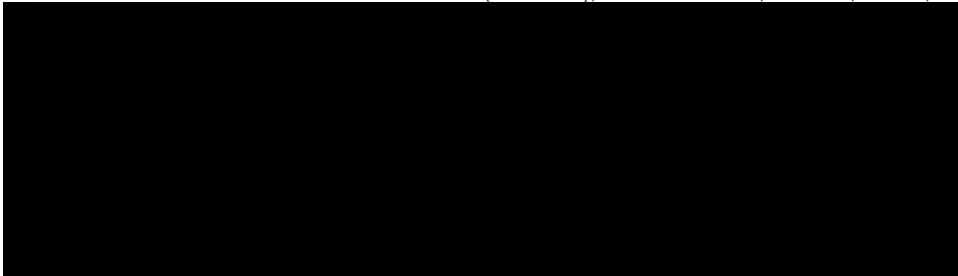


PERSONAL INFORMATION Elisa Costa

📍 National Research Council – Institute for the Study of Anthropic Impacts and Sustainability in the marine environment (CNR-IAS), via de Marini 16, Genova, 16149, Italy



Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input checked="" type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

1 February 2022-to date

Researcher (Permanent position)

National Research Council - Institute for the Study of Anthropic Impacts and Sustainability in the Marine Environment (CNR-IAS).

- Main research fields: ecotoxicology; anthropic impacts in marine environment; environmental monitoring through the use of bioassays on marine invertebrates including gelatinous zooplankton (i.e jellyfish); sampling and assessment of the micro and mesoplastic presence in different marine compartments (water, sediment, biota sample, *Posidonia oceanica* meadow)
- member of “Ecotoxicology and Environmental monitoring” (ECOTOX) group at National Research Council – Institute for the study of Anthropic impacts and Sustainability in marine environment (CNR IAS)

EDUCATION AND TRAINING

Sector: Ecology

2018-2022

Post Doc-Research (not permanent position)

National Research Council – Institute of Marine Science (CNR-ISMAR) /Institute for the Study of Anthropic Impact and Sustainability in the Marine Environment (CNR-IAS).

- Study of the potential toxicity test of a wide range of traditional and emerging contaminants (i.e. nano and microplastics, nanomaterials, bioplastics and pharmaceutical compounds) and environmental matrices (sediments and water) on invertebrates’ model (bacteria, algae, crustaceans, cnidarian and echinoderms).
- Monitoring (sampling and assessment) of the presence of micro and mesoplastics in different marine compartments (water, sediments and biota samples);

2014-2018

Doctorate in Marine Science

National Research Council – Institute of Marine Science (CNR-ISMAR) in collaboration with University of Genoa and Acquario di Genova

- Study on the potential of ephyrae jellyfish (Cnidarian) as model organism in ecotoxicology for sea water quality assessment

2013-2014

Research fellowship

National Research Council – Institute of Marine Science (CNR-ISMAR)

	<ul style="list-style-type: none"> • Ecotoxicological characterization of marine sediment by using invertebrate model organisms
2010-20201	<p>Graduate in Marine Science (Master Degree) University of Genoa (Italy) in collaboration with CNR-ISMAR and Acquario di Genova</p> <ul style="list-style-type: none"> • Experimental thesis entitled "Evaluation of potential use of ephyrae jellyfish as biological model in ecotoxicological bioassay".
Mother tongue(s)	Italian
Other language(s)	English (B2 Upper - Intermediate English)
Job-related skills	Strong background in environmental monitoring, ecotoxicology, marine pollution, jellyfish behaviour, emerging contaminants
Higher Education & Training skills	Supervisor of several University theses (Bachelor, Master Degree) in Biology, Environmental Science and Marine Biology, Lecturer of the Marine ecotoxicology academic course at University of Genoa (Italy) since 2019, Organiser of Educational laboratories for students
Project Management skills	<ul style="list-style-type: none"> • Member of the Grant Office of CNR-IAS since 2022 • Project manager of Spoke 3 "Protection and care of environment" within the "ROBOTICS AND AI FOR SOCIO-ECONOMIC EMPOWERMENT "(RAISE) project financed by the Ministry of University and Research (MUR) with Investment 1.5 (M4C2) of the National Recovery and Resilience Plan (NRRP) aiming to support the development of an innovation ecosystem based on the scientific and technological domains of artificial intelligence and robotics, focusing on the needs of a specific regional context, namely the Liguria Region (N. 16861 del 20250121 (2025-CNR0A00-0016861).
Other skills	<ul style="list-style-type: none"> • Communication Responsible between the Spoke 3 "Protection and care of environment" and the Spoke 5 that stands at the intersection of research and market acting as a mediator between research and market, unleashing the potential of scientific discoveries and allowing companies to enhance technological progress, promoting collaboration, knowledge exchange and technology transfer within the "ROBOTICS AND AI FOR SOCIO-ECONOMIC EMPOWERMENT "(RAISE).

