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Holocene ostracods record of the karst lakes sediments, Cres and Mljet Islands, Adriatic Sea (Croatia)

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The present study focuses on Holocene freshwater to brackish ostracod assemblages from two Adriatic Islands, Cres and Mljet. Cres is the largest island in Croatia and is located in northern Adriatic Sea. In the center of the island is freshwater, karstic Lake Vrana, a monomictic and oligotrophic lake (Bukvić et al. 1997) some 1.5 km wide and about 7 km long. The lake is situated in a depression, with a maximum depth of 75 m. A recent multi-proxy study by Schmidt et al. (2000) suggested considerable lake-level oscillations during the last 16,000 years.

Samples from Lake Vrana were collected by scuba diving from the flat bottom (50 +/-2 m), located at different locations and water depths. The analysis of Holocene ostracod assemblages from Lake Vrana documented the occurrence of the following freshwater species: *Candona candida*, *Pseudocandona hartwigi*, *Ilyocypris bradyi*, *Metacypris cordata*, *Darwinula stevensoni*, *Cypria ophtalmica*, *Cypridopsis vidua*, *Cytherissa lacustris* and *Herpetocypris brevicaudata*.

The island of Mljet occupies the southeastern corner of the Croatian archipelago. This study focused on selected three marshy lakes: Blato, Sobra and Prožura. Marshy lakes from the island of Mljet reveal some interesting phenomena. These are huge sinkholes or small karstic "poljes", close to the sea and submerged with brackish water (Terzić et al. 2010). According to the authors, due to permanent subsurface connection with the sea, the seawater influence differs from the almost potable fresh water in Sobra and Blato, to almost 50 % mixture in Prožura. The ostracod assemblages of marshy lakes are dominated by *Candona angulata*, *Candona neglecta*, *Cypris bispinosa*, *Ilyocypris bradyi*, *Cyprideis torosa*, *Candonopsis* sp., *Cypridopsis vidua* and *Heterocypris salina*. The difference in the abundance of the above mentioned species from three marshy lakes varies, and it mainly depends on individual lake location, subsurface connection with the sea, and the depths of the cores.

This study suggests a clear difference between the stable deep-lake environment of Lake Vrana with its freshwater ostracod assemblages, and the shallow marshy lakes of the island of Mljet with their variable brackish to freshwater ostracod assemblages.

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