

**O29.7****Effects of the MOSE closure on meiofauna in the Venice lagoon (northern Adriatic Sea): preliminary results from a mesocosm study**

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**Abstract**

Among the coastal urban ecosystems, the Venice lagoon represents an inimitable case study since the human attempts to preserve the environment, the cultural heritage and the economic activities led to the construction of a large maritime engineering work, i.e. the MOSE system. It consists of rows of mobile gates installed at the three inlets aiming at isolating the lagoon temporarily from extreme high tides. Despite the protection that this system should offer to Venice, some concern has been raised about the effects on the environment of the prolonged lagoon segregation from the oxygenating seawater. To explore this issue, an in situ mesocosm experiment was set up in order to simulate a 48h MOSE closure. In July 2019, we positioned 18 enclosures (~ 0.8 m<sup>3</sup> each) in Palude di Cona to study short-term (4h, t1) and long-term (24h, t2; 28h, t3 and 48h, t4) effects on plankton and benthos at different trophic levels. A special focus was dedicated to meiofauna due to their pivotal role as the link between micro- and macrobenthos. Since in a time span of 48h a change in meiofauna diversity could not be detectable, we investigated if the organisms respond to the artificial closure in terms of migration through the sediments. In each mesocosm, two sediment cores (10 cm<sup>2</sup> inner surface) were collected, immediately subsampled in 5 sediment layers (0-1 cm, 1-2 cm, 2-3 cm, 3-5 cm and 5-10 cm) and fixed in 4% formaldehyde. Preliminary results suggest that both the two dominant meiofaunal groups, i.e. the nematodes and the harpacticoid copepods, tend to preferentially migrate towards the surface sediment layers within the experimental 48h time span. The dataset with a focus on nematode genera and their biological traits will provide more insights into the effects of the MOSE closure on these ecologically fundamental organisms.

**Keywords**

Meiofauna, urban ecosystems, mesocosms, artificial lagoon segregation