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## THE FIRST RECORD OF KITEFIN SHARK *DALATIAS LICHA* IN ALBANIAN WATERS

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Regional Administrative of Protected Areas in Vlora, Vlora, Albania

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### ABSTRACT

*The aim of this paper is to present the first documented record of the kitefin shark, *Dalatias licha*, in Albanian waters. Although Albania is situated at the confluence of two seas, and has an Adriatic as well as an Ionian coastline, *D. licha* was not recorded previously as present in Albanian waters, in either its Adriatic or Ionian parts. The kitefin shark individual was captured off the coast of Vlora by a professional fisherman and identified in situ by two researchers.*

**Key words:** Kitefin shark, *Dalatias licha*, Chondrichthyes, Albanian coast, Adriatic Sea

## PRIMO RITROVAMENTO DELLO SQUALO ZIGRINO *DALATIAS LICHA* IN ACQUE ALBANESI

### SINTESI

*Lo scopo di questo articolo è presentare il primo ritrovamento documentato dello squalo zigrino, *Dalatias licha*, nelle acque albanesi. Sebbene l'Albania sia situata alla confluenza di due mari e abbia una costa adriatica e una ionica, *D. licha* non è stata segnalata in precedenza nelle acque albanesi, né in quelle adriatiche né in quelle ioniche. Lo squalo zigrino è stato catturato al largo della costa di Valona da un pescatore professionista e identificato in situ da due ricercatori.*

**Parole chiave:** squalo zigrino, *Dalatias licha*, Chondrichthyes, costa albanese, mare Adriatico

## INTRODUCTION

The kitefin shark, *Dalatias licha* (Bonnaterre, 1788), is a deep-water, benthic to mesopelagic species, mainly distributed in the western Atlantic, western Indian, and Pacific Oceans (Last & Stevens, 1994). The range of this species in the Mediterranean appears to be confined to the western and central basins of the Mediterranean, where it is considered as common (Baino et al., 2001; Navaro et al., 2014), while it is thought as rare in the eastern part of the basin (Ergüden et al., 2017). Occurrence of the species has been documented several times off the western Mediterranean (Bottaro et al., 2005, Capapé et al., 2008) and Levantine coasts (Golani, 2005). Papaconstantinou (1988) reported the presence of the kitefin shark in the Aegean Greek waters, while Kabasakal and Kabasakal (2002) indicated the presence of the species in the north-eastern Aegean Sea. However, due to the absence of kitefin shark in the last 20 years' fishing records, Kabasakal & Karhan (2015) concluded that a Marmaric occurrence of *D. licha* is questionable and requires confirmation. Since then, the first record of an adult female specimen of *D. licha* was reported from Iskenderun Bay (Eastern Mediterranean, Turkey) (Ergüden et al., 2017). Chatzisprou et al. (2019) reported the first record of *D. licha* in the Laconian Gulf of the Greek Ionian Sea, where the kitefin shark is also considered to be a very rare species.

It is listed among Adriatic species, but considered very rare and confined to the deep waters of the central and south Adriatic (Lipej et al., 2004).

The kitefin shark reaches a maximum size of 182 cm total length (TL); males mature at ca. 100 cm TL and females when they reach about 120 cm TL; the size at birth ranges from 30 to 40 cm TL. Reproduction is lecithotrophic viviparous; presumably asynchronous; and litter size is 3–16 pups (average 6–8) (Daley et al., 2002; Ebert et al., 2013). This shark can reach a maximum age of 32–36 years, its age at maturity ranges from 15.5 to 21.5 years (Irvine et al., 2012), while generation length is estimated at 29 years. A slow growth rate, late sexual maturity, and a long gestation period for its life span make this species vulnerable (Stevens et al., 2000). Little information is available on the biology of this species in the Mediterranean.

Albania, situated at the confluence of two seas, has 380 km of coastline, 284 km of which stretch along the Adriatic Sea in the north, and the remaining 96 km face the Ionian Sea. Since the kitefin shark was not, until now, listed as present in Albanian waters, either in the Adriatic or Ionian area, this is the first documented report on the presence of *D. licha* in Albanian waters.

