LUIGIA DONNARUMMA[1], LUCA APPOLLONI[1], ELISA BALDRIGHI[2], DANIELA ZEPPILLI[2], GIOVANNI FULVIO RUSSO[1], ROBERTO SANDULLI[1]

[1]Dipartimento di Scienze e Tecnologie, Università di Napoli "Parthenope", Napoli
[2]IFREMER, Centre Brest, REM/EEP/LEP, Plouzané, France

MOLLUSC DIVERSITY CHARACTERIZING THE SHALLOW HYDROTHERMAL AREA OF SECCA DELLE FUMOSE (GULF OF NAPLES, ITALY)

In the Mediterranean Sea, very shallow hydrothermal vents are reported for the Tyrrhenian and Aegean Sea. They are related to tectonically active coastal zones, with volcanic fluids composed mainly by sulphide and/or CO_2. In the present study, the distribution and diversity of mollusc assemblage inhabiting the Secca delle Fumose (SdF), a shallow hydrothermal area (9 – 14 m water depth) within Baia Underwater Archaeological Park, were investigated for the first time. The SdF is a submarine relief consisting of a dense aggregation of Roman pillars, among which thermal vents discharging hot gas-rich hydrothermal fluids occur. We selected 4 sites, two characterized by the presence of vent emissions (H, with white bacterial mat scattered on the bottom and CO_2 gas bubbling, and G, geyser with a yellow substrate around the opening) and two controls without vent emission, at comparable water depth. The highest mollusc abundance (79.51%) and species richness (90.79%) were reported at control sites. Decreased abundances (18.85%) and species richness (30.26%) were recorded at site G, while the lowest mollusc values were detected at site H (1.64% and 3.95% respectively). Furthermore, the only species occurring exclusively at sites H and G was the nassariid gastropod *Tritia cuvierii* (Payraudeau, 1826), probably due to the presence of microbial mats as additional food source, as it was previously reported for the congeneric species *T. neritea* (Linneus, 1758) in other vents systems. Our results show that extreme environmental conditions of hydrothermal vents strongly affect mollusc biodiversity, originating a very peculiar assemblage of species at site G and H.