ADDITIONAL INFORMATION

Projects Participation in Research projects with different funding sources (EU, National and Private).

2024-2027 INTEGRANO "Multidimensional Integrated Quantitative Approach To Assess Safety And Sustainability Of Nanomaterials In Real Case Life Cycle Scenarios Using Nanospecific Impact Categories" HORIZON-CL4-2023-RESILIENCE-01 "In the framework of this project I'm involved in the ecotoxicological assessments focused on the ecosafety of innovative materials/products prior to their use, to prevent toxicity effects in the marine (water, sediments) environments by using standard and innovative bioassays by using model test-species belonging to different trophic levels, specifically Jellyfish (Cnidarian).

2022-2025 PNRR RAISE Robotics and AI for Socio-economic Empowerment PNRR, Missione 4 Istruzione e ricerca – Componente 2 Dalla ricerca all'impresa – Investimento 1.5, finanziato dall'Unione europea – NextGenerationEU "The RAISE project was financed by the Ministry of University and Research (MUR) with Investment 1.5 (M4C2) of the National Recovery and Resilience Plan (NRRP) which envisaged the creation and strengthening of innovation ecosystems on areas of technological specialization consistent with the industrial and research vocations of the reference territory, promoting and strengthening collaboration between the research system, the production system and territorial institutions. I'm involved, in "SPOKE 3 Protection and care of the environment" that develops innovative technological solutions to improve environmental monitoring and safeguard strategy and methodologies dedicated to the three environmental scenarios (water, air, soil) representative of the Ligurian territory. Within the project 7 of Spoke 3 automatic and smart technological solutions to be used directly in the field for environmental surveys, implementing biological testing during environmental monitoring actions were developed. Three biological early warning systems will be developed (i.e. based on bacteria, and larval/adult aquatic invertebrate's responses including jellyfish) as products of the project to monitor the aquatic health status, able to provide a real-time signal when pollution or other stress may occur in the natural environment.

2022-2025 PNRR NBFC National Biodiversity future Center, PNRR, *Missione 4, Componente 2, Investimento 1.4.*, is the first National Research and Innovation Center dedicated to biodiversity, funded by the MUR through European Union funds – NextGenerationEU that aimed to identify suitable strategies for monitoring, conserving, restoring and valorising the biodiversity of species and habitats in different Italian regions. Within the Spoke 2, I'm involved in the assessment of the potential effects of a wide range of pharmaceuticals compounds on invertebrates' models including jellyfish (Cnidarian).

2020-2023 JPI Oceans RESPONSE "Toward a risk-based assessment of MP pollution in marine ecosystem". RESPONSE aimed to integrate expertise on oceanography, environmental chemistry, ecotoxicology, experimental ecology and modelling to answer key research questions on fate and biological effects of microplastics (MPs) and nanoplastics (NPs) in marine ecosystems.

2017-2022: CLAIM "Cleaning Litter by developing and Applying Innovative Methods in european seas" EU H2020. CLAIM has been focused on the development of innovative cleaning technologies and approaches, targeting the prevention and in situ management of visible and invisible marine litter in the Mediterranean and Baltic Sea. Effectiveness of developed devices and methods have been demonstrated under real conditions. Additionally, CLAIM have been developed innovative modelling tools to assess the marine visible and invisible plastic pollution at basin and regional scales (Saronikos Gulf, Gulf of Lyon, Ligurian Sea and Belt Sea).

