



ASSESSMENT of the IMPACT of HUMAN ACTIVITIES on MARINE ENVIRONMENT.



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Promoting Effective Governance of the Channel Ecosystem
Promouvoir une gouvernance efficace de l'écosystème de la Manche

Marine Renewable Energy (MRE) devices

- impact both on physical processes and marine life
- impacts can be observed not only around the devices but also at a larger scale (even regional) with a cumulated effect

- A wide range of impacts may arise
 - changes in hydromorphology – wave patterns, flow speed and direction, seabed alteration, coastal erosion ...
 - generation of noise and electromagnetic perturbations which can affect marine life
 - physical barriers (i.e., risk of collision)
 - artificial reef effect (devices act as shelters where fish densities and biomass are higher than in the surrounding pelagic environment)

- Need for businesses to increase their awareness of sustainability issues and to integrate these into their practices, especially when operating close to conservation areas.
- Local authorities and policy makers should encourage SMEs' sustainable development by recognizing their economic value and encouraging their development (CAMIS)
- In respect of managing fisheries within designated conservation areas, a common and replicable methodology is needed to (PANACHE):
 - identify areas with intense human pressures/impacts
 - to understand how implementation of spatial management measures may affect the inshore fishing industry
- Assess the level of risk that fishing activities present to the protected species and habitats in European Marine Sites
- Focus first on high-risk sites, is a good way for decision-makers to identify priorities for actions.



Fishing Boat Heading to Sutton Harbour, Plymouth (© Angela Carpenter / Plymouth University)

Pollution Events

- Responses to pollution events are species-specific
- Relative abundance of pollution-sensitive species may generate trophic cascade effects and modifications in ecosystem functioning (Marinexus).

Dredging, Substrate extraction

A few recommendations (SETARMS):

- a need to anticipate future regulations,
- to improve techniques to reduce negative effects on the ecosystem,
- to settle preventative actions and define recommendations to port managers. (through groups and organisations at different scales)

Fishing

- A high ecological and economical risk when living resources exploitation (fish, kelps...) are driven by short-term economic objectives → parameters such as nursery habitat degradation and population connectivity alteration should be carefully considered

Human
activities

- Marine traffic and recreational yachting activities are considered as primary dissemination vectors for non-native species



Monitoring of invasive species in harbours and marinas (© Wilfried Thomas / Station Biologique de Roscoff)

Climate
Change

- The ability to resist to climate change (i.e. temperature increase, acidification) differs among species.
 - Several maps showing the probable distribution of key benthic and demersal species in various climate change scenarios (CHARM3)
 - the invasive slipper limpet *Crepidula fornicata* was shown to be resistant to increasing water temperatures and acidification



*Invasive mollusc *Crepidula fornicata* (© Yann Fontana / Station Biologique de Roscoff)*

Identification of the need for integrated or common databases and for more representative data relating to human impacts.

Examples

- for fisheries, that data should provide greater insights into the industry and impacts on marine living resources and ecosystems
- for climate change, long term observations will help better anticipate the impacts and plan for the future
- for marine planning, genetic data can provide valuable indicators of environmental status while population connectivity studies can help identify the geographic scale of proposed marine protected areas

Channel-scale ecosystem management can be improved by :

- creating trans-national working groups
- anticipation of future environmental regulations
- design of targeted recommendations (e.g., recommendations for port managers in the context of dredging activities or invasive species dissemination)