

**Abstract del contributo 151****Lunedì, 23.09.2024 18:30 - 18:45****ID: 151 / SP.1b-DISTURBO: 5****Effetti del disturbo su specie, habitat ed ecosistemi****Presentazione orale****Argomenti:** Premio per la migliore comunicazione orale al congresso - Premio "Norberto Della Croce"**Growth rate, metabolic responses, recruitment and shell microstructures of *Ostrea edulis* resident population from the Gulf of La Spezia****Erica Gabrielli<sup>1,2</sup>, Sofia Lorenzini<sup>1,2</sup>, Chiara Lombardi<sup>1</sup>, Davide Seveso<sup>2,3</sup>**<sup>1</sup>Marine Environment Research Centre S. Teresa, ENEA; Via Santa Teresa, 19032 Pozzuolo di Lerici, La Spezia, Italy; <sup>2</sup>Department of Earth and Environmental Sciences DISAT; University of Milano Bicocca, Piazza della Scienza 1, 20126 Milano, Italy; <sup>3</sup>MarHE Center (Marine Research and High Education Center), Magoodhoo Island, Faafu Atoll, Maldives; [e.gabrielli1@campus.unimib.it](mailto:e.gabrielli1@campus.unimib.it)

The European oyster, *Ostrea edulis* (Linnaeus 1758), commonly known as the flat oyster, is a calcifying habitat-builder that provides ecosystem services such as climate regulation, biodiversity support, and enhancement of habitat complexity. As a key-stone species targeted as 'vulnerable and declining' under the OSPAR Convention, *O. edulis* beds have undergone various restoration projects across Europe. In the Gulf of La Spezia (Italy), the flat oyster has been present since the late 1800s, but the anthropogenic impacts have led to the near functional extinction of its habitat (i.e., oyster beds). Within the PNRR project RAISE, whose activities aim also to regenerate port areas using Nature-Based Solutions, a restoration initiative targeting *O. edulis* natural beds in the Gulf of La Spezia has been proposed. The PhD project will contribute to the knowledge on the resident population through the following objectives: **Ob1:** Monitoring the growth rate (length, width, thickness, and weight) and metabolic responses (respiration and calcification) in adult individuals collected within the harbor area and maintained in oyster cages. **Ob2:** Assessing the recruitment rate and settlement preferences of the population in three sites within the harbor area, using natural substrates and 'Chinese hats' commonly used as larvae catchers in oyster farming. **Ob3:** Investigating, in collaboration with the CNRS in Dijon (France), the functions and expressions of shell matrix components in oyster biomineralization. **Ob4:** Evaluating, in collaboration with the International Marine Centre in Sardinia (Italy), the impact of heat waves on the metabolism of *O. edulis*. In addition to biological data, physico-chemical parameters (temperature, oxygen, pH, pCO<sub>2</sub>, salinity, chlorophyll-a) are recorded through weekly or monthly campaigns as well as thorough high resolution underwater observatory. The present project contributes to the knowledge of *O. edulis* populations and in understanding long-term resilience of flat oyster in the Mediterranean sea threaten by climate change.