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A NEW CAPTURE RECORD OF *ALOPIAS SUPERCILIOSUS* LOWE, 1841 FROM THE TURKISH COAST (NORTHEASTERN MEDITERRANEAN)

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ABSTRACT

A single male bigeye thresher, Alopias *superciliosus, was incidentally captured by a commercial trawler. The specimen measured 310 cm in total length and weighed 156.0 kg. The capture occurred on 16 January 2025 in the coastal region of Akyatan, at a depth of 30 m. Prior to this study, 15 records of* A. superciliosus *had been documented along the northeastern Mediterranean coast of Türkiye. This study contributes to the existing body of knowledge and marks a notable milestone by documenting the first recorded occurrence of an adult male bigeye thresher in the northeastern Mediterranean, specifically along the Akyatan coast of Türkiye. It also presents a comprehensive analysis of the specimen's morphometric measurements in comparison with existing Mediterranean records.*

Key words: bigeye thresher, Alopiidae, record, Akyatan coast, Turkiye

NUOVA CATTURA DI *ALOPIAS SUPERCILIOSUS* LOWE, 1841 LUNGO LA COSTA TURCA (MEDITERRANEO NORD-ORIENTALE)

SINTESI

Un singolo esemplare maschio di Alopias superciliosus *è stato catturato accidentalmente da un peschereccio commerciale. L'esemplare misurava 310 cm di lunghezza totale e pesava 156,0 kg. La cattura è avvenuta il 16 gennaio 2025 nella regione costiera di Akyatan, a una profondità di 30 m. Prima d'ora erano stati documentati 15 esemplari di* A. superciliosus *lungo la costa mediterranea nord-orientale della Turchia. Questo studio contribuisce alle conoscenze esistenti e segna una pietra miliare notevole, documentando la prima presenza registrata di un maschio adulto di squalo volpe occhione nel Mediterraneo nord-orientale, in particolare lungo la costa di Akyatan in Turchia. Viene inoltre presentata un'analisi completa delle misure morfometriche dell'esemplare rispetto ai dati esistenti nel Mediterraneo.*

Parole chiave: squalo volpe occhione, Alopiidae, cattura, costa di Akyatan, Turchia

INTRODUCTION

The family Alopiidae comprises three globally distributed species: the bigeye thresher (*Alopias superciliosus*), the common thresher (*Alopias vulpinus*), and the pelagic thresher (*Alopias pelagicus*) (Ebert *et al*., 2021; Froese & Pauly, 2025). Of these shark species, *A. superciliosus* and *A. vulpinus* have been recorded in the Mediterranean Sea and along the Turkish coastline, while *A. pelagicus* is distributed in the Indo-Pacific Ocean (Ebert *et al*., 2021).

Fig. 1: Map showing the capture site (•) of the *A. superciliosus* ***along the Akyatan coast, Türkiye.***
Sl. 1: Zemljevid obravnavanega območja z lokaliteto ulova (•) primerka vrste *A. superciliosus* ***vzdolž obale Akyatan, Turčija.***

The bigeye thresher, *A. superciliosus*, is a large shark from the order Lamniformes. It is highly migratory and widely distributed in warm temperate and tropical waters (Compagno, 2001). This species occurs both in the pelagic and benthopelagic zones of the continental shelf at depths ranging from 0 to 955 m, with a higher prevalence in the 0–100 m range (Compagno, 2001; Coelho *et al*., 2015). *A. superciliosus* primarily feeds on teleost fishes (lancetfish, herring, mackerel, etc.) and small billfishes in the pelagic zone, as well as on bottom fish such as the European hake and squid in the benthic zone (Compagno, 1984).

In the Mediterranean Sea, the bigeye thresher shark was first reported from Italian waters (Cigala-Fulgosi, 1983), with subsequent records extending from the west to the east of the Basin (Corsini-Foka & Sioulas, 2009; Kabasakal *et al*., 2011; Farrag *et al*., 2017; Kabasakal *et al*., 2017; Kleitou *et al*., 2017; Lanteri *et al*., 2017; Ergüden *et al*., 2020).

