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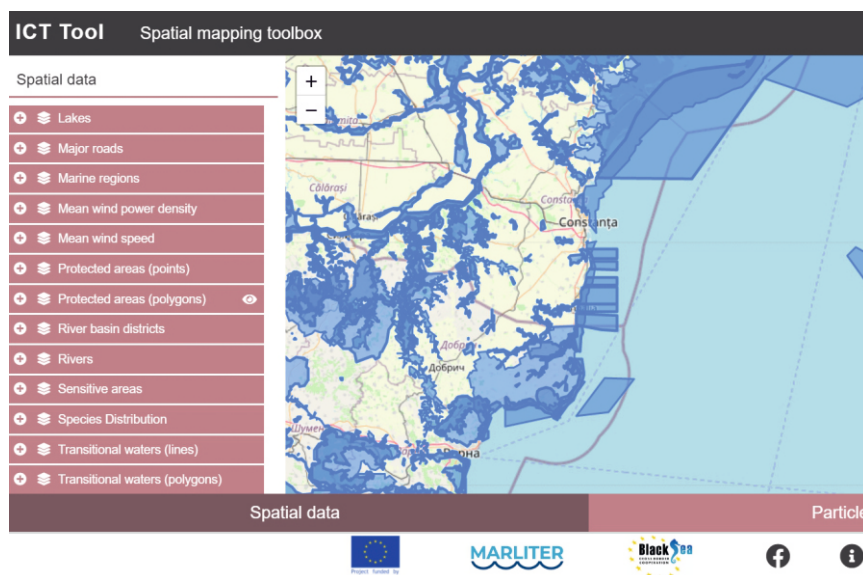
Environmental monitoring data for the Black Sea Basin and the reduction of marine litter marliter.bsnn.org

About MARLITER

MARLITER project provides online public access to environmental monitoring data and data tools about the Black Sea Basin. It is a joint effort of the Black Sea NGO Network of Varna, Bulgaria, NGO Mare Nostrum of Constanta, Romania, the Aristotle University of Thessaloniki, Greece, the Ukrainian Scientific Center of Ecology of the Sea of Odesa, Ukraine and the Black Sea Eco Academy of Batumi, Georgia. The five partners work together to improve cross-border cooperation in environmental monitoring and to promote coordination in the reduction of marine litter in the Black Sea Basin. One of the project objectives is to develop, activate and promote an information technology tool and data products. This has been achieved through an innovative web platform.

Interactive Tool

MARLITER has launched an innovative ICT tool for the Black Sea Basin designed to meet the needs of maritime stakeholders. As a central output of the project, this interactive, user-friendly portal supports various knowledge-based activities. It features up-to-date information on the monitoring and status of marine litter. A spatial mapping toolbox provides access to rich data about the coastal and marine environment in the five project countries and the region as a whole. A policy toolbox presents the legal framework for protecting marine environment at regional, EU and national level. Stakeholder databases outline the main actors responsible for designing and implementing policies and measures for marine litter reduction. A collection of good practices and recommendations charts the way forward for a cleaner Black Sea through the coordinated efforts of public authorities, private sector, research and educational institutions, as well as civil society and the general public.



Spatial mapping toolbox

This geographic information system (GIS) toolbox consists of two sections: *Spatial data* and *Particles movement*. They offer interactive handling of information about marine environmental factors. All data is displayed on a map interface. Over hundred geographical layers cover various open access data sets representing biotic and abiotic features, which are relevant to the state of the marine environment and the level of marine litter pollution at national and regional level. Each set of data is accompanied by additional description, temporal coverage of the observations, references and link to the original source. The datasets are freely downloadable.

Simulations in the section *Particles movement* show where plastic debris could end up ten years after release from different coastal cities across the Black Sea Basin. The evolution of the potential pathways of plastic particles is presented with a two-month step. Colour gradient from green to red represents the probability for a particle to reach a shore or remain in the open sea.



Black Sea seahorse by Florin Dumitrescu (CC BY-SA 3.0)

Status of marine litter

The portal section provides an overview of the status of marine litter. The summaries for Bulgaria, Georgia, Greece, Romania and Ukraine sketch a diverse, yet comparable picture of the efforts to stem solid waste pollution in the coastal and marine environment. Key findings about the sources of marine litter describe the flows of plastic coming from land-based sources, riverine input and activities at sea. Particular attention is paid to the latest findings about the amount, composition and distribution of beach litter. Another aspect is the density and type of seafloor litter coming from national surveys and pilot projects around the Black Sea and Greek waters in the Mediterranean. The findings on floating marine litter and microplastics highlight the latest available data on the distribution of plastics in the water column. Information from several countries about the impact of plastic debris and tiny particles on sea organisms is also provided.

Monitoring status

Information about the monitoring of marine litter as a basis for designing and implementing policies for pollution abatement is available for all five countries. It ranges from a summary of the latest state of affairs to a more specific evaluation of regional, national and local monitoring efforts. The coordination of regional monitoring efforts is framed by the Black Sea Marine Litter Regional Action Plan under the Bucharest Convention and the goals of the EU Marine Strategy Framework Directive. Bulgaria, Greece and Romania already implement national monitoring programmes including marine litter. Ukraine has adopted a national programme, which has to be realised in the near future. Pilot surveys and studies lay the foundation for a consistent monitoring programme in Georgia. Local monitoring efforts have gradually evolved from beach clean-up campaigns to more concerted regular surveys contributing data to the Marine LitterWatch initiative of the European Environment Agency.

Policy toolbox

The Policy toolbox guides users through the process of designing and applying effective policies on marine litter reduction. It features a review of national legislations, stakeholders' databases and recommendations on good practices. The purpose of the toolbox is to make data and resources readily available in a user-friendly format and assist administrations, businesses, scientists and experts in formulating policies that will benefit the marine environment and various users who depend on it.

The legal framework is displayed by a timeline starting with the first international conventions to protect the marine environment in the 1970s, the regional sea conventions of the 1990s, the development of EU environmental directives and the national legal acts up to 2020. The representation of stakeholders includes a description of the institutions and bodies with relevance for limiting marine litter pollution. The main groups are presented graphically and there is a brief note and link to each listed stakeholder. The variety of recommendations associated with good practices are organised under thematic topics. They provide access to national and regional experience in sectors such as waste management, port reception facilities, ship waste, fishing generated waste, as well as broader awareness raising, legislative and economic actions.



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