## MATERIAL AND METHODS

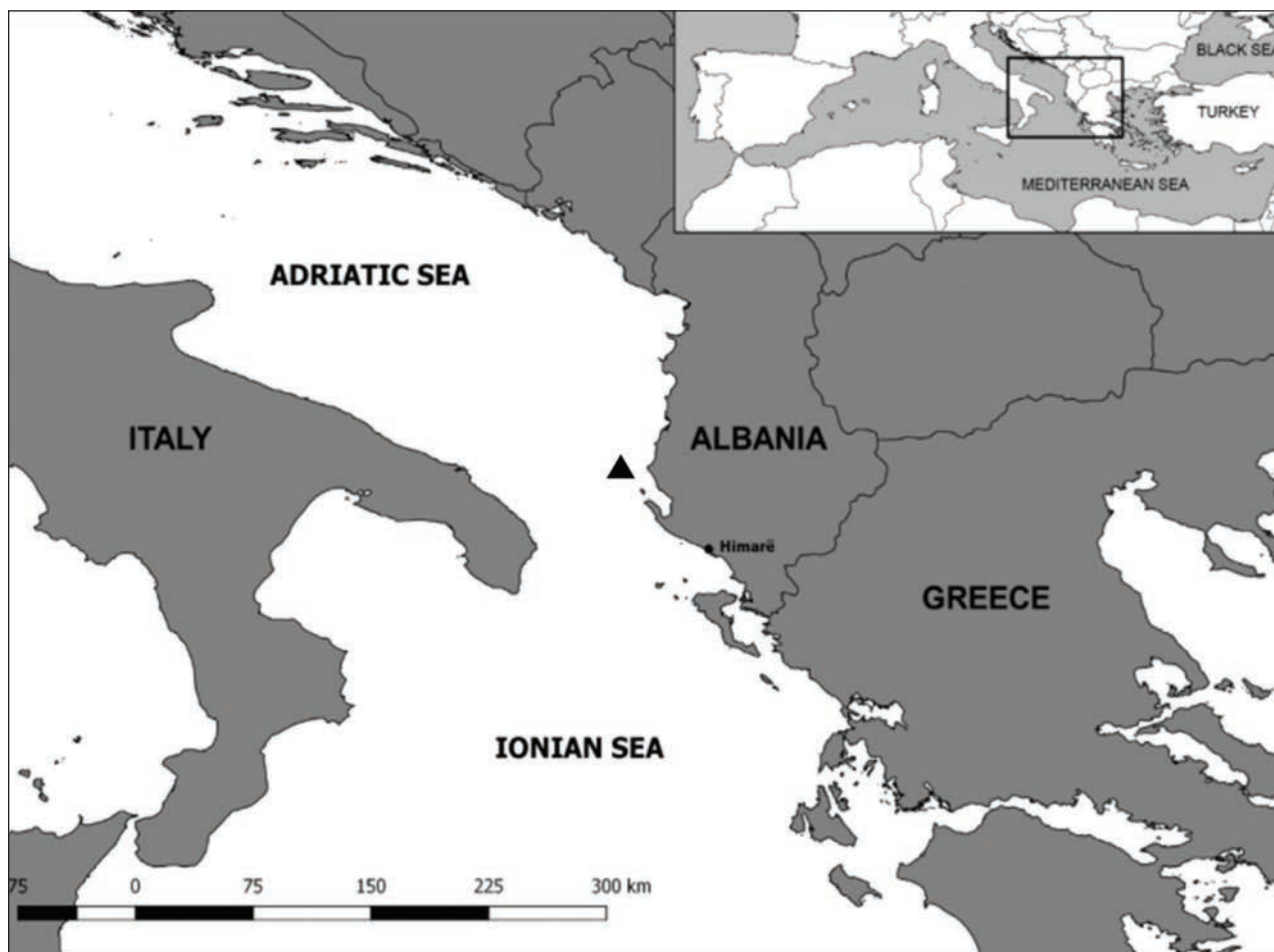
On 22 July 2019, a single male individual of *D. licha* was landed by a professional fisherman in the Fishing Center Oriku (Radhime), South Albania. The specimen was caught during bottom trawling, between the north of the Sazani Island and Vjosa Delta, (40.580144° N, 19.176254° E), at a depth of 300 m, in an area that belongs to the Adriatic Sea (Fig. 1). Identification and morphometric measures of the specimen were performed on site according to guidelines by Compagno (1984). After the measurements were made, the specimen was frozen and kept in the freezer as part of the Fishing Center Oriku collection, in Vlora (Albania) for further investigations.

## RESULTS AND DISCUSSION

The specimen displayed the following combination of specific characteristics (Fig. 2): short and blunt snout, two almost equal-sized spineless dorsal fins, no anal fin, papillose thick lips, small slender-cusped upper teeth and very large lower teeth with erect triangular serrated cusps and distal blades, the first dorsal fin on back with its origin behind the pectoral rear tips and its base closer to the pectoral base than the pelvis, and caudal fin with the ventral lobe not expanded (Compagno, 1984). The total length (TL) and weight (W) were 106 cm and 3.3 kg, respectively. The specimen caught was an adult male.

