

DISTRIBUTION AND ABUNDANCE OF THE HOLOTHURIAN *OCNUS PLANCI* (BRANDT, 1835) IN THE NORTHERN AND CENTRAL ADRIATIC SEA

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Abstract

Data on the distribution and abundance of the holothurian *Ocnus planci* in the northern and central Adriatic Sea were collected by bottom trawl during 11 cruises of the Pipeta Expedition from 1985 to 1994. A total of 518 bottom trawl hauls were performed. The species was collected at depths from 20 to 174 m. The highest mean abundance was recorded on sand-silt-clay sediment ($185,97 \pm 565,69 \text{ N h}^{-1}$) at depth stratum from 25 to 50 m.

Keywords : *Echinodermata, Adriatic Sea.*

Introduction

The holothurian *Ocnus planci* (Brandt, 1835) is distributed in the Eastern Atlantic from the North Sea to West Africa and throughout the Mediterranean Sea on different types of substratum at depths from 5 to 250 m [1, 2]. It is common species in trawl by-catches from the continental shelf in the Adriatic Sea [3]. In this paper we present the distribution and abundance of *O. planci* on the continental shelf of the northern and central Adriatic Sea.

Material and methods

Samples were collected using the standard Italian bottom trawl [4] during 11 cruises of the Pipeta Expedition (7th - 17th cruises) in the Adriatic Sea from 1985 to 1994. The expedition sampled approximately 59000 km² of the Adriatic continental shelf at predetermined, permanent stations along ten transects (A - L) over different sediment types at depths of 10 to 430 m (Fig. 1). Total of 518 hauls were performed. The abundance (catch rate) of the species is expressed as the number of specimens per trawling hour (N h^{-1}). To calculate mean catch values at different substrata and depth strata only hauls from the area of species distribution were used, i.e., stations where the species was caught at least once. ANOVA and Tukey's test were performed.

toms investigated during the expedition. The highest mean abundance was recorded at stations on sand-silt-clay sediment ($185,97 \pm 565,69 \text{ N h}^{-1}$) at depth stratum from 25 to 50 m (Tab. 1). Additionally, high catch rates were recorded on relict sand, clayey relict sand and silty sand and sandy silt up to 50 m. Very small presence of *O. planci* was recorded on clayey silt and silty clay sediment (Tab. 1). The high standard deviation values of means (Tab. 1) denote the uneven species distribution in the area. ANOVA results and Tukey's test results show that the differences between catch rates on each sediment type are statistically significant ($P < 0.001$).

Tab. 1. Abundance (number of specimens per trawling hour, N h^{-1}) of *Ocnus planci* at different sediment types and depth strata during the Pipeta Expedition (1985-1994) in the Adriatic Sea. n - number of the trawl hauls, n+ - number of positive trawl hauls.

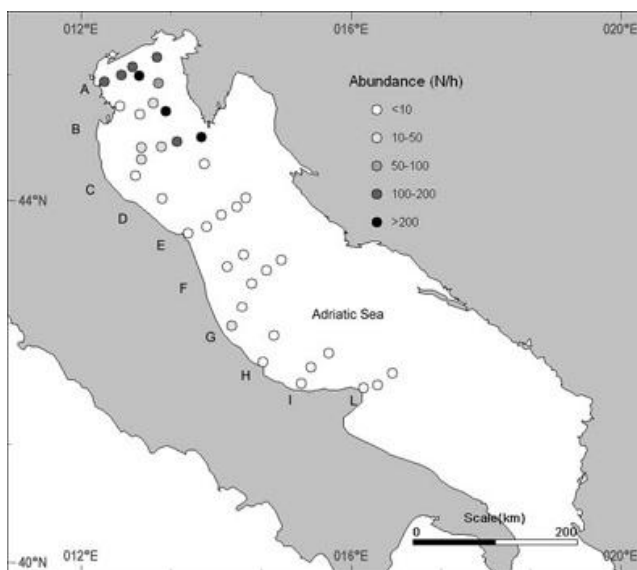


Fig. 1. Mean abundance (number of specimens per trawling hour, N h^{-1}) of *Ocnus planci* along transects in the Adriatic Sea during the Pipeta Expedition (1985-1994).

Results and discussion

Holothurian *Ocnus planci* was recorded in 35.5% bottom trawl hauls along all investigated transects in the northern and central Adriatic and is one of the most common species of the mobile bottoms (Fig. 1). The highest mean abundance was recorded at stations in the northernmost part of the northern Adriatic. The species was collected from a shallowest depth of 20 m and a deepest of 174 m, which presents the deepest record of *O. planci* in the Adriatic. The highest mean catch rates were obtained at depth strata up to 50 m. *Ocnus planci* inhabits all types of mobile bot-

| Sediment | Depth (m) | n | n+ | Abundance (N h^{-1}) | |
|----------------------------|-----------|-----|----|---------------------------------|--------|
| | | | | \bar{X} | SD |
| "relict" sand | total | 86 | 49 | 92.39 | 249.64 |
| | 10 - 25 | 17 | 16 | 139.34 | 75.16 |
| | 25 - 50 | 36 | 27 | 151.33 | 369.51 |
| | 50 - 100 | 22 | 4 | 5.58 | 18.01 |
| | 100 - 150 | 11 | 2 | 0.60 | 1.34 |
| clayey "relict" sand | total | 93 | 48 | 50.16 | 186.69 |
| | 25 - 50 | 32 | 27 | 143.68 | 299.43 |
| | 50 - 100 | 33 | 15 | 1.78 | 3.26 |
| | 100 - 150 | 19 | 5 | 0.37 | 0.75 |
| | 150 - 200 | 8 | 1 | 0.09 | 0.24 |
| | > 200 | 1 | 0 | 0.00 | 0.00 |
| sand-silt-clay | total | 30 | 18 | 185.97 | 565.69 |
| | 25 - 50 | 30 | 18 | 185.97 | 565.69 |
| clayey silt and silty clay | total | 164 | 66 | 2.85 | 7.57 |
| | 10 - 25 | 31 | 10 | 2.06 | 5.94 |
| | 25 - 50 | 42 | 24 | 4.22 | 7.73 |
| | 50 - 100 | 43 | 18 | 4.19 | 11.17 |
| | 100 - 150 | 39 | 12 | 1.09 | 2.52 |
| | 150 - 200 | 9 | 2 | 0.36 | 0.89 |
| silty sand and sandy silt | total | 3 | 3 | 135.93 | 113.26 |
| | < 25 | 3 | 3 | 135.93 | 113.26 |

References

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