Maximum Length Record of Common Two-banded Seabream (*Diplodus vulgaris* Geoffroy Saint-Hilaire, 1817) for Aegean Sea with Turkish Waters

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**ABSTRACT**

The maximum length, weight, and age information of living things in an ecosystem are necessary for population dynamics and stock assessment studies. Hence, the recording of such data may be beneficial for scientific databases for life history and fisheries science. The common two-banded seabream (*Diplodus vulgaris* Geoffroy Saint-Hilaire, 1817) is a widespread demersal marine fish, which belongs to the Sparidae family and inhabits down to 90 m depth. Because it is a demanded seafood, it has commercial importance and usually available in the fish market almost every month of the year in Turkey. A single specimen of common two-banded seabream with 31.9 cm in total length and 467.00 g in total weight, which was caught off İbrice Bight (Saroz Bay) with handline by a professional fisherman on 12 June 2015, was obtained from a fishmonger. This study aims to present the maximum size record of this species for the Aegean Sea with Turkish waters.

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**Introduction**

The common two-banded seabream (*Diplodus vulgaris* Geoffroy Saint-Hilaire, 1817) is a demersal marine fish, which inhabits inshore waters on rocky or sandy bottoms and posidoniabeds down to 90 m depth. It is a common fish with a wide distribution range in the Eastern Atlantic, from the Bay of Biscay to the Cap Verde Islands and around the Madeira and the Canary Islands, and from Angola to South Africa. It is also present throughout the Mediterranean Sea and in the Black Sea (Bauchot and Hureau 1986; Mouine et al. 2010).

Maximum length and weight are important parameters used in life history studies and fishery science. These measurements are applied directly or indirectly in most stock assessment models (Borges 2001; Cengiz 2014). Therefore, it is important to regularly update the maximum size of commercially important species (Navarro et al. 2012; Cengiz et al. 2019a). This study presents the maximum size record of the species for the Aegean Sea with Turkish waters.

**Materials and Methods**

Saroz Bay, which is situated in the Northeastern Aegean Sea, is connected to the North Aegean with a depth of approximately 600 m to the west. The shelf extends at a water depth of 90-120 m. The length of the bay is about 61 km and
the width at the opening to the Aegean Sea is about 36 km (Eronat and Sayın 2014; Cengiz et al. 2019b). As Saroz Bay had been closed to bottom trawl fishing since 2000 (Cengiz et al. 2011) and no industrial activity was prevalent in the area (Sarı and Çağatay 2001), the bay can be considered as a pristine environment (Cengiz et al. 2013; 2019c; 2019d).

A single specimen of *D. vulgaris* was caught off İbrice Bight (Saroz Bay) (Fig. 1) at 15 m depth with handline by fisherman on 12 June 2015. In legal regulations of Turkey (communique no: 2016/35), the total length is expressed as the projection length between the front end of the fish head and the end point of the longest ray of the caudal fin when the mouth is closed. Hereby, the specimen was subsequently measured to the nearest mm and weighted to the nearest g. Some morphometric and meristic characters were measured. Unfortunately, the specimen was not preserved as it was sold by a professional fisherman at the fish market.

**Figure 1.** Saroz Bay and sampling station

**Results and Discussion**

The captured common two-banded seabream was 31.9 cm in total length and 467.00 g in total weight (Fig. 2). Some morphometric and meristic characters for *D. vulgaris* is presented in Table 1. The comparison of the maximum lengths and weights recorded for *D. vulgaris* in the Aegean Sea with Turkish waters is given in Table 2.

**Figure 2.** The common two-banded seabream with 31.9 cm TL and 467.00 g TW

| Author(s)          | Area                       | N   | L<sub>max</sub> (cm) | W<sub>max</sub> (g) |
|--------------------|----------------------------|-----|---------------------|--------------------|
| Petrakis and Stergiou (1995) | Euboikos Gulf, Greece     | 28  | 14.7                | -                  |
| Can et al. (2002)   | İskenderun Bay, Turkey     | 105 | 27.0                | -                  |
| Moutopoulos and Stergiou (2002) | Cyclades, Greece     | 122 | 29.6                | -                  |
| Karakulak et al. (2006) | Gökçeada Island, Turkey  | 93  | 25.0                | -                  |
| Özaydın and Taşkavak (2006) | İzmir Bay, Turkey       | 63  | 15.4                | 80.00              |
| Akyol et al. (2007) | Gökova Bay, Turkey        | 69  | 26.5                | -                  |
| Gökte et al. (2007) | North Aegean, Turkey      | 18  | 13.3                | 28.00              |
| Gökte et al. (2010) | İskenderun Bay, Turkey    | 22  | 17.9                | 91.77              |
| İşmen et al. (2007) | Saroz Bay, Turkey         | 23  | 19.1                | 104.00             |
| Özaydın et al. (2007) | İzmir Bay, Turkey        | 1615| 23.1                | -                  |
| İlyaz et al. (2008) | İzmir Bay, Turkey         | 242 | 18.7                | -                  |
| Karakulak et al. (2008) | Theraikos Gulf, Greece  | 50  | 16.7                | -                  |
| Acarli et al. (2009) | Homa Lagoon, Turkey      | 68  | 14.1                | 45.83              |
| Gürkan et al. (2010) | Candarli Bay, Turkey     | 119 | 10.1                | 11.60              |
| Cengiz (2013)       | Gallipoli Peninsula, Turkey | 50  | 28.4                | 347.08             |
| Acarli et al. (2014) | Homa Lagoon, Turkey      | 81  | 15.2                | 52.90              |
| Bilge et al. (2014) | Southern Aegean, Turkey  | 1893| 23.1                | -                  |
| Altın et al. (2015) | Gökçeada Island, Turkey  | 334 | 22.6                | 160.60             |
| Kara et al. (2017)  | Gediz Estuary, Turkey    | 87  | 13.0                | 31.80              |
| This study          | Saroz Bay, Turkey         | 1   | 31.9                | 467.00             |

As well known, the individuals in populations exposed to high levels fishing pressure will respond by reproducing at smaller average sizes and ages and so reached maximum...
lengths may getting and getting smaller. But, the one individual that subjected to no overfishing pressure could be reached that kind of length (Filiz 2011; Cengiz et al. 2019e). On the other hand, any factor that might possibly influence growth has been shown to have an effect, including nutrient availability, feeding, light regime, oxygen, salinity, temperature, pollutants, current speed, nutrient concentration, predator density, intra-specific social interactions and genetics (Helfman et al. 2009; Acarli et al. 2018). In conclusion, the present study proves that this species can grow above the previous maximum data reported in the Aegean Sea with Turkish waters. The information presented here may be used to compare the similar parameters in ongoing fishery studies all over world by providing the scientific support to the fisheries scientists.

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