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Food from above: Distribution of zooplankton over a deep water coral community in the Eastern Mediterranean Sea

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Zooplankton play an important role in the trophic dynamics of coral ecosystems. The present study focuses on the distribution of zooplankton at five stations, over deep water coral communities in the Mediterranean Sea near the coast of Paralimni, Cyprus. The area was explored for the presence of corals for the first time by the project CYCLAMEN (CYprus Cold-corals Levantine SeA, Eastern MEditerraneaN), during June, 2015. Zooplankton abundance averaged 195 ± 51 SD individuals m^{-3}, while spatial distributions varied for individual zooplankton taxa among stations. Copepods were the dominant group, with calanoid copepods being the dominant taxon among them (30-46%). Cyclopoids were the second most abundant copepod group comprising 15-37% of the abundance in the samples. Chaetognaths, followed by apendicularians, were the second and third most abundant groups. Their numbers was especially increased, 10% more than the average abundance, in the station directly above the coral assemblages, suggesting the ability of the system to maintain several trophic levels. Presence of other crustacea (cladocerans, ostracods, decapod larvae and others) also varied among samples ranging between 9-5%. Present findings indicate the area has higher zooplankton abundance when compared to historical data from downstream sites for the same season. Further investigation is suggested to define whether the presence of coral assemblages can be coupled with the increase in abundance of zooplankton and particularly the development of specific populations. Our findings provide important support for the pattern of zooplankton distribution over deep water corals.

Keywords: food web; deep water corals; zooplankton; Levantine; Mediterranean; Cyprus

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