

## The Atlantic starfish, *Asterias rubens* Linnaeus, 1758 (Echinodermata: Asteroidea: Asteriidae) spreads in the Black Sea

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### Abstract

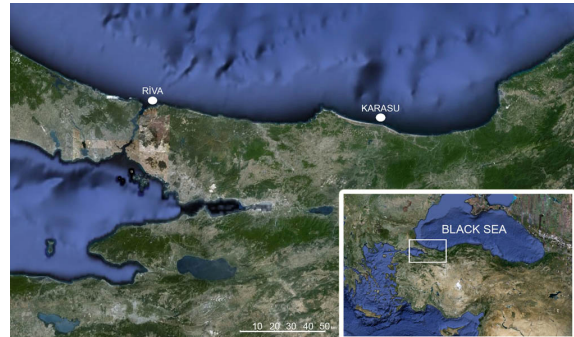
A single specimen of *Asterias rubens* was collected on 17 February 2009 off Karasu, Sakarya, Turkey. Its possible impact on *Mytilus galloprovincialis* beds in the Black Sea is discussed.

**Key words:** Atlantic starfish, *Asterias rubens*, alien species, Black Sea, Turkey

A single specimen of *Asterias rubens* Linnaeus, 1758 (85,1 mm in diameter, weight 8.99 g) was identified from the catch of a bottom trawl (mesh 18 mm) off Karasu, Sakarya, Turkey (41°13'58"N, 30°30'52"E) (Figure 1), on sandy-mud bottom at 90 m depth, taken on 17 February 2009. The specimen was initially preserved in 5% formalin then transferred to 70% ethanol (Figure 2), and deposited in Rize University Faculty of Fisheries Museum, Rize (FFR, 5001).

*Asterias rubens* is widely distributed in the northeast Atlantic Ocean (Budd 2008). It is known from the Sea of Marmara since 1990 (Yüce and Sadler 2000), the Bosphorus Strait (Albayrak 1996), and from Riva, on the Black Sea coast, close to the northern end of the Bosphorus Strait on, where three juvenile specimens were collected in 2003 (Karhan et al. 2007). The present work records the spreading of *A. rubens*, as the site is 120 km further east of Riva.

The Mediterranean mussel, *Mytilus galloprovincialis* Lamarck, 1819, is distributed all over the coasts of the Black Sea and to date rapa whelk, *Rapana venosa* (Valenciennes, 1846), the



**Figure 1.** Location of the first record of *Asterias rubens* in Black Sea (Riva) and present site (Karasu)

alien mollusk, is the main predator for these stocks (Şahin et al. 2009). Former studies were described *A. rubens* as a “keystone predator” for the economical mussel stocks (e.g. *M. edulis*) at British shores (Saier 2001). Recently, Karhan et al. (2007) was discussed the possible impact of the competition between *A. rubens* and a native starfish *Marthasterias glacialis* (Linnaeus, 1758) in the Sea of Marmara and they also reported rarely presence of *M. glacialis* in the Black Sea.



**Figure 2.** *Asterias rubens* (85 mm in diameter) captured at Karasu, Black Sea. Photograph by G. Dalgıç

According to the local fishermen of Sakarya, Western Black Sea, the Atlantic starfish has not been familiar at the area so far. Possible adaptation of *A. rubens* in the Black Sea means that it will be an other predator with rapa whelk for the Black Sea mussel stocks. Adaptation and then spreading of *A. rubens* in the Black Sea should be monitored to validate its impact on the *M. galloprovincialis* stocks.

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