PRELIMINARY RESULTS ON THE BIOLOGY OF *PERISTEDION CATAPHRACTUM* (L., 1758) IN THE EASTERN IONIAN SEA

Mytilineou Ch. *, G. Christidis, A. Terrats and S. Kavadas
National Center for Marine Research, Agios Kosmas, Helliniko, Athens, Greece - * chryssi@ncmr.gr

Abstract
This study provides preliminary data on the reproduction, age and growth of *Peristedion cataphractum* in the deep waters of the Eastern Ionian Sea. The spawning period was extended, starting from summer with a maximum in autumn. The sex ratio was generally in favour of females, although during the spawning period it was close to 1:1. Eight age groups were identified based on ageing otoliths and the von Bertalanffy growth parameters were estimated.

Key-words: Peristedion cataphractum, Eastern Ionian Sea, age, growth, spawning

Introduction

The African armoured searobin, *Peristedion cataphractum* (L., 1758), is a deep-water demersal species found at mud bottoms and depths down to 700 m. Only one study, concerning its biology in Italian waters [1], and few other studies on its early life stages [e.g. 2, 3], are available. Available data from Greek waters concern its reproduction [4]. This study provides preliminary data on the reproductive period, sex ratio, age and growth of *P. cataphractum* in the deep waters of the Greek Ionian Sea.

Material and methods

Samples were collected by trawling in the northern part of the Greek Ionian Sea at depths ranging between 257 and 848 m, during three cruises from September 1999 to July 2000. The study of the reproductive period was based on the examination of the maturity stages of the gonads for 569 individuals using Nikolsky's scale [5]. The otoliths of 346 individuals, ranging in size between 67 and 286 mm total length (TL), were used for age determination. The Von Bertalanffy growth parameters were estimated using non-linear regression.

Results

The analysis of the female maturity stages per cruise (Fig. 1) showed that immature individuals (stage II) were always present in high percentages (>50%). Mature individuals (stages III and IV) increased in numbers from spring to summer. Their percentage decreased again in autumn, when the maximum percentage of spawning individuals (stage V) appeared. The latter appeared from summer. Post-spawning individuals (stage VI) were present from autumn with higher percentage in spring. The results for males were similar to those of females, although spawning individuals were observed only in autumn.

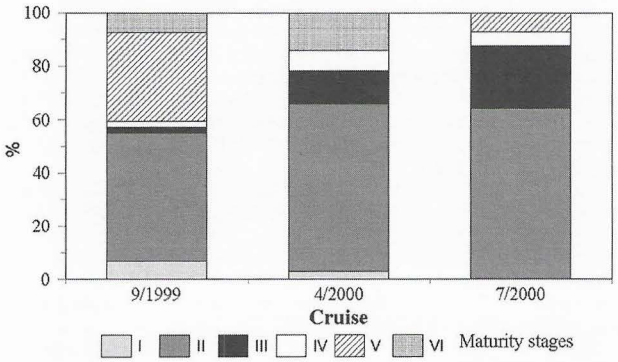

Fig. 1. Maturity stages of female *P. cataphractum* per cruise in the Eastern Ionian Sea.

The sex ratio was almost 1:1 in autumn (Table 1). In spring and summer, the sex ratio was in favour of females. The analysis of the sex ratio in relation to length showed that it was close to 1:1, with very large individuals (>285 mm) being females.

SURVEY	SEX	
	Male (%)	Female (%)
September 1999	49.6	50.4
April 2000	32.9	67.1
July 2000	40.0	60.0

Table 1. Percentage of male and female *P. cataphractum* in the Eastern Ionian Sea per survey.

Eight age groups were identified from age reading (Table 2) and the estimated growth parameters were: $L\infty$ = 384.03 mm TL, k= 0.182 yr^{-1}, t_0 = -1.3606 yr. The observed and estimated lengths-at-age are shown in Table 2.

Table 2. Observed lengths-at-age (mm, ±SE) of *P. cataphractum* in the Eastern Ionian Sea and their calculated estimates using the Von Bertalanffy growth model.

Age	Observed Lengths (TL, mm) ±SE	Calculated Lengths (TL, mm)
0+	92.2± 2.8	-
1	128.4±1.8	134.1
2	176.2±1.5	175.7
3	212.7±1.7	210.4
4	236.5±1.9	239.3
5	265.7±3.6	263.4
6	264*	283.4
7	286*	300.2

* results from only one specimen

Discussion

Our results indicated that the spawning period of the *P. cataphractum* in the northern part of the Eastern Ionian Sea is extended, starting from summer with a maximum in autumn. The end of the period was not identified because of the lack of winter data. Our results coincide with those found for the southern part of the Eastern Ionian Sea [4], which show a long reproductive period with a peak in the gonadosomatic values from May to September and a maximum value in September for females and August for males. However, reproduction in the Sicilian Channel [2] takes place earlier, extending from spring to summer.

Regarding sex ratio, our results were similar with those mentioned for Sicilian Channel [2], indicating generally a slight predominance of females. However, sex ratio in autumn – almost 1:1 – might indicate a movement of males to meet females during the spawning period.

The estimated lengths-at-age, using the von Bertalanffy growth, parameters were close to those estimated for the Sicilian Channel [2], using a length-based method.

References

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