Amorim *et al.*, , 2009). According to IUCN, there are no data on these fishes in the Mediterranean Sea. This study aimed to improve the lack of data on these species in the Mediterranean Sea.

### Materials and methods

The specimens were caught in 2015 by a local swordfish longline and commercial trawl operation in the Gulf of Antalya (Fig. 1). Samplings of fishes were made by a bottom trawl net having 22 mm mesh size. Trawl shots were performed at depths varying from 600 to 700 m for 2 h each time. Swordfish longline vessel about was 8-10 m in the length and there were two persons every vessel. Every longline was 12 000 m in length and 300 hooks (Number 2 hook). Mackerel was used

as bait of longline. Longline was set at sunset and were hauled at sunrise.

The fresh specimens were photographed (Fig. 2), measured as total length (TL in cm) and weighed as total weight (TW in g) on a flat surface, using a tape measure and a portable scale. Species were identified according to Compagno (1984), Serena (2005) keys.

### Results and discussion

In this study Alopiidae species and also some of non-target fishes were caught during the fishing activities. Four specimens of *A. superciliosus* and one specimen of *A. vulpinus* were caught in the Gulf of Antalya. Three *A. superciliosus* and *A. vulpinus* were caught by the swordfish longline and the other *A. superciliosus* was caught in the commercial trawl operation. The total length and weight of fish caught were measured. These values were shown in the Table 1.

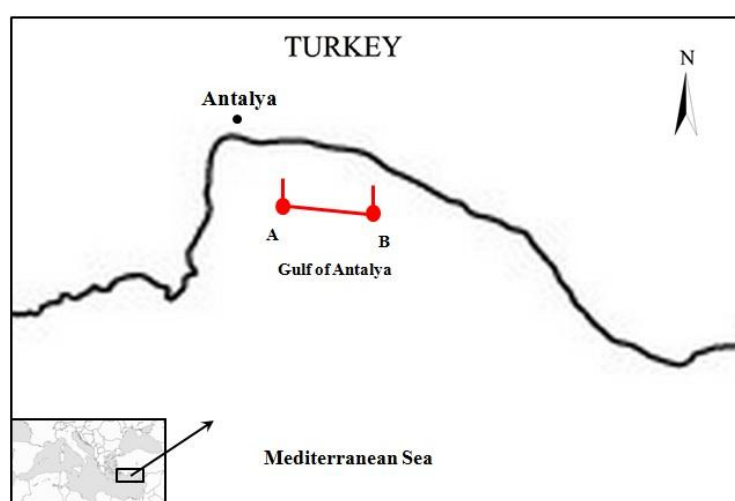


Figure 1: Trawl operation and swordfish longline area in the Gulf of Antalya.



Figure 2: *Alopias superciliosus* caught by the swordfish longline in the Gulf of Antalya.

Table 1: Data on some biological properties of fish caught and fishing dates.

No.	Species	Sex	Total length (cm)	Weight (g)	Date	Caught Method
1.	<i>A. superciliosus</i>	F	186	19000	19 March 2015	Long line
2.	<i>A. superciliosus</i>	M	180	15500	19 March 2015	Long line
3.	<i>A. superciliosus</i>	M	293	57000	12 April 2015	Bottom Trawl
4.	<i>A. superciliosus</i>	F	299	65000	15 July 2015	Long line
5.	<i>A. vulpinus</i>	F	450	226000	17 July 2015	Long line

There was no data on thresher sharks in the Gulf of Antalya until this study. Only Gökoğlu and Oray (1992) reported *A. vulpinus* caught by the swordfish longline in the Gulf of Antalya. According to Serena (2005) and

Kabasakal (2007), the big eyed thresher shark (*A. superciliosus*) is very rarely captured species in the Mediterranean Sea. All members of the genus *Alopias*, the thresher sharks are listed as vulnerable globally because of their

declining populations. These downward trends are the result of a combination of slow life historical characteristics, hence low capacity to recover from moderate levels of exploitation and high levels of largely unmanaged and unreported mortality in target and by catch fisheries (Amorim *et al.*, 2009).

Kabasakal (2007) reported that twenty-one Alopiid sharks including, two bigeye thresher shark (*A. superciliosus*) and 19 common thresher sharks (*A. vulpinus*) were incidentally captured in the coastal water of Turkey. Two specimens of (*A. superciliosus*) were caught in the Gulf of Gökova (Kabasakal and Kabasakal, 2004) and Silivri (Sea of Marmara). As for *A. vulpinus*, only one specimen was caught in the Mediterranean, the others were caught in the Black, Marmara and Aegean Seas. Also, one specimen of *A. vulpinus* was reported from Iskenderun Bay (Ergüden *et al.*, 2015).

Gulf of Antalya is one of the most important regions for swordfish fishing which is caught by longline. In this study, one species of *A. superciliosus* was caught by the commercial trawl vessel and reported to the CIESM (The Mediterranean Science Commission). In 2015, a revision of the Red List for European Marine Fishes classified both *A. vulpinus* and *A. superciliosus* as vulnerable (Amorim *et al.*, 2009).

Section 23 of Council Regulation (EU) 2015/104 of 19 January 2015 prohibits EU vessels in the ICCAT (The International Commission for the Conservation of Atlantic Tunas)

convention area either “Retaining on board, transshipping or landing any part or whole carcass of big eye thresher sharks (*A. superciliosus*) in any fishery” of “to undertake a directed fishery for species of thresher sharks of the *Alopias spp.*”.

Council Regulation No. 1185/2003 prohibits the removal of shark fins of these species, and subsequent discarding of the body. This regulation is binding on EC (European Commission) vessels in all waters and non-EC vessels in Community waters (ICES, 2015).

Five Alopiid sharks were reported firstly by this study from the coast of Turkey. During the swordfish fishing, these Alopiid species can be catch under consideration in the future. These fishes are caught alive when the swordfish fishing by the longline must be released. Consequently, adding new updated data on species belonging to the Alopiida family in this study is very important in the Mediterranean.

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