

NOTE ON FEEDING OF *SCIAENA UMBRA* L. (OSTEICHTHYES: SCIAENIDAE)  
IN THE CENTRAL ADRIATIC SEA

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**Abstract**

Feeding of *Sciaena umbra* collected around some man-made structures placed along the Italian coast of the central Adriatic sea was described through the analysis of the stomach contents. Benthic species dominated in the diet. Decapods, mainly represented by *Liocarcinus vernalis*, were the most important prey items followed by amphipods, polychaetes and benthic fish.

**Key words:** *Fishes, diet, artificial reefs, Adriatic Sea*

*Sciaena umbra* is a hard-substrate species living in shelters in rocky habitats. Along the Italian side of the central and northern Adriatic sea it can be only found around man-made substrates (artificial reefs, gas-oil platforms, wrecks, etc.) and in the few existing natural rocky habitats (i.e. Conero Promontory, Gabicce Promontory).

From January 1995 to February 1997, 174 specimens of *S. umbra* ranging from 15 to 38 cm of total length were collected during experimental fishing surveys carried out with trammel nets around two concrete artificial reefs and a gas-oil platform placed along the Adriatic coast between Ancona and Ravenna, on a sandy-muddy bottom, at depths ranging from 10 to 15 m. The stomach of each specimen was cut out and preserved in 7% formalin. The stomach fullness was noted employing the scale proposed by Vesey and Langford (1) and contents were identified to the lowest taxonomic level possible, counted and weighted. Percentage of frequency of occurrence F (2), percentage by number N (3) and percentage by weight W (4) were calculated for each prey species and/or group. The values obtained were used to calculate the "relative importance index" RI (5), which is based on the "absolute importance index" AI as follows:

$$AI = F + N + W \quad RI = 100 \cdot AI / \sum_{i=1}^n AI$$

where n is the number of the different prey categories.

This normalized index allowed to directly evaluate the contribution of the different prey items to the diet.

Because no differences were noticed in the diet of individuals caught at the three different places, in the final analysis all the data were pooled together. The results obtained were summarized in Fig. 1 and in Table 1.

*S. umbra* towards these preys. The group of Decapoda was dominated by *Liocarcinus vernalis*, a very common species living in shallow waters and sandy-muddy bottoms. It showed the highest percentage by occurrence and by weight (Tab. 1) and mainly consisted of small-size individuals having an average weight of  $0.5 \pm 0.2$  grams.

Other important decapods in the diet were: *Athanas nitescens*, *Brachynotus gemmellari*, *Processa edulis* and *Thoralus cranchii* ( $9.9 \geq RI \geq 5.7$ ).

Amphipods (RI = 11.35) and polychaetes (RI = 8.48) came respectively second and third in order of importance. These two groups showed similar values of occurrence (Fig. 1), but the first ones were more important as number of specimens while the second ones were more representative as weight. *Elasmopus rapax* was the most abundant species among the amphipods and also showed the highest percentage by number in respect to all the other preys (Table. 1). Polychaetes were almost exclusively represented by *Marphysa sanguinea*, an ubiquitous organism living in burrows in sandy-muddy bottom or in galleries formed in fissures of rocks. It is common in the benthic community settled either on the man-made structures and in the soft bottom just close to them (6, 7).

Finally, fish occurred in 6.8% of stomachs and were only found in specimens ranging from 24 to 31.5 cm of total length. The other animal groups showed a very low importance in the diet of *S. umbra*, as evidenced by the corresponding RI values ranging from 1.22 (Gastropoda) to 0.17 (Foraminifera). Algae fragments were recorded only in one specimen.

These results clearly indicate that, in the size range considered, *S. umbra* feeds on a variety of animal organisms, but it shows a high preference for decapods. This agrees with what referred for the same species in the Gulf of Tunis by Chakroun and Ktari (8), even though these authors found also a high occurrence of plant food, probably ingested when the fish prey on the crustaceans living on either algae or phanerogames. The sporadic presence of plant food reported in the present study was likely because the vegetation cover is very poor in the investigated areas.

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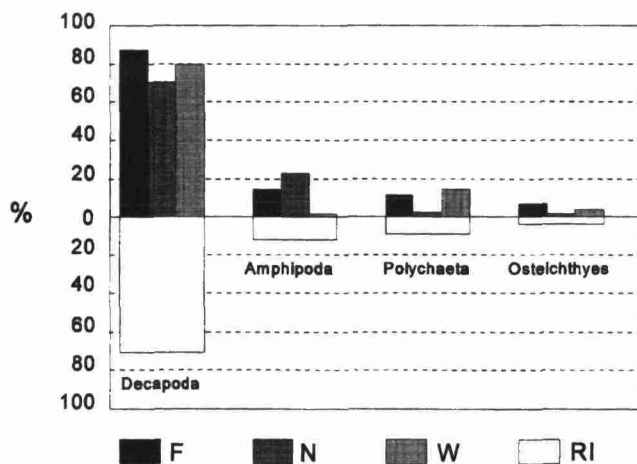


Figure 1. Values of F, N and W computed for the most important prey taxa. The corresponding RI values are also reported.

37% of the stomachs observed were full, 39% were partially full and the remaining 24% were completely empty.

Diet of *S. umbra* was characterized by benthic organisms and was dominated by crustaceans that occurred in 88% of stomachs and formed 94% by composition in number and 81% in weight. Decapods were the most representative group (RI = 70.53; Fig. 1); their percentage of occurrence was similar to their abundance, either by number and by weight, suggesting a homogeneous predatory behaviour of