The first documented sighting of the bigeye thresher in Turkish waters occurred along the Marmaris and Gökova coasts in 2005 (Mater, 2005; Clo *et al*., 2008), followed by a recorded capture in Silivri (Kabasakal & Karhan, 2008). Subsequent reports include records from Silivri, Sivrice, and Fethiye in 2011 and 2016 (Kabasakal *et al*., 2011), from the Gulf of Antalya in 2015 and 2016 (Gökoğlu *et al*., 2017; Kabasakal, 2017; Lanteri *et al*., 2017), as well as from Tasucu and off Fethiye (Ayas *et al*., 2020; Akyol *et al*., 2020). The most recent documented capture in Turkish waters was an adult female incidentally caught off the coast of Çevlik in Iskenderun Bay (Ergüden *et al*., 2020).

The present paper reports the first incidental capture of an adult male bigeye thresher, *A. superciliosus*, along the Akyatan coast (northeastern Mediterranean, Türkiye) and the morphometric measurements of the specimen.

MATERIAL AND METHODS

The bigeye thresher was captured at night by a commercial trawler at a depth of 30 m on the sandy-muddy bottom of the Akyatan coast (at

Fig. 2: The *A. superciliosus* ***recorded along the Akyatan coast, northeastern Mediterranean Sea (scale bar: 0.3 cm).***
Sl. 2: Primerek vrste *A. superciliosus*, ***ujet vzdolž obale Akyatan, severovzhodno Sredozemsko morje (merilo: 0,3 cm).***

Tab. 1: Comparison of selected morphometric measurements of the captured** A. superciliosus **with six previously reported specimens from the Mediterranean Sea. Abbrevations; TL (total length), FDFL (first dorsal fin length), FDFBL (first dorsal fin base length), PFL (pectoral fin length), PFBL (pectoral fin base length), VFL (ventral fin length), VFBL (ventral fin base length), DFVF (distance between dorsal-fin origin and ventral fin origin), PFVF (distance between pectoral fin origin and ventral fin origin), PDL (predorsal length), PVL (preventral length), PPL (pre pectoral length), IOS (Inter orbital space), EY (Eye length), EH (Eye height), MW (mouth width, ML (Mouth length), TailL (tail length), CL (Clasper length). *Lanteri et al. (2017) did not provide percentage TL values in their records on the collected head and pectoral fins of the studied specimen.

Tab. 1: Primerjava izbranih morfometričnih meritev ujetega primerka vrste** A. superciliosus **s šestimi predhodno ugotovljenimi primerki iz Sredozemskega morja. Okrajšave; TL (totalna dolžina), FDFL (dolžina prve hrbtne plavuti), FDFBL (dolžina korena prve hrbtne plavuti), PFL (dolžina prsne plavuti), PFBL (dolžina korena prsne plavuti), VFL (dolžina trebušne plavuti), VFBL (dolžina osnove trebušne plavuti), DFVF (razdalja med začetkom hrbtne plavuti in začetkom trebušne plavuti), PFVF (razdalja med začetkom prsne plavuti in začetkom trebušne plavuti), PDL (predorzalna dolžina), PVL (preventralna dolžina), PPL (prepektoralna dolžina), IOS (medočesni prostor), EY (dolžina oči), EH (višina oči), MW (širina ust), ML (dolžina ust), TailL (dolžina repa), CL (dolžina klasperja). *Lanteri in sod. (2017) v svojih zapisih niso navedli vrednosti TL v odstotkih za glavo in prsne plavuti proučevanega osebka.

