

## **Managing a marine ecosystem under the impacts of multiple stressors**

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An important challenge for conservation is the understanding of how multiple human stressors, environmental factors and marine resources interact and influence each other. An Ecopath - Ecosim ecosystem model representing the continental shelf of the Israeli Mediterranean coast was calibrated and fitted to the available time series from early 1990's to 2010. This model was used to explore the historical dynamics of the ecosystem considering the effect of invasive species, fishing activities and climate change (through changes in temperature and salinity) as the main drivers and evaluate their historical cumulative effects. The model's predictions match satisfactorily with almost all of the observed data, especially regarding invasive groups. The model shows an increasing proportion of invasive species in biomass and catch over time, with important effects on the food-web. Results highlight the important role that fishing activities and climate change are playing in the ecosystem.