

## SHORT COMMUNICATION

### **On the capture of a pregnant bluntnose sixgill shark *Hexanchus griseus* (Chondrichthyes: Hexanchidae) from the Gulf of Tunis (Central Mediterranean Sea)**

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#### **Abstract**

This study presents the capture of a large female *Hexanchus griseus* in the Gulf of Tunis, northern Tunisia. The total length (TL) of the specimen was 3.5 m and the wet-weight was 220 kg. It was carrying fertilized eggs in both uteri and was at the beginning of the gestation. The distribution of the species off the Tunisian coast and in the Mediterranean Sea is evaluated and discussed.

**Keywords:** Gestation, eggs, total length, distribution, Tunisian waters, Mediterranean Sea

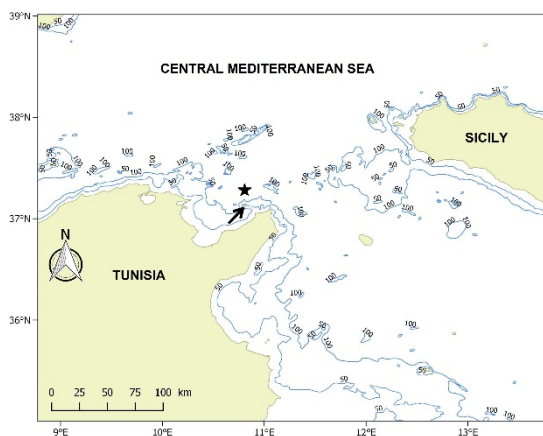
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Bluntnose sixgill shark *Hexanchus griseus* (Bonnaterra 1788) is a large shark species known to be widely distributed in boreal, temperate, warm temperate and tropical waters in the Pacific, Indian and both sides of the Atlantic Ocean (Cook and Compagno 2005). *H. griseus* is caught rather as bycatch in other targeted fisheries for food or recreational activities, thus it appears that some local populations have been severely depleted (Cook and Compagno 2005). The species is known throughout the Mediterranean Sea, in both eastern and western basins. Its distribution and some aspects of its reproductive biology were studied by Capapé *et al.* (2003, 2004), based on a literature review and original data collected from the coasts of France, Spain, Italy, Malta, Algeria and Tunisia,

showing that it was sporadically caught in some marine areas, while it was commonly caught off the Algerian coast. In some areas such as the Turkish waters, the species appears to be commonly caught (Kabasakal 2006, 2009). Additionally, Kabasakal (2013) reported three specimens caught between 2001 and 2006 from the Turkish coast of the Black Sea. Consequently, the records reported throughout the Mediterranean Sea and the Black Sea showed that the species could not be really considered as threatened in both seas. Confirming such statement, Basusta and Basusta (2015) reported an additional capture of a young of *H. griseus* from Iskenderun Bay, Turkey.

Catch of *H. griseus* was previously reported from northern Tunisia at level of Eskerkis Bank by Maurin (1968), Capapé (1987, 1989) and more recently, by Rafrafi-Nouira *et al.* (2015) who observed a specimen captured by trawl at approximately 300m depth on rocky bottom in this northern area (37°35'30.30"N, 10°35'02.47"E) on 28 August 2014. However, Bradai *et al.* (2002) noted that the species was more abundant in southern Tunisia, such as the Gulf of Gabès, than in the northern part. In this paper, the first record of a pregnant female *H. griseus* in the Gulf of Tunis is reported with the description of the specimen and this unusual capture was evaluated and discussed.



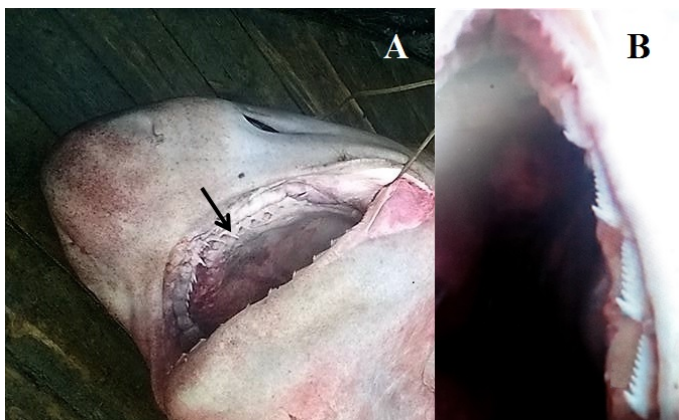
**Figure 1.** The capture site of the female *Hexanchus griseus* (black star) in the north of Zembra Island (arrow) in the Gulf of Tunis, the central Mediterranean Sea

On December 15, 2016, a specimen of *H. griseus* was accidentally captured by trawl approximately at a depth of 200m targeting European pilchard *Sardina pilchardus* (Walbaum, 1792) in the Gulf of Tunis, north to Zembra Island (37°24'30"N, 10°81'64"E) (Figure 1). It was a large female measuring 3.5 m in total length (TL) and reaching 220kg in wet-weight (Figure 2A). The specimen was identified following the combination of some characteristics: body, stout, head broad, snout short and blunt, six gill slits (Figure 2B), dorsal fin above anal

fin base, upper jaw with 4 rows of front teeth, lower jaw with six rows of lateral teeth, dark brown and belly beige (Figure 3). This description is in total accordance with Boeseman (1984).



**Figure 2.** Female *Hexanchus griseus* captured in the Gulf of Tunis  
**A:** General morphology, **B:** Anterior part with arrow showing the six gill slits



**Figure 3.** Female *Hexanchus griseus* captured in the Gulf of Tunis  
**A:** Ventral surface of female showing teeth of the upper jaw (see arrow).  
**B:** Teeth of the lower jaw.

The specimen was immediately cut by retailers on board, to be sold in a fish market. A total of 85 fertilized eggs were removed from both uteri, indicating that the present specimen was a pregnant female at the beginning of the gestation (Figure 4). Capapé *et al.* (2004) noted that two females caught in the Tunisian waters had 57 and 100 fully yolked oocytes in the ovaries. Vaillant (1901) numbered 108 near-term embryos in a female of 4.8m TL caught in the Bay of Biscay, and 47 by Ebert (1986) in a female of 4.21m from California. Based on the Mediterranean records, it appears that a population of non-negligible density occurs in this sea (Capapé *et al.* 2003, 2004; Kabasakal 2006, 2013) due to the fact that ovarian fecundity and litter sizes were high in *H. griseus* which could be considered as a prolific elasmobranch species (Capapé *et al.* 2004). Unfortunately, since the species is confronted to a stock decrease (Delattre and Maigret 1986), due to its *K*-selective parameters, size at maturity reached at a large TL, and long reproductive cycle extending during two years (Ebert 1986) reducing its recruitment.



**Figure 4.** Fertilized eggs removed from both uteri of the female *Hexanchus griseus* captured in the Gulf of Tunis

*H. griseus* is rather common in the eastern Atlantic (Cook and Compagno 2005) and herculean migration (*sensu* Quignard and Tomasini 2000) could be a source of the Mediterranean. Cook and Compagno (2005) consider the species as near threatened but not totally depleted. Recent captures in the eastern areas (Basusta and Basusta 2015), and the Gulf of Tunis confirm the presence of *H. griseus* throughout the Mediterranean Sea, however, a strong monitoring of the species should be enhanced, to avoid a drastic depletion.

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