The global conservation status of the *D. licha* according to IUCN standards is defined as vulnerable (Finucci et al., 2018), the same as in the Mediterranean (Walls & Guallart, 2016). Moreover, in 2010, the European Union Fisheries Council prohibited direct fishing of kitefin shark in the European Community and international waters. In the Mediterranean Sea, the ban on deep-water fishing below 1,000 m of depth may provide the kitefin shark with a limited indirect respite from fishing pressure, although it refers to depths greater than the species' preferred range.

*D. licha* is captured as bycatch in deep-water longline, bottom trawl, and gillnet fisheries in the western and central Mediterranean basins, and the biomass in this region seems to be very low (Baino et al., 2001), with local scientific trawl surveys indicating steady declines. Considering a 15% decline in the period between 1972 and 2004, according to the data by Gruppo Nazionale Demersali (GRUND), and if an exponential decline is assumed, the annual proportional change would be 0.9949. Therefore, the reduction for the time period 1972–2059 (87 years, three generations) is 36%. When projecting this decline into the future



**Fig. 1:** Capture site off Vlora (triangle) of the *D. licha* specimen.  
**Sl. 1:** Lokacija ulova primerka vrste *D. licha* pri mestu Vlora.

(2015–2102, a three-generation period), a decline of another 36% is also calculated (Walls & Gualart, 2016).

In the Mediterranean, the kitefin shark has been caught incidentally in benthic trawl targeting red shrimp, *Aristeus antennatus* (Risso, 1816), and Norway lobster, *Nephrops norvegicus* (Linnaeus, 1758). This species has likely been previously misidentified as other large deep-water sharks, including Portuguese dogfish, *Centroscymnus coelolepis* Barbosa du Bocage & de Brito Capello, 1864, and leafscale gulper shark, *Centrophorus squamosus* (Bonnaterre, 1788) (ICES 2006). Discard mortality is unknown, but presumed to be high (Rodríguez-Cabello & Sánchez, 2017), and the extent of illegal, unreported, and unregulated (IUU) fishing is unknown (Walls & Gualart, 2016).

During exploratory surveys to collect data on exploited and virgin stocks of the deep-sea red shrimp (DESEAS project), kitefin sharks were

caught in all three study areas (the Balearic, western Ionian, and eastern Ionian areas). In the Balearic area abundance decreased with depth, in the western Ionian area the species was found to be more abundant between 1,000 and 1,499 m, while in the eastern Ionian area it was present at shallower depths (Sion et al., 2004).

Jardas (1996) supposed that this species only occurs in the Adriatic in the comparatively deep waters of the Jabuka Pit, but is very rare. Later, Bello (1999) reported that *D. licha* is infrequently caught by bottom trawl on southern Adriatic bathyal grounds.

Albania is an EU candidate country and, since there is a general trend to increase the deep-water fishing effort, which is likely to affect the kitefin shark population in the future, we point out the need to investigate the biology and ecology of this species in the Mediterranean (including Albania) in order to determine the conservation strategies for *D. licha* in the Mediterranean Sea.





**Fig. 2:** *D. licha* landed at the Fishing Center Orikum (Radhime), Albania. (a) The whole specimen, (b) head and eyes, (c) head and jaws, (d) tail, and (e) ventral side of the body.

**Sl. 2:** Primerek vrste *D. licha* v ribiškem središču Orikum (Radhimel, Albanija). (a) celotni primerek, (b) glava in oči, (c) glava in čeljusti, (d) rep in (e) trebušna stran telesa.

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the Albanian coasts to collect the data about shark catches.

PRVI ZAPIS O POJAVLJANJU KLINOPLAVUTEGA MORSKEGA PSA *DALATIAS LICHA* V ALBANSKIH VODAH

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## ABSTRACT

Namen tega prispevka je predstaviti prvi dokumentirani primer o pojavljanju klinoplavutega morskega psa, *Dalatias licha*, v albanskih vodah. Čeprav meji Albanija tako na Jadransko kot tudi na Jonsko morje, doslej *D. licha* ni bil potrjen v nobenem. Primerek klinoplavutega morskega psa je ujel ribič ob obali mesta Vlora, že na mestu samem pa sta ga določila raziskovalca.

**Ključne besede:** klinoplavuti morski pes, *Dalatias licha*, Chondrichthyes, albanska obala, Jadransko morje

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