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## Volume degli abstract

## **1 = Lessons learned from the restoration of two *Cystoseira sensu lato* (Fucales, Ochrophyta) species in the Ligurian and Northern Adriatic Sea**

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Marine macroalgal forests play a key ecological role in coastal environments, but they are disappearing worldwide owing to human impacts and climate change. In the Mediterranean Sea, the loss of *Cystoseira sensu lato* forests (Fucales, Ochrophyta) has been recorded in many localities in the last decades. Because of their endangered status and their low recovery capacity, it is urgent to intervene actively to restore them.

ROCPOPLife is one of the ongoing restoration projects financed by the European Commission in the Mediterranean Sea, aiming at restoring, by recruitment enhancement, two *Cystoseira s.l.* species: the intertidal *Cystoseira amentacea* var. *stricta* in the Ligurian Sea, and the subtidal *Treptacantha barbata* in the Gulf of Trieste.

In light of the biological and practical knowledge gathered in the context of this project, we here synthesize these information, with the aim of proposing some directions to orient *Cystoseira s.l.* restoration actions.

The main focuses will be the choice of the restoration site, the cultivation protocol, the outplanting technique, the monitoring and the possible strategies to cope with both site-specific issues and extreme climatic events, like heatwaves and storms that are being recorded with increasing frequency and are set to shape future marine ecosystems.

Although it is possible to draw many practical considerations for the implementation of restoration actions, the main lesson learned from this project is that, before planning large-scale interventions, it is still necessary to study the biology of these species and to proceed with experimental trials to test methods tailored to the target species and habitats (i.e. density-dependent processes, tidal height/depth, physical and biotic stresses). The restoration of *Cystoseira s.l.* species is still at the outset.