

## Initial Assessment in the frame of Marine Strategy Framework Directive in Romania –Lessons learned

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### Black Sea Basin



# Black Sea Basin

- Total surface 436 400 Km<sup>2</sup>
- Maximum depth 2212 m
- Most important rivers discharging into the sea: Danube, Dniepr and Don
- Population in the basin ~170 millions people
- Riverine countries: Romania, Bulgaria, Turkey, Georgia, Russian Federation, Ukraine

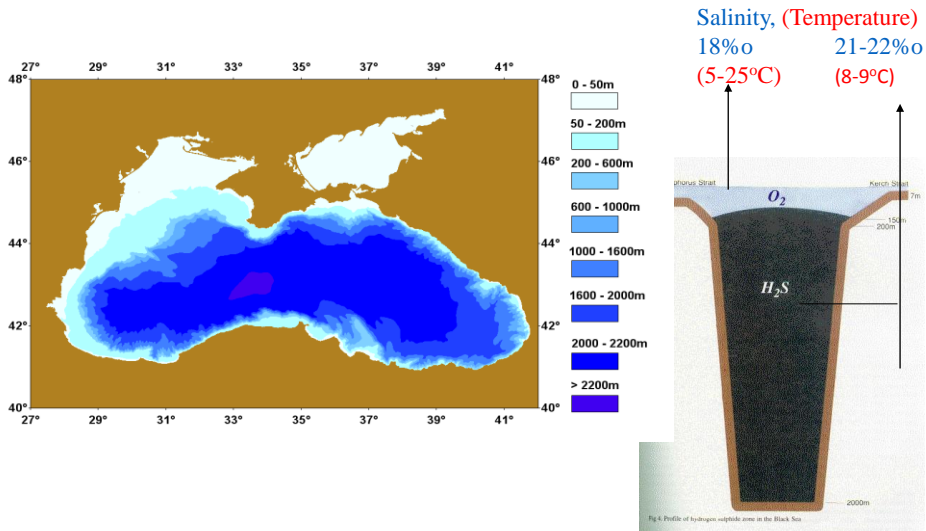
## Black Sea ecosystem



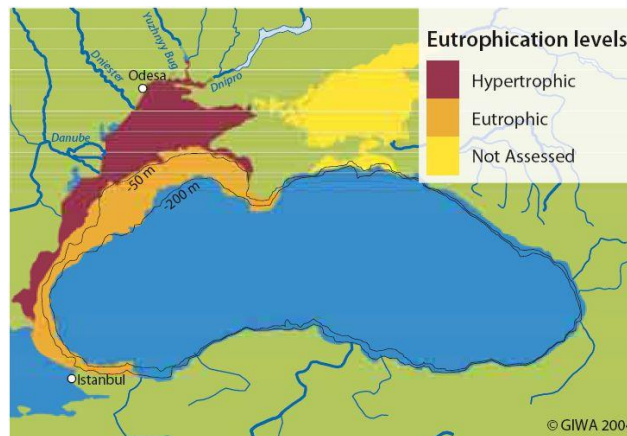
BLACK SEA  
✓ Most interesting  
✓ The youngest  
✓ Noah's flood?

## Bathymetry of the Black Sea & Anoxia

(5.5 x10<sup>6</sup> km<sup>3</sup>; Zaitsev & Mamaev 1997)