Character (cm)	This study	Corsini-Foka & Sioulas (2009)	Kabasakal *et al.* (2011)	*Lanteri *et al.* (2017)	Farrag *et al.* (2017)	Ayas *et al.* (2020)	Ergüden *et al.* (2020)
Location	Karataş coast	Dodocenase waters	Fethiye coast	Ligurian Sea	Egyptian coast	Tasucu coast	Çevlik coast
Sex	Male	Male	Female	Female	-	Female	Female
TL	310.0	310.0	450.0	-	180.0	240.0	472.0
FDFL	25.0 (8.06 %TL)	27.0 (8.7 %TL)	41.0 (9.1 %TL)	-	-	17.9 (7.4 %TL)	40.0 (8.5 %TL)
FDFBL	22.0 (7.9 %TL)	21.0 (6.8 %TL)	32.0 (7.1 % TL)	-	-	13.6 (5.6 %TL)	32.0 (6.8 %TL)
PFL	60.0 (19.3 %TL)	62.0 (20.0 %TL)	82.0 (18.2 %TL)	25.4	35.0 (19.4 %TL)	51.5 (21.4 %TL)	83.0 (17.5 %TL)
PFBL	25.0 (8.06 %TL)	21.0 (6.8 %TL)	30.0 (6.7 %TL)	-	-	20.1 (8.4 % TL)	40.0 (8.5 % TL)
VFL	26.0 (8.04 %TL)	26.0 (8.4 %TL)	39.0 (8.7 %TL)	-	-	20,6 (8.6 %TL)	37.0 (7.8 % TL)
VFBL	25.0 (8.06 %TL)	21.0 (6.8 %TL)	30.0 (6.7 %TL)	-		15.4 (6.4 %TL)	30.0 (6.4 %TL)
DFVF	36.0 (11.6 %TL)	23.0 (7.4 %TL)	-	-	-	17.8 (7.4 %TL)	-
PFVF	57.0 (18.4 %TL)	77.0 (24.8 %TL)	-	-	-	68.9 (28.7 %TL)	204.0 (43.2 %TL)
PDL	97.0 (31.3 %TL)	94.0 (30.3 %TL)	128.0 (28.4 %TL)	-	57.0 (31.6 %TL)	87.7 (36.5 %TL)	-
PVL	124.0 (40.0 %TL)	118.0 (38.1 %TL)	165.0 (36.7 %TL)	-	70.0 (38.8 %TL)	105.3 (43.9 %TL)	-
PPL	52.0 (16.7 %TL)	45.0 (14.5 %TL)	55.0 (12.2 %TL)	47.7	29.0 (16.1 %TL)	43.7 (18.2 %TL)	-
IOS	13.1 (4.2 %TL)	-	-	7.4	-	-	-
EL	7.6 (2.4 %TL)	-	-	7.4	-	-	-
EH	5.4 (1.7 %TL)	-	-	4.7	-	-	-
MW	11.0 (3.5 %TL)	-	-	10.4	-	-	20.0 (4.2 %TL)
ML	8.0 (2.6 %TL)	-	-	7.3	-	-	-
TailL	160.0 (51.6 %TL)	143.0 (46.1 %TL)	217.0 (48.2 %TL)	54.4	-	103.8 (43.3 %TL)	240.0 (50.5 %TL)
CL	30.2	-	-	-	-	-	-

36°28'20.52" N, 34°55'20.99" E) on 16 January 2025 (Fig. 1). Upon being brought aboard, the specimen was found deceased. Since the capture occurred nocturnally, the individual was stored in a refrigerated vessel by the crew until its delivery to the laboratory the following day. Upon arrival at the laboratory, the specimen was immediately examined and identified. It was then preserved at the Museum of the Faculty of Fisheries, Cukurova University, registered under catalogue number CSFM-PIS/18.01.2025 (see Figs. 2 and 3).

The morphometric measurements of the captured *A. superciliosus* were recorded to the nearest 0.01 mm using a calliper. All subsequent morphological descriptions and coloration of the specimen were consistent with those previously documented for this species by Gruber & Compagno (1981) and Compagno (2001).

Nineteen morphometric measurements were taken, including total length (TL), first dorsal fin length (FDFL), first dorsal fin base length (FDFBL), pectoral fin length (PFL), pectoral fin base length (PFBL), ventral fin length (VFL), ventral fin base length (VFBL), distance between dorsal fin origin and ventral fin origin (DFVF), distance between pectoral fin origin and ventral fin origin (PFVF), predorsal length (PDL), preventral length (PVL), prepectoral length (PPL), interorbital space (IOS), eye length (EYL), eye height (EYH), mouth width (MOW), mouth length (MOL), tail length (TAIL), and clasper length (CL). The complete list of morphometric measurements can be found in Table 1.

RESULTS AND DISCUSSION

The male bigeye thresher specimen measured 310 cm in total length (TL) and weighed 156.0 kg. Several morphometric measurements (expressed as percentages of TL) were recorded as follows: first dorsal fin length (FDFL), 8.06%; first dorsal fin base length (FDFBL), 7.90%; pectoral fin length (PFL), 19.30%; pectoral fin base length (PFBL), 8.06%; ventral fin length (VFL), 8.04%; ventral fin base length (VFBL), 8.06%; distance between dorsal fin origin and ventral fin origin (DFVF), 11.60%; distance between pectoral fin origin and ventral fin origin (PFVF), 18.40%, predorsal length (PDL), 31.3%, preventral length (PVL), 40.00%, prepectoral length (PPL), 16.70%; and tail length (TAIL), 16.00% (Tab. 1).

