

ABUNDANCE AND SIZE DISTRIBUTION OF *DIPLODUS VULGARIS* OF THE NATIONAL PARK OF THE CABRERA ARCHIPELAGO (BALEARIC ISLANDS) DURING SUMMER

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Diplodus vulgaris (E. Geoffroy Saint-Hilaire, 1817) is one of the littoral species which is caught by both sporting and small-scale fisheries. This work shows the size distribution and density of *D. vulgaris* in the waters around Cabrera National Park, where since 1991 only small-scale fishing has been permitted.

The following stations have been studied: 3 stations of rocky blocks at 5 and 25 m depth (RB1-3, photophilic algal community), 1 station at 40 m (SAC, sciaphilic algal community), and 2 stations of vertical cliffs (VC1-2, photophilic algal community) at 5 and 15 m. Quantitative estimates of abundance and size (accurate to 4 cm) of *D. vulgaris* were carried out in transects 100 to 210 m long by 10 m average width, using a visual census technique. Censuses were repeated for at least 5 consecutive days between June and August 1993 between 10.00 and 14.00 g.m.t. Size frequencies and depths at each station were compared using the similarity percentage index, using the VITMAN program (J. LLEONART, unpubl.). This index

Stations	Abundance(S.E./C.L.95%)	Biomass(S.E.)
RB 1 (5 m)	26,11(20,76 - 32,8)	3000,0± 943,6
RB 1 (25 m)	25,03(18,88 - 30,5)	7729,2±1749,3
RB 2 (5 m)	9,91(5,11 - 18,3)	1423,4± 470,0
RB 2 (25 m)	46,94(33,12 - 66,7)	8086,1±2264,5
RB 3 (5 m)	103,58(72,96 -147,4)	17689,5±4861,8
RB 3 (25 m)	69,10(33,12 -144,0)	11100,6±3012,6
SAC	4,15±0,91	590,5± 171,5
VC 1 (5 m)	3,72±0,49	306,9± 105,2
VC 1 (15 m)	2,35±0,66	190,5± 66,5
VC 2 (15 m)	6,50±1,39	381,7± 141,0

Table 1.- Abundance, biomass and standar error of *D. vulgaris* per 1000 m²

measures the area of intersection of distributions in relation to the area of their union. Biomass is calculated by applying values of the weight-length relationship derived from the literature (C.G.P.M., 1980) to the average frequencies by size class. The greatest abundance and biomass of *D. vulgaris* was obtained in the stations with the photophilic algal community blocks (Table 1). Amongst these, station RB3 showed the greatest abundance in shallow waters, probably due to the greater hydrodynamism of this area. The results obtained are similar to those of GARCIA-RUBIES and ZABALA (1990) for exposed zones located inside and outside the Medes Islands reserve. Maximum biomass values were obtained at the two depths of station RB3.

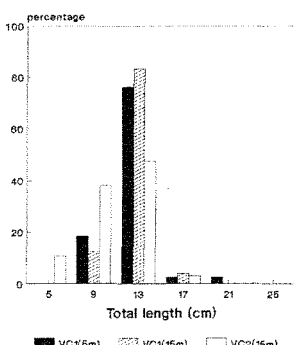
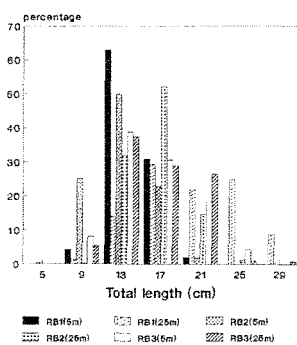


Fig. 1 and Fig. 2.- Length of *D. vulgaris* in rocky block (Fig.1) and vertical cliffs (Fig. 2) with photophilic algal community.

The observed size ranges vary between 5 and 32 cm at those stations over photophilic algal community blocks, 5 and 20 cm at cliffs, and 12 and 25 cm over the sciaphilic algal community blocks (Fig. 1 and 2). With the exception of the 25-m-depth blocks of stations RB1 and RB2, modal size is between 13 and 16 cm. At 25 m, modal size is less homogeneous at stations RB1 and RB2. An increase in size was noted with depth, the mode being 17- 20 cm. Moreover, at station RB2, a second, less pronounced mode is seen at 25-28 cm size. Values of similarity index of size distribution are given in Table 2. The greatest similarity in size frequency appears between the two depth levels of stations 2 (0.91) and 3 (0.91). There is a general clear tendency for size increase with depth, both within the same station and throughout the study area.

	RB1(5)	RB1(25)	RB2(5)	RB2(25)	RB3(5)	RB3(25)	VC1(5)	VC1(15)
RB 1 (25m)	0.47							
RB 2 (5m)	0.79	0.40						
RB 2 (25m)	0.65	0.59	0.57					
RB 3 (5m)	0.76	0.67	0.72	0.8				
RB 3 (25m)	0.73	0.68	0.67	0.77	0.91			
VC 2 (5m)	0.72	0.21	0.73	0.37	0.52	0.48		
VC 2 (15m)	0.71	0.19	0.66	0.36	0.51	0.47	0.91	
VC 3 (5m)	0.55	0.18	0.76	0.35	0.50	0.46	0.69	0.63
SAC 3	0.84	0.54	0.76	0.82	0.77	0.57	0.55	0.53

Table 2.- Similarity matrix of size distribution of *D. vulgaris* between differents stations and depth.

REFERENCES

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