

Capture of a Blue Shark *Prionace glauca* (Linnaeus, 1758) (Chondrichthyes: Charcharhinidae) by a Swordfish Longliner off Fethiye (Mediterranean Sea, Turkey)

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Abstract: On 25 December 2012, a specimen of *Prionace glauca* (Linnaeus, 1758) was caught by a swordfish longliner along with 9 swordfish together off Fethiye at a depth of 1200 m. The specimen caught was measured as TL and weighed (kg), and photographed. The specimen was 85 cm TL and 7 kg. According to the previous studies, blue sharks especially observed abundantly in northern Aegean Sea, and can be accepted very rare incidental catch from the Turkish coasts owing to weak presuppose of swordfish fishery. However, there is an important place of blue sharks in the global fin trade area. Therefore, population trend of this shark species is swift decreasing.

Keywords: Blue Shark, Carcharhinidae, Floating Longline, Incidental Catch, Fethiye Coast

Mavi Köpekbalığı *Prionace glauca* (Linnaeus, 1758)'nın (Chondrichthyes: Charcharhinidae) Fethiye Açıklarında (Akdeniz) Kılıç Paraketası ile Yakalanması

Özet: 25 Aralık 2012'de bir *Prionace glauca* (Linnaeus, 1758) örneği, Fethiye'den 1200 m derinlikte 9 kılıç balığı ile birlikte bir kılıç balığı paraketa av teknesi tarafından yakalanmıştır. Yakalanan örnek TL olarak ölçüldükten sonra tartılarak (kg) fotoğraflanmıştır. Birey 85 cm uzunluğunda ve 7 kg ağırlığındaydı. Önceki çalışmalara göre, mavi köpekbalıkları özellikle Kuzey Ege Denizi'nde bolca gözlenmekteyken, kılıç balığı avcılığının zayıf olarak bölgede var olması nedeniyle çok nadir olarak rastlantısal düzeyde avlandığı kabul edilebilir. Bununla birlikte, mavi köpekbalıkları küresel yüzgeç ticaretinde önemli bir yer tutmaktadır. Bu nedenle, bu köpekbalığı türünün nüfus eğilimi hızla azalmaktadır.

Anahtar Kelimeler: Mavi Köpekbalığı, Carcharhinidae, Yüzen Paraketa, Tesadüfi Av, Fethiye Kıyıları

Introduction

A total of 80 cartilaginous fish are existing in the Mediterranean (Golani, Öztürk & Başusta, 2006). In Turkish seas, the updated checklist reported that there are 67 Chondrichthyan species belonging 23 families (Serena, 2005; Bilecenoğlu, Kaya, Cihangir & Çiçek, 2014).

Blue shark, *Prionace glauca* (Linnaeus, 1758) is epipelagic as a swift swimmer which occasionally descends to depths of 150 m (Golani et al., 2006). It is viviparous, reaches sexual maturity after 4-6 years at length of 2-2.5 m, and litter size varies with 4-135 embryos (usually 15-30 pups, 35-44 cm length at birth) per litter depending on its size (Golani et al., 2006; Froese & Pauly, 2019). It is highly migratory species, and probably the widest

ranging Chondrichthyan throughout the temperate and tropical oceans (Froese & Pauly, 2019). It is also critically endangered (CR) shark species in the Mediterranean (*see*, IUCN Red List, Sims, Fowler, Ferretti & Stevens, 2016).

The Turkish pelagic longline fishery for swordfish is mostly carried out in Fethiye region towards to Kaş (Antalya) and only a few in Sığacık Bay (İzmir), southern Aegean Sea (Ceyhan & Akyol, 2014). The Turkish swordfish longline fleet consists of about ten vessels. The swordfish boats ranged from 6 to 14 m in length (LOA); 9 to 360 HP in machine power, and total length of pelagic longlines also ranged from 2 to 30 km (Ceyhan & Akyol, 2014). There is only one study on the bycatch species from the longline fishery for swordfish, and a total of 13 (of which 5 cartilaginous) fishes were identified from this

fishery (Ceyhan & Akyol, 2014). Therefore, this study presents a *P. glauca* catch recording from the swordfish longline fishery, and the previous records of this shark species in Turkish seas were also discussed.