A comparison of morphometric measurements was made between the male specimen from this study and available Mediterranean records of both male and female bigeye thresher specimens (Tab. 1). Table

Fig. 3: Head view of the captured** A. superciliosus**.
Sl. 3: Glava ujetega primerka vrste** A. superciliosus**.

Tab. 2: Historical capture records of *A. superciliosus* ***in Turkish Mediterranean waters.***
Tab. 2: Zgodovinski podatki o pojavljanju vrste *A. superciliosus* ***v sredozemskih vodah Turčije.***

References	Locality	Date	Number of Specimen	Depth	Fishing Gear	Sex	Length (cm) /Weight (kg)
Mater (2005)	Gökova	23 May 2005	1	12	Shrimp net	-	350/150.0
Clo *et al.* (2009)	Marmaris	April 2004	1	-	Gill net	-	-/160.0
Kabasakal & Karhan (2008)	Silivri	23 February 2007	1	-	Purse-seine	-	450/-
Kabasakal *et al.* (2011)	Fethiye	28 February 2011	1	110	Trammel net	Female	430/300.0
Kabasakal *et al.* (2011)	Silivri	02 July 2011	1	-	Purse-seine	-	250/65.0
Kabasakal *et al.* (2011)	Sivrice	21 May 2016	1	100	Stationary net	-	400/-
Gökoglu *et al.* (2017)	Antalya	19 March 2015-15 July 2015 19 March 2015-12 April 2015	2 2	600-700	Bottom trawl- Long-line	Female Male	180-299/19.0-65.0 180-293/15.5-57.0
Kabasakal (2017)	Antalya	22 December 2017	1		Pelagic swordfish longline	Female	342.4/-
Lanteri *et al.* (2017)	-	25 February 2013	1	-	-	-	370/250.0
Lanteri *et al.* (2017)	Yeşilköy	13 March 2013	1	-	-	-	200/110.0
Lanteri *et al.* (2017)	Yediburunlar	15 July 2013	1	-	-	-	500/395.0
Lanteri *et al.* (2017)	Antalya	15 April 2015	1	-	-	-	-
Akyol *et al.* (2020)	off Fethiye	23 September 2012	1	1100	Pelagic longline	Female	150/30.2
Ergüden *et al.* (2020)	Çevlik	9 April 2019	1	20	Purse seine	Female	472/400.0
Ayas *et al.* (2020)	Taşucu	2 January 2020	1	25	Trammel net	Female	240/48.0
This study	Akyatan	16 January 2025	1	30	Bottom trawl	Male	310/156.0

2 presents detailed capture data for the incidentally caught specimen, including: locality, capture date, depth, region, fishing gear, sex, length, and weight, along with comparable data from previous records in Mediterranean waters.

The following characteristics are diagnostic for this shark species: head flattened dorsally and ventrally; lateral grooves situated above the branchial region; snout bulbous; eyes large and extending into the dorsal part of the head; first dorsal fin positioned more posteriorly, with the midpoint of its origin markedly closer to pelvic fin origin; dorsal extension of caudal fin approximates precaudal length; pectoral fins notably pointed; upper lobe of the caudal fin characterised by elongated, strap-like appearance nearly equalling the length of the remainder of the body; lower lobe comparatively short but well-developed (Compagno, 1998).

In terms of coloration, the dorsolateral region of the specimen exhibited a brownish-grey hue and the ventral side a whitish tone with greyish undertones. The posterior margins of the pectoral, pelvic, and first dorsal fin showed dusky pigmentation.

The bigeye thresher is readily distinguishable from the other two thresher shark species by its notably large eyes and the prominent lateral groove that originates behind the eyes and extends along both sides of the head above the gill openings (Ebert *et al*., 2021). The specimen examined in this study was consistent with the descriptions of *A. superciliosus* reported in the existing literature (Gruber & Compagno, 1981; Compagno, 1984; Compagno, 2001).

In previous studies, maximum total length (TL) values for bigeye thresher sharks have been reported as 484 and 488 cm (Ebert & Stehmann, 2013; Froese & Pauly, 2025), with Lanteri *et al*. (2017) documenting specimens reaching up to 500 cm TL. Sexual maturity is reported to occur at 245–300 cm TL in males and 282–355 cm TL in females (Chen *et al*., 1997). Size at birth ranges from 64 to 140 cm TL (Bauchot, 1987; Golani, 1996). The gestation period of *A. superciliousus* is 12 months, with an average litter size of 2–4 pups, typically two. The species is believed to have an annual reproductive cycle (Compagno, 1984; Compagno, 2001). Fernandez-Carvalho *et al*. (2011) report the maximum age at 22 years for females and 17 years for males. Based on its size and developmental characteristics, the specimen presented herein was likely a newly matured adult male.