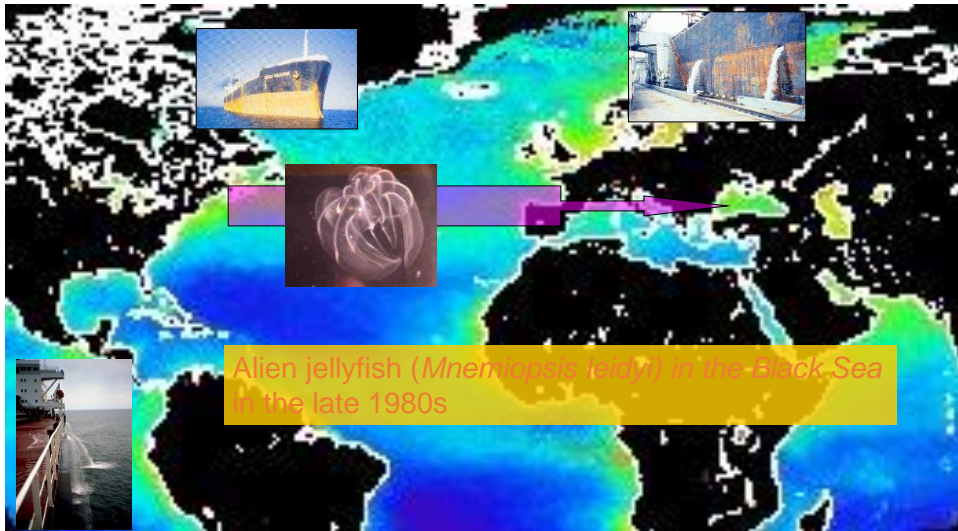
## Eutrophication



Eutrophication levels in the Black Sea (hypertrophic – red, eutrophic – orange, mesotrophic – yellow and blue).

(Source: GIWA, “Eutrophication in the Black Sea region”, 2005)

In the past, the Black Sea ecosystem experienced one of worst cases of negative impact from the ballast mediated invasive species



## Black Sea Environment

- Comparatively with other seas, the biodiversity of the Black Sea is somehow different.
- Most of the Black Sea species are immigrants from Mediterranean, who reach the Pontic basin 10,000 years ago, after the reopening of Bosphorus strait.
- Black Sea is in fact a “pocket” with a particular flora and fauna, originated mostly from Mediterranean.
- Black Sea ecosystems are more fragile, more sensible to changes comparatively with mediterranean ones.





## Objective of the Marine Strategy Framework Directive

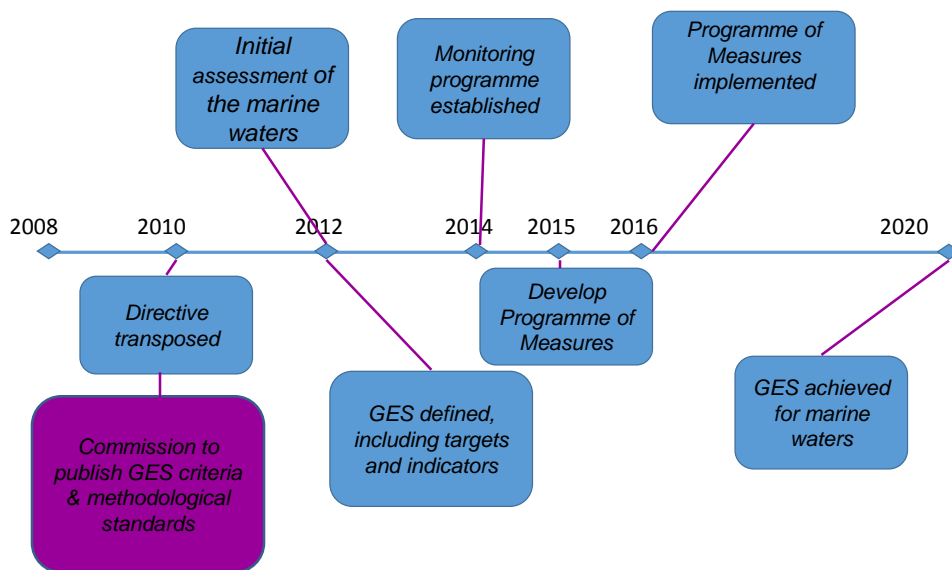
This Directive establishes a framework within which:

