

# JUVENILE FEEDING HABITS OF MUGILIDAE SPECIES FROM ESTUARINE SYSTEMS IN NORTH AEGEAN SEA

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## Abstract

The feeding preferences of 823 juvenile fishes belonging to five species of the Mugilidae family from Strymonikos Gulf estuarine systems were analyzed. A similar feeding strategy pattern was found for all species, except *M. cephalus*, which had one dominant food category.

**Keywords:** Diet, Estuaries, Fishes

Strymonikos Gulf is one of the richest fishing grounds in North Aegean Sea. The fish biodiversity observed in Strymonikos estuaries is among the highest recorded in the Mediterranean Sea [1]. Many studies have been conducted concerning fish fauna [1] and other aspects of the area [e.g. 2]. This is the first study of feeding habits of Mugilidae species in the Greek area.

## Materials & Methods

Samplings were carried out, using a bag seine net (12 m length, 3 mm bar mesh size), on a monthly basis from September 1997 to May 1999, in two sampling stations in each estuarine system of Strymonikos Gulf (Rihios and Strymon). Stomach content was analyzed using the percentage volumetric composition and the percentage of frequency of occurrence of each food category [3]. The vacuity index was also estimated for each species as  $VI\% = (\text{number of empty stomachs}) / (\text{total number of stomachs examined}) * 100$ . To determine the feeding strategy of the species the modified Costello graphical method [4] was used. Analysis of covariance (ANCOVA) was performed to compare the volume of gut content among sampling sites and seasons.

## Results & Discussion

A total of 823 specimens (Total Length: 14–130 mm) belonging to species *Chelon labrosus*, *Liza aurata*, *L. ramada*, *L. saliens* and *Mugil cephalus* were examined for their diet composition. The total vacuity index was 28.19%. *L. aurata* had the lowest vacuity index (18.15%) and *M. cephalus* the greatest (41.21%). The main food categories that were found in volume contribution of individual species diet included: phytoplankton (33%), amphipods (26%) and detritus (19%) for *C. labrosus*, mysids (40%), copepods (17%) and amphipods (16%) for *L. aurata*, phytoplankton (28%) and aquatic vegetation (20%) for *L. ramada*, phytoplankton (39%) and amphipods (31%) for *L. saliens* and phytoplankton (88%) for *M. cephalus*. A similar feeding strategy pattern, with varying degree of specialization, was followed by all species, except *M. cephalus*, which had one dominant food category (phytoplankton) (Fig. 1).

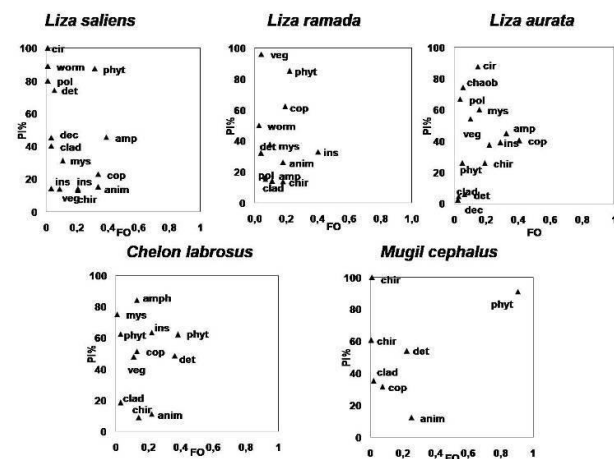


Fig. 1. Relationship among prey specific abundance (Pi%) and frequency of occurrence (FO) of food categories of Mugilidae species. Plots based on the modified Costello method [4]. (amp: amphipoda, cop: copepods, mys: mysids, anim: other animals, ins: unidentified insects, clad: cladocerans, det: detritus, chir: chironomids, phyt: phytoplankton, veg: aquatic vegetation, pol: polychaets, worm: other worms, dec: decapods, chaob: chaobors, cir: cirripedia).

## References

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