Table 1 presents a comparative analysis of morphometric measurements from six selected Mediterranean studies alongside our findings. While our Akyatan male specimen shares identical TL (310 cm) with the male specimen from the Dodecanese region reported by Corsini-Foka & Sioulas (2009), it shows slightly lower values for FDFL, PFL, and PFVF, but exceeds the Dodecanese specimen in other measured parameters. These observed variations may reflect various ecological and biological factors, including feeding ability, habitat, environmental conditions, gonadal maturity, etc.

In the Mediterranean Sea, *A. superciliosus* is considered particularly susceptible to overfishing. In 2014 and 2016, thresher sharks were listed in Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), reflecting the Parties' commitment to regional conservation efforts. Additionally, thresher sharks were included in Appendix II of the Convention on International Trade in Endangered Species Wild Fauna and Flora (CITES), requiring exports from CITES Parties to be accompanied by permits demonstrating legal and sustainable sourcing.

The 2018 IUCN Red List classified *A. superciliosus* as vulnerable (VU) globally under criteria A2bd (Rigby *et al*., 2019) and endangered (EN) in the Mediterranean and European regions (Walls & Soldo, 2016). In the Mediterranean Sea, the thresher shark is both targeted and caught as bycatch in a variety of commercial fishing practices, including longline, bottom trawl, purse seine, and gillnet fisheries (Serena, 2005; Bariche, 2012). While Serena (2005) considers *A. superciliosus* to be an uncommon species in the Mediterranean – captured only sporadically and poorly documented – De Maddalena & Baensch (2005), Clo *et al*. (2008), and Corsini-Foka & Sioulas (2009) argue that the species is not rare in the region and is, in fact, abundant in the eastern Mediterranean Basin.

Incidental captures of sharks – apex predators in the marine food chain – have the potential to disrupt the ecosystem balance and threaten the sustainability of shark populations in the wild (Nurastri *et al*., 2024). According to Serena (2005), the sharks' limited restocking capacity and slow population recovery following overfishing are consequences of their late sexual maturity and low fecundity.

Recent years have seen growing emphasis on researching sharks environmental preferences, developing methods to reduce their incidental catch in commercial fisheries, and implementing sustainable conservation measures for shark species.

A more comprehensive dataset is essential for accurately assessing the scale of shark bycatch mortality in Turkish fisheries. Current evidence suggests that *A. superciliosus* and other shark populations in the Eastern Mediterranean face significant threats. Thus, targeted investigation is necessary to ascertain these species' conservation status specifically within the context of Turkish fisheries.

While *A. superciliosus* was classified as endangered in the Mediterranean region during its most recent IUCN Red List assessment in 2018 (Rigby *et al*., 2019), its current conservation status remains uncertain. The morphometric data obtained from an incidentally captured male specimen in this study therefore contribute valuable new information to the scientific literature on this protected species, which maintains a limited population in Mediterranean waters.

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NOV ULOV VELIKOOKE MORSKE LISICE *ALOPIAS SUPERCILIOSUS* LOWE, 1841 IZ TURŠKE OBALE (SEVEROVZHODNO SREDOZEMLJE)

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POVZETEK

Samec velikooke morske lisice se je po naključju ujel v vlečno mrežo komercialnega plovila. Meril je 310 cm v skupno dolžino in tehtal 156,0 kg. Ulov se je zgodil 16. januarja 2025 v obalni regiji Akyatan, na globini 30 m. Pred pričujočo študijo je bilo vzdolž severovzhodne sredozemske obale Turčije dokumentiranih 15 zapisov o pojavljanju vrste A. superciliosus. *Ta študija dopolnjuje obstoječe znanje in pomeni pomemben mejnik z dokumentiranjem prvega zabeleženega pojava odraslega samca velikooke morske lisice v severovzhodnem Sredozemlju, natančneje ob obali Akyatan v Turčiji. Predstavlja tudi celovito analizo morfometričnih meritev osebka v primerjavi z obstoječimi sredozemskimi zapisi o pojavljanju.*

Ključne besede: velikooka morska lisica, Alopiidae, zapis o pojavljanju, obala Akyatant, Turkiye

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