



**CESAB**  
CENTRE FOR THE SYNTHESIS AND ANALYSIS  
OF BIODIVERSITY

# MAESTRO

Climate change effects on exploited marine communities

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The oceans account for more than 60% of monetized ecosystem services. Among these services, humankind critically depends on marine resources such as fish and benthic invertebrates for food and economic security. With ongoing fishing pressure and climate change strongly affecting the distribution and abundance of species at the global scale, our dependence on ocean ecosystem services urges us to better anticipate the future of marine resources and propose adaptive mitigation strategies.

While numerous projections of future species distributions have been produced, the expected alterations of trait structure within communities (i.e. the functional characteristics of species) have received far less attention. More precisely, **we lack integrated models and scenarios to better predict and anticipate the mixed impacts of climate change and fishing pressure on the types of diversity in marine communities that ultimately determine their functioning.**

By taking advantage of available data on long-term fish and invertebrate surveys, species traits, fisheries and the environment, the main goals of the MAESTRO project are thus:

- to characterize and assess the effects of climate and fishing on the functional diversity of exploited communities during the last three decades in the Northeast Atlantic and Mediterranean Sea,
- to forecast how exploited communities will respond to the upcoming warming until the end of this century, and
- to investigate, for several climate change scenarios, alternative harvesting strategies targeting different species and trait groups in order to minimize the impacts of fishing on functional diversity.

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*CESAB (CEntre for the Synthesis and Analysis of Biodiversity) is FRB's flagship program and an internationally renowned research center whose objective is to implement innovative work to synthesize and analyze existing data sets in biodiversity research.*

