

## MANUELA PICCARDO

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### **Biosketch**

Graduated in Environmental Sciences in 2016 with an experimental thesis in Zoology applied to the conservation and management of natural systems focused on the quantification of microplastics in the sentinel species *Mullus barbatus*. He worked as a fellow at CoNISMA where she collaborated in the CLEAN SEA LIFE project (GIE / IT / 000999). Currently PhD student (XXXIII cycle) with a scholarship co-financed by the University of Trieste and the Anton Dohrn Zoological Station whose supervisors are Prof. Antonio Terlizzi and Dr. Paolo Sordino. His research activity falls within the scope of evaluating the effects of PET microplastics and PS nanoplastics on various marine species exposed in controlled laboratory conditions. She won a HORIZON2020 grant (N 730984) as part of the AssemblePlus project which allowed her to carry out a research activity at the Observatoire Océanologique de Banyuls sur mer (France).

### **Research**

Her Ph.D. allowed to study more deeply a form of pollution today considered among the most dangerous for the health and functioning of the oceans and seas: the plastic pollution. In particular, she is interested in studying the toxicity of the smallest fraction of plastic litter, i.e. nanoplastics (<1 µm) and small microplastics (<500 µm) which seems to be particularly alarming and capable to exert effects at different levels of biological organization. During her Ph. D. she analyzed their possible implications on diverse marine organisms testing the toxicity of realistic Polyethylene terephthalate (PET) microparticles on *Vibrio fischeri* bioluminescence, *Phaeodactylum tricornutum* growth, *Paracentrotus lividus* development and *Mytilus galloprovincialis* oxidative stress response in relation to global changes (e. g. sea acidification, availability of food). She had the opportunity, thanks to the AssemblePlus project, to attend the lab of the Observatoire Océanologique de Banyuls sur mer where she tested the toxicity of polystyrene nanoplastics in juveniles of *Amphiprion ocellaris*, better known as clownfish. The potential adverse effects were evaluated through the analysis of a wide battery of molecular and cellular biomarkers involved in the oxidative stress responses (e.g. CAT, GST, GR), on the total antioxidant capacity (TOSCA), as well as, on gene expression by RNA-sequencing techniques.

### **Publication**

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