2017-2020: DUPLEXWASTE "Lean Duplex Stainless Steel for Urban and Industrial Waste Water" EU H2020. The project has been focused to evaluating the application of lean duplex stainless steel materials for urban and industrial wastewater. Issues concerning different types of corrosion in wastewater units will be investigated by means of laboratory and field exposures.

2016-2019 JPI Oceans EPHEMARE "Ecotoxicological effects of microplastics in marine ecosystems". EPHEMARE - Ecotoxicological effects of microplastics in marine ecosystems – This project aimed to evaluate the targets the uptake, tissue distribution, final fate and effects of microplastics in organisms representative of pelagic and benthic ecosystems, and the potential role of microplastics as vectors of model Persistent Pollutants that readily adsorb to their surfaces.

Publications

- 1) **Costa E**, Gambardella C, Piazza V et al. "Do Virgin and Chemical-Spiked Microplastics Affect Ephyrae Jellyfish Survival and Behaviour?" (2024) IEEE International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters (MetroSea), Portorose, Slovenia, 2024, pp. 6-10, <https://doi.org/10.1109/MetroSea62823.2024.10765649>.
- 2) Gambardella C, **Costa E**, Miroglio R, et al. "Early Warning Systems for Marine Monitoring," (2024) IEEE International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters (MetroSea), Portorose, Slovenia, 2024, pp. 24-28, <https://doi.org/10.1109/MetroSea62823.2024.10765783>.
- 3) Martinez M, Minetti R, La Marca EC, Montalto V, Rinaldi A, **Costa E** et al. (2024). The power of Posidonia oceanica meadows to retain microplastics and the consequences on associated macrofaunal benthic communities. Environmental Pollution, Volume 348, 123814, ISSN 0269-7491, <https://doi.org/10.1016/j.envpol.2024.123814>.
- 4) Gambardella, C, Miroglio, R, **Costa E**, et al (2024) New insights into the impact of leachates from in-field collected plastics on aquatic invertebrates and vertebrates. Environmental Pollution, 355,124233, ISSN 0269-749, <https://doi.org/10.1016/j.envpol.2024.124233>
- 5) Brouwer R, Huang Y, Huizenga T, Frantzi S, Le T, Sandler J, Dijkstra H, Beukering P, **Costa E** et al. (2023) Assessing the performance of marine plastics cleanup technologies in Europe and North America. Ocean & Coastal Management, Volume 238,106555, ISSN 0964-5691, <https://doi.org/10.1016/j.ocecoaman.2023.106555>
- 6) **Costa E.**, Gambardella, C., Miroglio, R. et al. (2023) Nanoplastic uptake temporarily affects the pulsing behavior in ephyrae of the moon jellyfish Aurelia sp. Ecotoxicology 32, 618–627.
- 7) Tsiaras K, **Costa E**, et al. (2022). Microplastics in the Mediterranean: Variability From Observations and Model Analysis. Frontier in Marine Science. 9:784937. <https://doi.org/10.3389/fmars.2022.784937>
- 8) Ben Ismail S, **Costa E** et al. (2022) Evolution of the distribution and dynamic of microplastic in water and biota: a study case from the Gulf of Gabes (Southern Mediterranean Sea). Frontier in Marine Science p. 786026 DOI <https://doi.org/10.3389/fmars.2022.786026>
- 9) Di Giannantonio M, Gambardella C, Miroglio R, **Costa E** et al. (2022). Ecotoxicity of Polyvinylidene Difluoride (PVDF) and Polylactic Acid (PLA) Microplastics in Marine Zooplankton. Toxics p.479 DOI <https://doi.org/10.3390/toxics10080479>
- 10) Pittura L, Garaventa F, **Costa E**, et al. (2022) Microplastics in seawater and marine organisms: Site-specific variations over two-year study in Giglio Island (North Tyrrhenian Sea). Pollution Bulletin p. 113916 <https://doi.org/10.1016/j.marpolbul.2022.113916>
- 11) She J, Buhalko N, Lind K, Mishra A, Kikas V, **Costa E** et al. (2022). Uncertainty and consistency assessment in multiple microplastic observation datasets in the Baltic Sea. p. 886357 DOI <https://doi.org/10.3389/fmars.2022.886357>
- 12) Piazza V, Gambardella C, Miroglio R, E. Costa, et al. 2022. Cold storage effects on lethal and sublethal responses of Amphibalanus amphitrite Nauplii. Ecotoxicology pp.1078-1086 <https://doi.org/10.1007/s10646-022-02571-1>
- 13) **Costa E** et al. (2020) Microplastics ingestion in the ephyra stage of Aurelia sp. triggers acute and behavioral responses. Ecotoxicology and Environmental Safety pp.10998 DOI <https://doi.org/10.1016/j.ecoenv.2019.109983>
- 14) **Costa E** et al. (2020). Trophic transfer of microplastics from copepods to jellyfish in the marine environment. Frontiers in Environmental Science, 8, 158. <https://doi.org/10.3389/fenvs.2020.571732>
- 15) Cormier B, Gambardella C, Tato T, Pedriat Q, **Costa E** et al. (2021). Chemicals sorbed to environmental microplastics are toxic to early life stages of aquatic organisms. Ecotoxicology and Environmental Safety, 208, <https://doi.org/10.1016/j.ecoenv.2020.111665>

