

THE BIOMASS AND SOME BIOLOGICAL ASPECTS OF THE MEDITERRANEAN SLIMEHEAD *HOPLOSTETHUS M. MEDITERRANEUS*, FROM SAROS BAY (NE AEGEAN SEA, TURKEY)

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Abstract

The CPUE, biomass indices and some aspects of the biology of *Hoplostethus mediterraneus mediterraneus* from Saros Bay (NE Aegean Sea) are determined. Specimens were caught by commercial trawl from the depth interval 200-500 m, in the period of January 2005-September 2008. Length-weight relationship is found $W=0,0101*L^{3,1041}$ for both sexes. Total length and total weight ranged from 4,0 to 24,6 cm and from 0,83 to 209,7 g respectively.

Keywords: Biomass, Aegean Sea, Trawl Surveys

With the arisen awareness of the 'ecosystem-based fisheries management', discarded species are no longer considered as less important constituents of the integrated ecosystem. However information is still scarce regarding many non-commercial species' distribution, population status and biology. The Mediterranean slimehead is a good example for this situation. *Hoplostethus mediterraneus mediterraneus* Cuvier, 1829 (Beryciformes: Trachichthyidae), having no commercial value in the Mediterranean Sea fisheries, is a cosmopolitan, benthopelagic, marine species living at a depth range of 100-1175 m [1]. This species has received relatively little scientific attention and many basic aspects of its biology are as yet unknown. [2].

Methods

Samples were collected by a commercial bottom trawl net with a cod end stretched mesh size of 22 mm, at monthly sampling intervals from January 2005 to September 2008. *H. mediterraneus mediterraneus* specimens were caught from the depth range of 200-500 m, tow duration was restricted to 30 min and the vessel speed was kept constant at 2,7 knots during hauling. CPUE was calculated for 1 hour, biomass was estimated using the swept area method. Total length, weight and if possible sex and maturation stage were recorded for each specimen, also some of the gonads, stomachs and otoliths were dissected and sampled in order to evaluate for further studies. Length-weight relationship were calculated and expressed $W=aL^b$.

Results and Discussion

The CPUE and biomass indices show that *H. mediterraneus mediterraneus* is widely distributed in Saros Bay.

Tab. 1. CPUE (kg/h) and biomass (kg/km²) indices of *H. mediterraneus mediterraneus* in Saros Bay. *)Month represented by only one specimen, **)Month represented by juveniles only

	2005		2006		2007		2008		MEAN	
	CPUE	BI	CPUE	BI	CPUE	BI	CPUE	BI	CPUE	BI
Jan.	0	0	0,62	10,09	12,40	203,28	*0,08	*1,34	3,27	53,68
Feb.	0	0	0,11	1,85	0	0	4,20	68,85	1,08	17,68
Mar.	0,47	7,69	**0,10	**1,67	0	0	0,72	11,80	0,32	5,29
Apr.	4,56	74,82	1,59	25,99	*0,01	*0,13	No sampling		2,05	33,64
May	0	0	0,39	6,47	1,76	28,80	0	0	0,54	8,82
June	101,73	1667,76	0	0	0	0	0	0	25,43	416,94
July	0	0	2,40	39,29	0	0	**0,26	**4,22	0,66	10,88
Aug.	0	0	*0,02	*0,30	0	0	0	0	0	0,07
Sep.	0	0	0	0	0	0	0	0	0	0
Oct.	0	0	1,80	29,51	64,15	1051,57	No sampling		21,98	360,36
Nov.	91,30	1496,78	*0,01	*0,13	15,71	257,47	No sampling		35,67	584,80
Dec.	0	0	0	0	0	0	No sampling		0	0
MEAN	16,51	270,59	0,59	9,61	7,84	128,44	0,66	10,78		

According to Table 1, especially in October and November the values are much higher than the other months of the years. On the contrary, June'05 is an exception, but the other summer months and May values are low and September values are zero for all the four years. For these 5 months we may assert that fish inhabit deeper levels that our gear was unable to reach. This behavior can be estimated as the effects of changes in the water temperature or as a spawning behavior. Yet the spawning period is given in [3] as May-September which reflects the absence of *H. mediterraneus mediterraneus* in our study.

Overall, 305 sexed individuals, 171 were female (56%), 73 were male (24%)

and 61 were juveniles (20%). Juveniles were mostly captured at depths between 300-440 m, in May'06, July'06 and '08. The most frequent size class for both sexes is 15 cm, for females 17 cm and for males 15 cm.

The parameters of the length-weight relationship of our study and previous studies on the same species from different localities are given in Table 2.

Tab. 2. Sample size (n), min. and max. length and weight, parameters of length-weight relationships (a and b) and the coefficient of determination (r²) from various studies and the present study (*)

Ref.	Locality	Country	L _{min}	L _{max}	W _{min}	W _{max}	n	a	b	r ²
4	Balearic Islands	Spain	4,3	21,1			101	0,0083	3,150	0,998
5	Algarve	Portugal	6,3	17,0	1,1	75,6	59	0,0179	2,865	0,920
2	Algarve	Portugal								
	Combined		4,0	21,0			429	0,0075	3,214	0,968
	Female		7,0	21,0			35	0,0085	3,159	
	Male		7,0	17,0			37	0,0028	3,581	
6	N Aegean Sea	Turkey	8,0	18,0	7,23	81,64	137	0,0149	2,950	0,980
*	Saros Bay	Turkey								
	Combined		4,0	24,6	0,83	209,7	1562	0,0101	3,104	0,991
	Female		8,2	22,4	6,76	168,56	171	0,0097	3,130	0,977
	Male		11,0	19,5	17,80	111,00	73	0,0107	3,096	0,967

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