

Stock dimensions and species composition of Demersal Fish biomass in Izmir Bay

H. Tuncay KINACIGIL and Adnan TOKAÇ

Ege University Fisheries College, Bornova/IZMIR (Turkey)

The purpose of this study is to determine the demersal fish stock living in different depths, between 20 and 70 mtrs, of the south and east parts comprised respectively between the following coordinates: 38°40'48"N and 26°28'20"E and 38°41'29"N and 26°42'42"E, which connect the eastern borderlands of Karaburun and Eski Foça successively.

The Izmir Bay, where in this study was carried out, has a muddy and orgillaceous ground, which is suitable for trawling.

This study was carried out with the reseach boat Hippocampus, which belongs to the Ege University Fisheries College. The bottom trawl net used during the survey had a codend mesh size of 40 mm with a high opened mouth.

The amount of demersal fish was estimated by bottom trawl and the amounts caught by this method in unit time. The different depth levels (20-40-60-70m), as well as the homogeneous distribution of distances between the stations, were considered determining the twenty trawl stations for the study.

The species of trawl samples were selected at the end of each trawling. The main commercial fish as *Mullus barbatus*, *Pagellus erythrinus*, *Solea vulgaris*, *Merluccius merluccius*, *Trisopterus minutus capelanus* were biologically analysed.

The examination and estimation of demersal fish stock was made according to ALVERSON *et al.* (1964).

Recording to RICKER (1940) and GULLAND (1964), the total population of demersal species in an area can be estimated with the help of trawling area, catching capacity of the trawl and the catching density.

The stock dimensions in the research area can be expressed as biomass of the demersal fish, and its amount found out by measuring the commercial demersal fish.

In this study, the biomass distribution of demersal fish was found dense in the area between the exit of the interior bay and the exterior bay, estimating an amount of 2.8 tones per square mile. In the exterior bay, and the Gülbahçe Bay these amounts were estimated as 1.4 and 1.5 tones per square mile, respectively (Table 1, Fig.1).

Study Region	Average Depth (m.)	Scanning Ground (m ² /h.)	Study Area (mile/square)	Catching of Mile Square (tone)	Production of The Ground (tone)
Interior Bay	50	37 x 10 ³	7.19	4.600	33.070
	40	37 x 10 ³	10.59	3.700	39.180
	30-40	37 x 10 ³	11.69	2.780	32.500
	20-30	37 x 10 ³	10.71	2.320	24.850
	20-25	37 x 10 ³	6.00	1.850	11.100
Exterior Bay	20	37 x 10 ³	8.56	1.400	11.980
	50	37 x 10 ³	10.04	1.850	18.570
	60-70	37 x 10 ³	46.44	1.400	65.020
Gülbahçe Bay	40-50	37 x 10 ³	6.41	0.920	5.900
	28-30	37 x 10 ³	1.32	4.600	6.070
Gülbahçe Bay	28-30	37 x 10 ³	9.93	1.400	13.900
	28-30	37 x 10 ³	1.98	1.480	0.950
Total			130.86		263.090

It was observed, that the depth levels in which the fish biomass had a stronger density, were between 40 and 50 mtrs in the interior bay, 50 and 70 mtrs in the exterior bay and 28 and 30 mtrs in the Gülbahçe Bay (Table 2).

Fortyfive species were determined by the trawl surveys made in the research area. These species are composed as follows: 3 Pelagic, 5 Selachii, 2 Crustacea, 4 Cephalopoda and 31 Demersal fish.

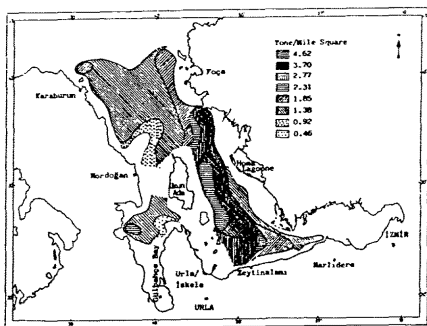


Fig. 1.- Distribution of Demersal Biomass in the Sub-Regions

Study Region	Average Depth (m.)	Scanning Ground (m ²)	Average Catching (tone)	A catch of Mile Square (tone)	Study Area (mile square)	A Production of the Area (tone)
Interior Bay						
Gülbahçe	30-58	37 x 10 ³	0.05	4.6	8.11	37.300
Exterior Bay	30-40	37 x 10 ³	0.04	3.7	10.59	39.180
Tuzla						
Exterior Bay	30	37 x 10 ³	0.03	2.8	11.69	32.500
Tuzla						
Exterior Bay	20-30	37 x 10 ³	0.025	2.3	10.71	24.830
Tuzla						
Exterior Bay	40-50-70	37 x 10 ³	0.02	1.8	18.04	33.380
Tuzla						
Exterior Bay	30-60	37 x 10 ³	0.015	1.4	64.93	91.000
Tuzla						
Exterior Bay	50	37 x 10 ³	0.01	0.9	6.41	5.970
TOTAL					130.86	263.090

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