- 16) Gambardella C, Morgana S, Ferrando S, Bramini M, Piazza V, **Costa E** et al. 2017 Effects of polystyrene microbeads in marine planktonic crustaceans. *Ecotoxicology and Environmental* pp 250-257 <https://doi.org/DOI 10.1016/j.ecoenv.2017.07.036>
- 17) Faimali M, Gambardella C, **Costa E** et al. (2017). Old model organisms and new behavioral endpoints: swimming alteration as an ecotoxicological response. *Marine environmental research*, 128, 36-45. <https://doi.org/10.1016/j.marenvres.2016.05.006>
- 18) Giussani V, **Costa E** et al. (2016). Effects of the harmful dinoflagellate *Ostreopsis cf. ovata* on different life cycle stages of the common moon jellyfish *Aurelia* sp. *Harmful Algae*, 57, 49-58. DOI <https://doi.org/10.1016/j.hal.2016.05.005>
- 19) Piazza V, Gambardella C, Canepa S, Costa E et al (2016) Temperature and salinity effects on cadmium toxicity on lethal and sublethal responses of *Amphibalanus amphitrite* nauplii *Ecotoxicology and Environmental Safety* (vol.123). pp: 8-17 <https://doi.org/10.1016/j.ecoenv.2015.09.023>
- 20) Costa E et al. (2016). Ecotoxicological effects of sediments from Mar Piccolo, South Italy: toxicity testing with organisms from different trophic levels *Environmental Science and Pollution Research*, 23:13, 12755-12769. <https://doi.org/10.1007/s11356-015-5471-X>
- 21) Faimali M, Costa E et al. 2016. Gelatinous Zooplankton as a Model in Marine Ecotoxicology. In: "Jellyfish: ecology, distribution patterns and human interactions. Nova Science Publisher 978-1-63485-688-1
- 22) **Costa E** et al. (2015). Effect of neurotoxic compounds on ephyrae of *Aurelia aurita* jellyfish. *Hydrobiologia*, 1, 75-84. <https://doi.org/DOI 10.1007/s10750-015-2284-3>
- 23) Gambardella C, **Costa E** et al. (2015). Effect of silver nanoparticles on marine organisms belonging to different trophic levels *Marine Environmental Research*. 111, 41-49. <https://doi.org/10.1016/j.marenvres.2015.06.001>
- 24) Faimali M, Garaventa F, Piazza V, **Costa E** et al. (2014). Ephyra jellyfish as a new model for ecotoxicological bioassays. *Marine Environmental Research*, 93, 93-101. <https://doi.org/10.1016/j.marenvres.2013.07.004>

Collaborations

Collaboration with Costa Edutainment Spa (Acquario di Genova) and Greenpeace Italia, Marche Polytechnic University and Palermo University, the industrial and research facilities of the reference Ligurian territory

Genova, 03.04.2025

Signature

