LITTORAL FISH COMMUNITY OF CABRERA NATIONAL PARK (BALEARIC ISLANDS) : QUALITATIVE DATA

O. RENONES[1], J. MORANTA[1], J. COLL[2], B. MORALES-NIN[2] and P. OLIVER[3]

[1] Laboratorio de Biologia Marina, Universitat de les Illes Balears,
[2] Institut d'Estudis Avançats de les Illes Balears, Campus Universitario,
[3] Centro Oceanográfico de Baleares, Apdo. 291.
07080 Palma de Mallorca, Spain

Studies of marine reserves in the Mediterranean have been carried out by comparing protected with non-protected areas (BELL, 1983; GARCIA & ZABALA, 1991; FRANCOUR, 1989, 1991). However, comparing the same zone over a period of time would seem to be the best way to evaluate the changes which occur as a result of differing approaches to management in a protected area (ROBERT & POLUNIN, 1992). This study provides information about littoral fish populations of Cabrera National Park. These data will permit future evaluation of the changes produced by the management measures adopted. Visual censuses were used to evaluated the mean and total species richness in transects of 50 m long and 5 m wide. The following sampling stations have been studied : 3 stations of rocky blocks at 5 and 25 m depth and 2 stations over vertical cliffs at 15 m (photophilic algal community), 2 stations at 40 m (sciaphilic algal community) and 1 station over *Posidonia oceanic*a at 15 m depth. During summer 1993, five replicates on consecutive days of each station were made between 10.00 and 14.00 g.m.t. Cluster analysis was applied to qualitative data from samples. The Jaccard index was chosen as measures of the similarity, and UPGMA was used as the aggregation algorithm (SNEATH & SOKAL, 1973). A total of 49 species from 20 families has been recorded. Labridae dominated the community with 10 species and other important families were Sparidae and Serranidae (Table 1). Greatest species richness has been seen at stations on shallow blocks and it is attributed to greater trophic abundance (HARMELIN, 1990). The structural complexity of the environment and the depth gradient, with distinctive associated benthonic communities, were the two discriminant factors shown by the samples.

The samples from blocks at 40 m depth are the first group to appear in the cluster analysis (Fig. 1) and they are characterized by the presence of species only seen in these transects (*A. anthias* and *G. vittatus*) and the corresponding absence of those with shallower distribution (*E. guaza, S. scriba, S. salpa, S. ocellatus, S. roissali, T. pavo, G. buchichi, T. delaisi* and *T. melanurus*). Secondly, the samples from the *P. oceanica* beds separate out. The last to separate are the cliffs and blocks of the photophilic algal communities. In this case, structural complexity of habitat is more important than depth or sampling place in the determination of the qualitative composition of the fish communities between 5 and 25 m.

BENTONIC COMUNITIES	Photophilic								Sciaphilic		Posidonia
	blocks						cliffs		blocks		oceanica
Stations	1	2	3	1	2	3	4	5	4	5	6
Depth (m)	5			25			15		40		15
DASYATIDAE						1					
MURAENIDAE				1	1	1	1	1	1	1	
CONGRIDAE									1		
GADIDAE					1					1	
SERRANIDAE	2	3	2	3	2	4	3	2	2	2	1
APOGONIDAE	1	1	1	1	1	1	1	1	1	1	
CARANGIDAE		1									
SCIAENIDAE			1								
MULLIDAE	1	1	1	1	1	1	1	1			
SPARIDAE	5	5	7	5	3	3	2	1	1	2	
CENTRACANTIDAE			1	1	2	2			2	2	2
POMACENTRIDAE	1	1	1	1	1	1	1	1	1	1	1
LABRIDAE	10	10	6	7	9	8	4	4	4	6	6
GOBIIDAE		3		1	1	1		2	4	3	
BLENNIIDAE	1		1				1	2			
TRIPTERYGIIDAE	2	2	2	2	1	1					
SPHYRAENIDAE			1			1				1	
MUGILIDAE	1										
SCORPAENIDAE	1		1	2	3	2	1		1	1	
ATHERINIDAE											1
Mean S	18.8	19.0	17.2	18.0	17.0	17.8	11.4	11.0	11.4	13.0	8.4
(±SE)	0.85	0.94	1.02	0.54	0.89	1.07	0.40	0.70	0.51	0.54	1.35

Table 1. - Number of species by family and mean species richness.

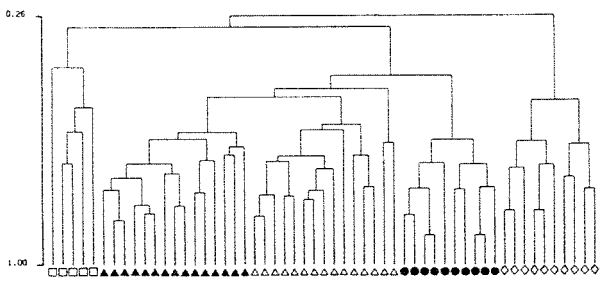

Fig. 1. - Dendogram of similarities between samples (□ : P. oceanica community; ▨ : Sciaphilic algal community blocks at 40 m depth; ▲ : Photophilic algal community blocks at 5 m depth; △ : Photophilic algal community blocks at 25 m depth; ● : Photophilic algal community cliffs at 15 m depth).

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