

Workshop of WP5 participants, dedicated to presentation of results of the validation

Milestone 23

Dissemination level

Public

LEAD CONTRACTOR

SALT

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1. Final workshop WP5

1.1. Introduction

The meeting was held via Webex on 20th September, from 10:00 – 14:00. A total of eight people attended from 6 partners.

The main aim of the workshop was to assess to what extent the new methods and indicators developed through the DEVOTES project address the 11 descriptors of the Marine Strategy Framework Directive.

1.2. Contents of the workshop

During the workshop, we covered 12 indicators presented in DEVOTES Deliverable 5.5 "Report on the validation of the application of remote sensing devices and metagenomics approaches".

All the indicators were relevant to Descriptor (D) 1 Biodiversity, but additionally D2 (non-indigenous species), D4 (food webs), D5 (Eutrophication), D5 (Sea floor integrity), D7 (Hydrographic conditions), D8 (Contaminants) and D9 (Contaminants in seafood) were addressed with at least two or more of the new indicators.

Interestingly, D3 (Commercial fish populations), D10 (Marine litter) and D11 (Introduction of energy) were either poorly or not at all covered by any of the indicators. This can be explained by the nature of the descriptors – Especially for Ds 10 and 11, there is no substitute for actual measurements – for example amount of litter per unit environment (for example per kilometer of beachline, area of water surface or seafloor survey line). Similarly, for noise, indicators will consist of measurements (for example average noise level per class of vessel) and extrapolated to reflect the volume of traffic for the area of investigation.

The more recent DEVOTES Deliverable 3.3 "Report on the new indicators and methods for setting reference and target values" was discussed, particularly the descriptions of indicator relevance to the MSFD. Indicators assessed here were:

- Microbe (bio)diversity and indicator species
- Genetic based benthic microbial community condition and functionality assessment

- Share of cyanobacteria from total phytoplankton biomass as an early warning indicator for food web effects on zooplankton
- Surface Chlorophyll-a concentration from satellite measurements
- Production of phytoplankton
- Phytoplankton community composition as a food web indicator
- Phytoplankton community composition based on food quality traits as an early warning indicator for food web effects on higher trophic levels
- Phytoplankton taxonomic diversity (Shannon95)
- Phytoplankton taxonomic evenness
- Seasonal progression of phytoplankton functional groups
- Diatom/Dinoflagellate index
- Spring diatom/dinoflagellate biomass ratio (Black Sea)
- Biomass of copepods
- Mesozooplankton biomass
- Lower depth distribution limit of macrophyte species
- AZTI's Marine Biotic Index (AMBI)
- Genetic based macrobenthic community condition and functionality assessment
- Multivariate AZTI Marine Biotic Index
- Benthic quality index
- Distribution of herbivorous waterfowl in relation to eelgrass biomass distribution
- Size composition in fish communities (Typical length)
- Large fish indicator
- Mean maximum length of demersal fish and elasmobranchs
- Abundance and distribution range of established Non-Indigenous Species
- Trends in the arrival of new non-indigenous species
- Trends in the arrival of Non-Indigenous Species by pathway of entry
- Cumulative impact index of Invasive Alien Species

- High resolution habitat characterization

1.3. Conclusions of the workshop

All indicators addressed D1 (Biodiversity) and to various degrees the rest of the MSFD descriptors, with the exception of Ds 10 and 11, for reasons explained above.

The DEVOTES project has thus contributed to the development and validation of between 30-40 indicators for the MSFD, covering not only biodiversity (in its broad sense, including food webs and benthic habitats), but also most of the other descriptors in addition.

The workshop ended with a decision to produce a simple table to summarise the above findings and assessments made through in particular Deliverable 3.3.