DSV Seminars 2016

UNIVERSITÀ DEGLI STUDI DI TRIESTE

DIPARTIMENTO DI SCIENZE DELLA VITA

PhD Program in *Environmental Life Sciences*

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Seminar room, I floor, Q Building

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Host: Serena Fonda

Large-scale human impacts and the limited effectiveness of Marine Protected Areas

Research on Marine Protected Areas (MPA) has been intense over some decades. Empirical evidence indicates that MPAs harbor more diversity, higher abundance, and larger organisms than non-protected areas. Protection has been assumed to provide a valuable opportunity to test the top-down impact of predators and, as indirect effects, the ecosystem-level effects of fisheries. Measures of MPAs effectiveness have been mostly focused on exploited taxa, considering management of fish stocks as synonym with conservation of marine biodiversity. A strong, often disregarded limit in the effectiveness of MPAs, however, is that they fail to offer any protection from several major threats, acting often in a synergistic way outside their boundaries. Such threats include coastal modifications and subsequent changes in local hydrodynamic and sedimentary regimes, chemical pollution, disease epidemics and the spreading of exotic species. Through the analyses of real case studies, this talk underlines such an issue in marine conservation. The main conclusions are that MPAs are not isolated by large scale critical impact acting outside their boundaries and that they must be considered only as part of the solution to protecting and restoring ocean health. Attempts to protect biodiversity and/or restore ecosystem functioning (e.g., through the protection of over-exploited species that generate positive community-wide effect) might be frustrated and/or biased in their quantification by external pressures. The consideration of threats acting outside MPAs can provide to managers important elements to be considered for a sustainable management of coastal habitats and species.