

Biology and population dynamics of Picarel (*Maena smarís* L), Family Centracanthidae, in the waters of Cyprus

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Introduction

Maena smarís L, is one of four species of the family Centracanthidae inhabiting the seas of Cyprus. It is one of the most important commercially species landed by the fishery in Cyprus. The study of this species was undertaken for the purpose of obtaining its biological parameters and other data necessary for the rational exploitation and management if its stocks.

Materials and Methods

A total of 46678 fish were measured for length distribution on board commercial trawlers and inshore fishing boats during 1966-1984. A further lot of 1530 specimens were examined for population analysis in the laboratory. Total length (LT) was taken to the 1/2 or 1-cm below. Age determination was done from otolith and partly from scale readings. For determination of maturity stages, the 8-stage Classification scale by Maier was used. (Laevastu 1965).

Age designation: This is shown below:

Age-group	0	I	II	III
Months old	0-9	10-22	23-35	35-47
Year-rings	0	1	2	3

The above designation agrees with the age-designation by Chugunova (1959) and Williams & Bedford (1973).

Results

Length-weight relation. M+F $W = 1.45715 \times 10^{-2} \times L^{2.85}$

V. Bertalanffy's Growth Formula parameters.

M+F $L_{\infty} = 22.2\text{cm}$ $K = 0.24$ $t_0 = -1.0$ $W_{\infty} = 100\text{g}$

Maximum age: 3.2 years

Sexual inversion: In *Maena smarís* appears the phenomenon of sexual dimorphism (proterogynous hermaphroditism) at the age of 2 years old. *Maena smarís* matures genetically at a length of about 10cm in its first year of life (11-12th month). Spawning starts at the end of March and is completed by the end of May. Female fish precedes male in the spawning process by 3 weeks at least. The catch of the trawl fishery consists of 4 age-groups, 0-III, of which age-groups I and II are the most important, providing the bulk of the trawlers' landings. The catch of the inshore fishery consists mainly of age-groups II and III, the most important being age-group II.

Age and length of recruitment to the trawl fishery:

$t_e = 6-7$ months old $l_e = 6-7$ cm

and for the inshore fishery $t_e = 2$ years old $l_e = 12-13$ cm

Total mortality (Z) and Fishing mortality (F) for the period 1966-1984, fluctuate for the trawl fishery between:

Z = 0.37-0.70 F = 0.07-0.40

and for the inshore fishery:

Z = 0.58-0.99 F = 0.28-0.69

References.

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