

SHORT COMMUNICATION

On maximum length record of the chub mackerel (*Scomber japonicus* Houttuyn, 1782) from Northern Aegean Sea (Turkey, eastern Mediterranean)

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ABSTRACT

The accurate estimates of the maximum length of fish within a population are significant issues. Because the parameters related to maximum length, weight and age of fish communities in the ecosystem are constantly used in population dynamics and stock estimation studies, recording of such data is vital for determining the life history of fish. In this connection, a single specimen of *Scomber japonicus* was captured off Kabatepe Bight (Gallipoli Peninsula) with handline by a commercial fisherman on 21 September 2013. This specimen was 370.00 g in total weight and 34.6 cm in total length (32.0 cm in fork length), corresponding to the second maximum size recorded for Turkish waters. This study aims to contribute to the scientific literature.

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Introduction

The chub mackerel (*Scomber japonicus* Houttuyn, 1782) is a cosmopolitan middle-sized species inhabiting the temperate and warm transition waters of the Mediterranean Sea, the Atlantic, Indian and Pacific oceans. It is a schooling and highly migratory species over the continental shelf, distributed from the surface to 300 m depth (Collette and Nauen, 1983).

Concerning Turkish waters, information on the biology of this species come from Marmara (Tuggac, 1957) and Black Seas (Atlı, 1959), Dardanelles (Özekinci et al., 2009), Izmir (Sever et al., 2006; Bayhan, 2007) and Saros Bays (Cengiz, 2012, 2021). In addition, Cengiz et al. (2013) reported the determination of hook selectivity for catching the chub mackerel.

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

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assessment models (Borges, 2001; Cengiz et al., 2019a). Therefore, it is important to regularly update the maximum size of commercially important species (Navarro et al., 2012; Cengiz et al., 2019b) such as the chub mackerel (Yu et al., 2018). In this study, the proved length of *Scomber japonicus* is second maximum size record for Turkish waters.

Material and Methods

A single specimen of *Scomber japonicus* was caught off Kabatepe Bight (Gallipoli Peninsula) (Figure 1) with handline by a commercial fisherman on 21 September 2013. Total length is defined as the measurement taken from the anterior-most part of the fish to the end of the caudal fin rays when compressed dorso-ventrally (Anderson and Gutreuter, 1983). Hereby, the specimen was subsequently measured to the nearest mm and weighted to the nearest g. Unfortunately, the specimen was not preserved as it was sold by a professional fisherman at the fish market.

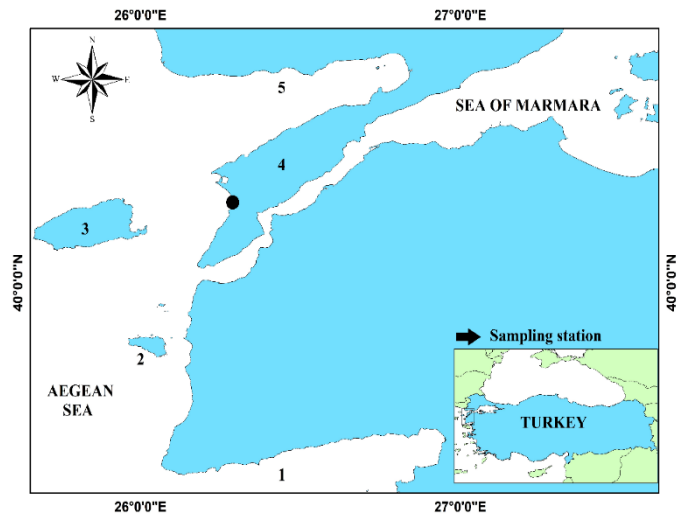


Figure 1. The Northern Aegean coasts of Turkey (1: Edremit Bay; 2: Bozcaada Isl.; 3: Gökçeada Isl.; 4: Gallipoli Peninsula; 5: Saros Bay) and sampling station

Table 1. The comparison of the maximum lengths and weights recorded for *S. japonicus* from different localities

Author(s)	Area	N	L _{max} (cm)	W _{max} (g)
Gonçalves et al. (1997)	South-west coast of Portugal	216	39.5	-
Kiparissis et al. (2000)	Cretan Sea (Greece)	-	31.0	-
Carvalho et al. (2002)*	Azores	349	53.0	2000.00
Santos et al. (2002)	Algarve coast (southern Portugal)	805	47.2	951.50
Sinovčić et al. (2004)	Adriatic Sea (Croatia)	1607	38.8	710.60
Perrotta et al. (2005)	NE Mediterranean	158	39.0	-
	SW Atlantic	392	45.0	-
Karakulak et al. (2006)	Gökçeada Isl. (Northern Aegean Sea)	25	31.2	-
Özaydın and Taşkavak (2006)*	İzmir Bay	129	26.0	157.00
Rosa et al. (2006)	Azores	167	53.0	2192.00
Bayhan (2007)*	İzmir Bay	520	27.2	-
İşmen et al. (2007)	Saros Bay (Northern Aegean Sea)	45	22.0	98.00
Sangun et al. (2007)	Kuzey Doğu Akdeniz	11	22.0	93.06
Gang et al. (2008)*	East Chine-Yellow Sea	352	41.1	-
Ceyhan et al. (2009) ^a	Gökova Bay	16	33.0	-
Cengiz (2012)	Saros Bay (Northern Aegean Sea)	402	31.1	314.70
Cengiz (2013)	Gallipoli Peninsula (Northern Aegean Sea)	69	26.4	157.88
Cengiz et al. (2013)	Dardanelles & Gallipoli Peninsula (Northern Aegean Sea)	345	28.6	-
Bilge et al. (2014)	Southern Aegean Sea	31	18.8	-
Cengiz (2021)	Saros Bay (Northern Aegean Sea)	35	29.2	260.22
This study ^b	Gallipoli Peninsula (Northern Aegean Sea)	1	34.6 (FL = 32.0)	370.00

Note: L_{max}: maximum length, W_{max}: maximum weight, N: number of individuals,

*Fork length = FL;

^a Maximum size record for Turkish waters

^b Second maximum size record for Turkish waters

Results and Discussion

The captured chub mackerel was 34.6 cm in total length (32.0 cm in fork length) and 370.00 g in total weight (Figure 2). The comparison of the maximum lengths and weights recorded for *S. japonicus* from different localities is given in Table 1.



Figure 2. The chub mackerel with 34.6 cm in total length (32.0 cm in fork length) and 370.00 g in total weight

As well known, if a fish population in any ecosystem is exposed to overfishing, fish sizes will gradually be smaller over time (Cengiz, 2020). However, the one individual that subjected to no overfishing pressure could be reached that length (Filiz, 2011). 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).

Conclusion

This work proves that *Scomber japonicus* can grow above the previous maximum data found in the Northern Aegean coasts of Turkey. The researchers involved in fisheries management should consider the paper results.

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Compliance with Ethical Standards

Conflict of Interest

The author declares that there is no conflict of interest.

Ethical Approval

For this type of study, formal consent is not required.

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