Material and Methods

On 25 December 2012, a specimen of *Prionace glauca* was caught by a swordfish longliner off Fethiye (Coordinates: 36° 16' N - 29° 07' E, Figure 1). The hook depth of the pelagic longline was 25 m. The depth of the fishing zone in this particular area was 1200 m. The specimen caught was measured as TL and weighed (kg), and photographed (Figure 2). The longline was carrying a total of 600 hooks and length of the mainline was 30 km. This species was identified according to Compagno (1984).

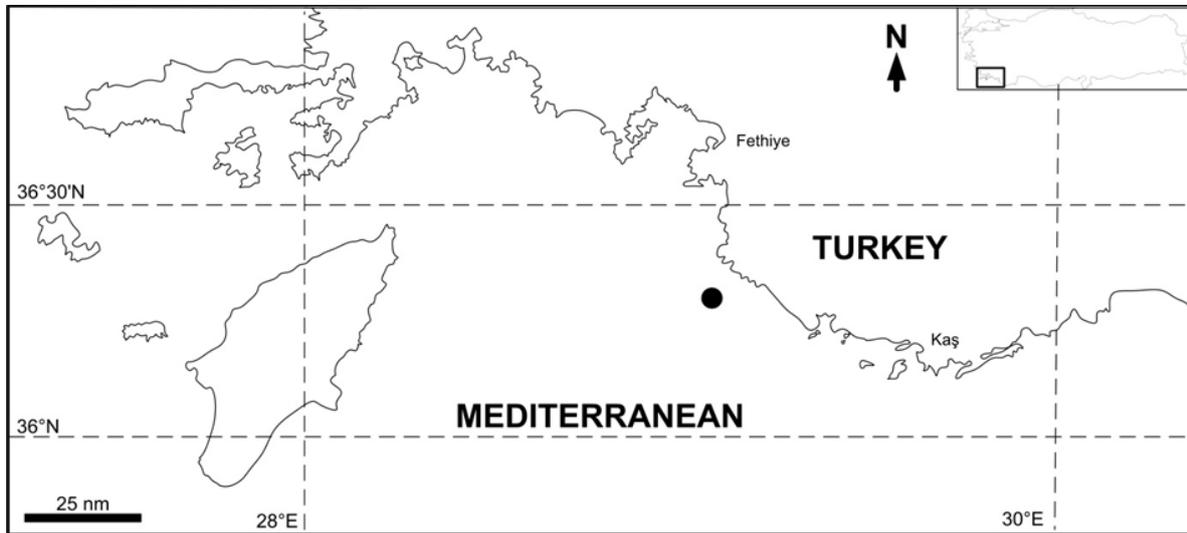


Figure 1. Map showing the capture site (black dot) of *Prionace glauca*

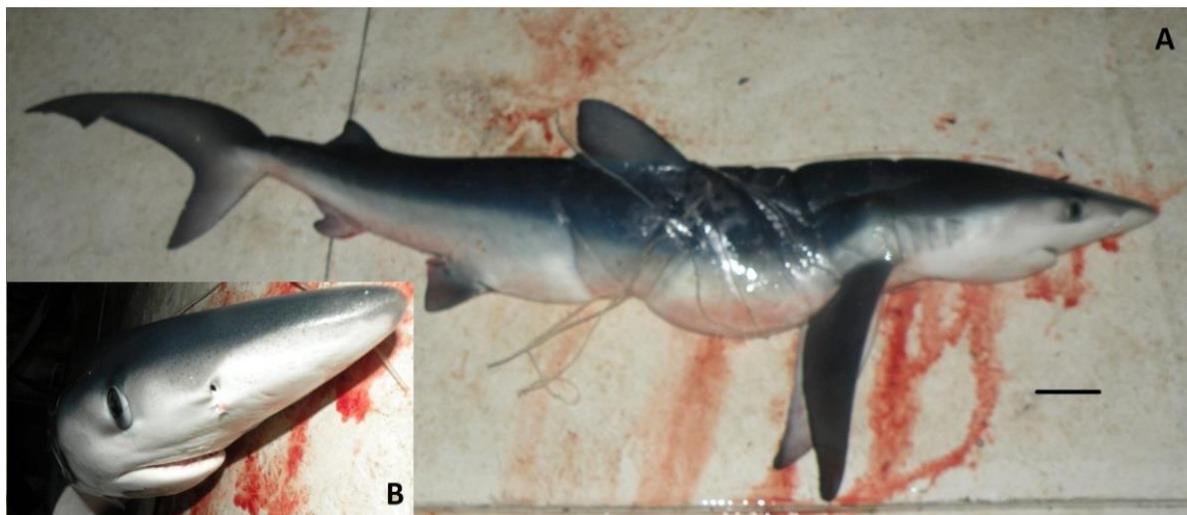


Figure 2. (A) *Prionace glauca* caught off Fethiye, (B) head of the specimen (scale bar: 50 mm)

Results and Discussion

The importance of the role of sharks in ecosystem and the damaging on their status are well known. In this study, the young blue shark specimen was 85 cm TL and 7 kg. This fish was entangled the branch line of longline. Because of the panic, fish might have spun itself round after it got caught.

There were also 9 swordfish (totally 110 kg), caught at the same operation. The pelagic blue sharks have occasionally been caught as much as the thresher sharks, shortfin mako, sandbar sharks and some pelagic stingrays (Shipmaster E. Öçal, pers. comm.).

Prionace glauca seems extensively in the northern Aegean Sea. However, this study shown that blue shark occurred at the open seas between

Fethiye and Kaş, eastern Mediterranean (Table 1). Additionally, Kabasakal (2002) listed the sites of 6 *P. glauca* from Gökçeada to Gazipaşa-Alanya. However, the abundance of this fish is relatively low with only 18 specimens up to now. According to the previous studies, blue sharks especially observed abundantly in northern Aegean Sea, and can be accepted very rare incidental catch from Turkish coasts owing to weak pressure of swordfish fishery. The bycatch ratio