

## SUMMER ICHTHYOPLANKTON DATA IN THE SEA OF MARMARA

Nazli Demirel \*, Ahsen Yuksek and Erdogan Okus

Institute of Marine Sciences and Management, University of Istanbul, Muskule Sok. No:1, 34116, Istanbul, Turkey - ndemirel@istanbul.edu.tr

### Abstract

Eggs and larvae belonging to 10 species were identified in July 1997 and to 19 species in August 2000 in the Marmara Sea. Erdek Bay, Marmara Island and surrounding areas and Tekirdag-Sarkoy region are especially important spawning areas in the Sea of Marmara.

**Keywords :** *Ichthyoplankton, Sea Of Marmara, Spawning.*

The Sea of Marmara is an enclosed basin where Atlanto-Mediterranean originated commercial pelagic fishes spawn while migrating from the Mediterranean and the Aegean Sea to the Black Sea [1]. Organic and microbiological pollution increased in recent years in the eastern part of the Sea of Marmara especially Izmit Bay [2]. The Sea of Marmara receives large amounts of water from the northwestern Black Sea via the Strait of Istanbul and became eutrophic [3]. Ichthyoplankton research enables a good evaluation of ecosystem changes via fluctuations in species diversity and stocks [4]. The present study identifies important spawning areas in the Sea of Marmara based on summer ichthyoplankton data.

Ichthyoplankton was sampled at 63 stations with Nansen closing nets (mouth diameter 57 cm, mesh size 500  $\mu\text{m}$ ) vertically in July 1997 and August 2000.

The average upper layer water temperature was 23.8 °C in July 1997 and 24.1 °C in August 2000. Eggs and larvae belonging to 10 species were identified in July 1995 and to 19 species in August 2000 (Table 1).

Tab. 1. Presence-absence data of the identified species.

Species	July 1997		August 2000	
	Egg	Larvae	Egg	Larvae
<i>Arnoglossus</i> sp.				+
<i>Blenius</i> sp.				+
<i>Buglossidium luteum</i> (Risso 1810)			+	
<i>Callionymus</i> sp.	+			
<i>Coris julis</i> (Linnaeus, 1758)			+	
<i>Diplodus annularis</i> (Linnaeus, 1758)	+		+	+
<i>Diplodus</i> sp.		+		+
<i>Engraulis encrasicolus</i> (Linnaeus, 1758)	+	+	+	+
<i>Gobius</i> sp.				+
<i>Liza saliens</i> (Risso 1810)	+			+
<i>Liza</i> sp.			+	
<i>Maurolicus muelleri</i> (Gmelin, 1789)	+		+	
<i>Merlangius merlangus</i> (Linnaeus, 1758)			+	
<i>Microchirus variegatus</i> (Donovan, 1808)			+	
<i>Mullus barbatus</i> Linnaeus, 1758	+		+	
<i>Sardina pilchardus</i> (Walbaum, 1792)			+	+
<i>Scomber japonicus</i> Houttuyn, 1782	+		+	
<i>Scorpaena porcus</i> Linnaeus, 1758	+		+	
<i>Serranus hepatus</i> (Linnaeus, 1758)	+		+	
<i>Solea</i> sp.			+	
<i>Trachurus trachurus</i> (Linnaeus, 1758)	+		+	+
<i>Trigla</i> sp.	+		+	

The mean egg abundance per unit area was 336 ind.m<sup>-2</sup> in July 1997 and 634 ind.m<sup>-2</sup> in August 2000. The distribution of eggs was higher generally in the north and west part of the Sea of Marmara in July 1997. The abundance and species number were higher especially in the northwest part (Tekirdag-Sarkoy shores). On the contrary, only 7 larvae were found in July 1997. Higher egg abundances were found in the west part among Tekirdag, Marmara Island and Erdek Bay in August 2000. Species numbers were also high in Tekirdag and Gebze coasts (southeast). Similar to egg distribution, larval distribution was high in the northwest and west parts of the Sea of Marmara. Highest abundance value was 1097 ind.m<sup>-2</sup> at Murefte coast (Figure 1).

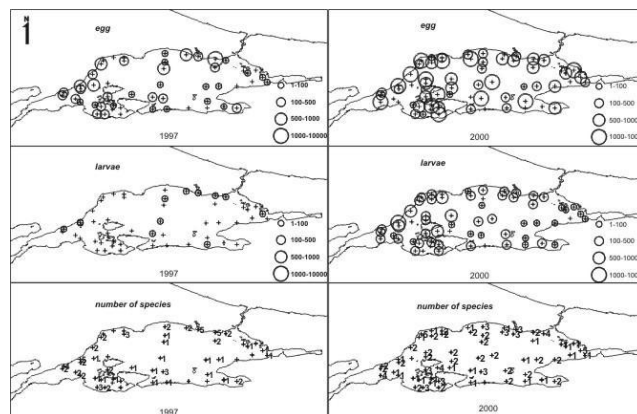


Fig. 1. Distribution and abundance of eggs-larvae and number of species.

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