

RESEARCH THEME

XL cycle – a.y. 2024/2025

Title of the doctoral research

Designing for Marine Biodiversity and Ecosystem Restoration

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Abstract

In a global context where sustainability is no longer enough to give humanity hope of tackling the climate crisis, it's imperative to explore and develop approaches that aim not only to protect the environment, but also to regenerate it.

This shift towards Regenerative Design, supported by the European Regeneration Law, aims to establish a regulatory framework that promotes the regeneration of natural habitats, nature-based solutions and community participation. It is an important step towards a future where sustainable multi-species coexistence across ecosystems becomes the norm, signalling a fundamental change in our relationship with the planet. Adopting a regenerative approach requires a profound cultural shift that goes beyond existing policies to embrace new paradigms of thinking and living that value nature and our role in its stewardship. This shift is essential to address current challenges and to preserve natural resources and biodiversity for future generations.

The primary objective of this PhD proposal is to explore how multi-species and regenerative design, applied to the marine ecosystem, can effectively contribute to its restoration. Through multidisciplinary collaboration, the research aims to identify and develop new materials for transitions and innovative design strategies that mimic, are inspired by, or integrate natural processes and structures and then evaluate the impact of such strategies on marine biodiversity, environmental sustainability and human well-being.

This research will adopt an interdisciplinary methodological approach, integrating regenerative design with marine biology, environmental sciences and humanities and the concept of multi-species design. It will be carried out in close collaboration with Prof. Carlo Cerrano, a marine biologist from the Department of Life and Environmental Sciences (DiSVA), Università Politecnica di Ancona.

The expected impact of the research is to generate new knowledge and practical solutions for the regeneration of marine environments, with the expectation of making a significant contribution to marine biodiversity, ecosystem resilience and the well-being of coastal communities and reefs.

Keywords

Regenerative Design, Multispecies Design, Responsiveness, Materials for Transition