of blue shark in Turkish swordfish longline fishery has been reported as 1.4% by number (n=4) from 50 sets of swordfish longline fishery (Ceyhan & Akyol, 2014). Whereas, a total of 57 *P. glauca* had been caught from 359 sets by swordfish and tuna longline fishery in the Aegean and Levantine seas during 1998-1999 fishing season (Megalofonou et al., 2005).

Table 1. Previous records of *Prionace glauca* from the Turkish seas between 1995 and 2017

Date	N	TL, cm	Gender	Area	References
1995-1999	6	?	?	Gökçeada-Çeşme-Alanya	Kabasakal (2002)
? May 1997	1	220	♂	Gökçeada, Aegean Sea	Kabasakal and Kabasakal (2004)
? June 1997	1	51	♀	Gökçeada, Aegean Sea	Kabasakal and Kabasakal (2004)
? Oct. 1999	1	ca.250	?	Gökçeada, Aegean Sea	Kabasakal and Kabasakal (2004)
18 Oct.2008	1	98	♀	Altınoluk, Aegean Sea	Kabasakal (2010)
16 Aug.2009	1	350	♀	Ayvacak coast, Aegean Sea	Kabasakal (2010)
25 Dec.2012	1	85	?	Fethiye, Aegean Sea	This study
Mar.-Aug.2016	6	104-133	?	Gökçeada, Aegean Sea	Gönülal (2017)

In contrast to intensive conservation activities all over the world, the blue sharks are sacrificed to global fin trade. Population trend of blue shark has been decreasing due to the being dominant species in the global shark fin trade. It contributes at least 17% of the fins identified, and annually, about 11 million (range, 5–16 million) blue sharks enter the international fin trade (Camhi, Valenti, Fordham, Fowler & Gibson, 2009). The enforcements heavy fines should be implemented to stop this commercial activity under the leadership of regional fishery management organizations.

In conclusion, this short paper presents the occurrence of the blue shark as an incidental catch from the Turkish swordfish longline fishery. Relatively, this fish especially seems abundantly in northern Aegean Sea, and very rare incidental catch from Turkish coasts owing to weak presuppose of swordfish fishery.

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