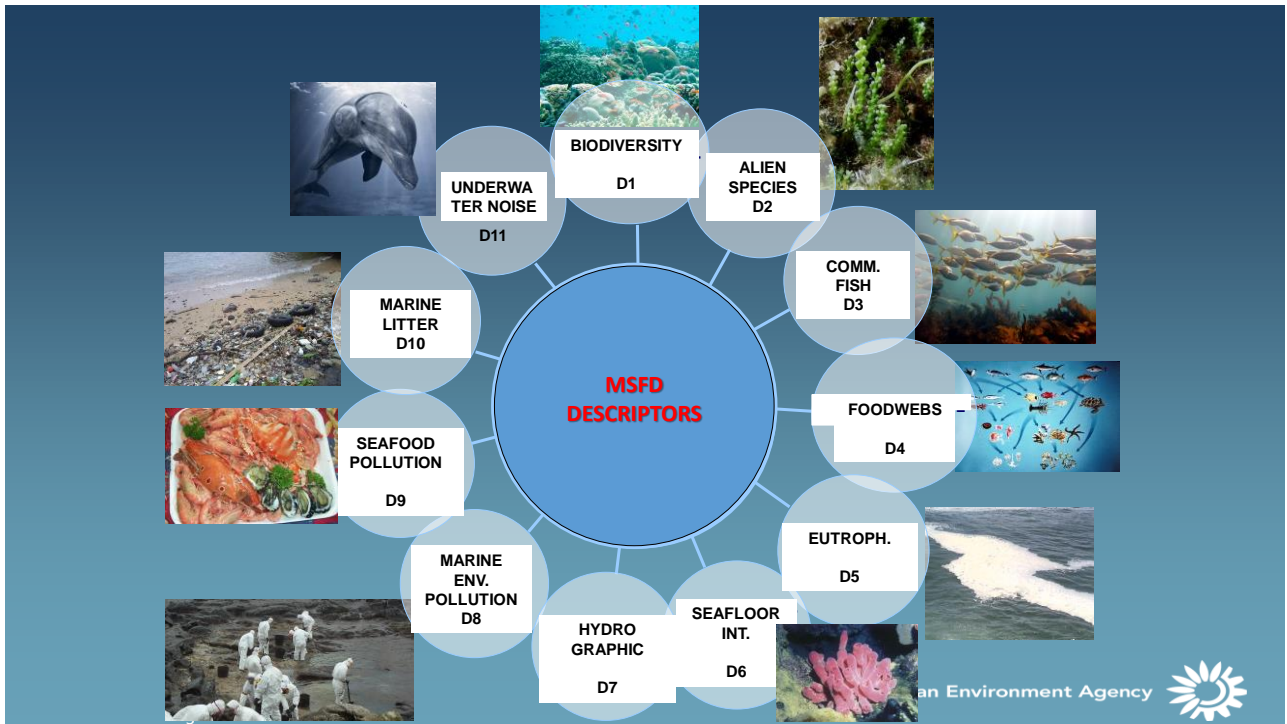
Member States shall take **the necessary measures** to achieve or maintain **good environmental status** in the marine environment by the year **2020** at the latest.

# Content of the MSFD

- An initial assessment of the current environmental status of the marine waters;
- A determination of what Good Environmental Status means for those waters;
- Targets and indicators designed to show whether a Member State is achieving GES;
- A monitoring programme to measure progress towards GES;
- A programme of measures designed to achieve or maintain GES.

## MSFD Timescales





## Initial Assessment

- A broad description and status assessment of the predominant, natural physical and oceanographical features, together with the ecological characteristics (species and habitats) present in the Assessment Area;
- An assessment of the human-induced pressures and impacts affecting environmental status;
- An evaluation of the socio-economic significance of the marine environment

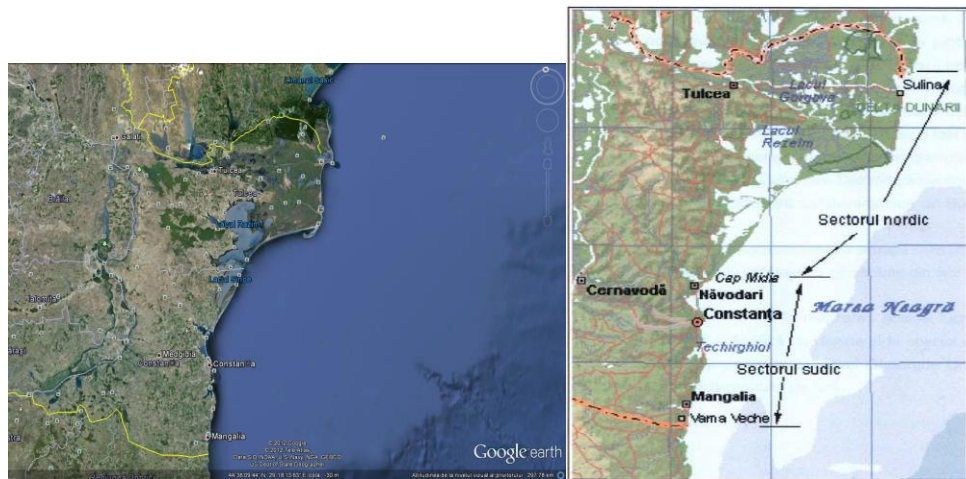


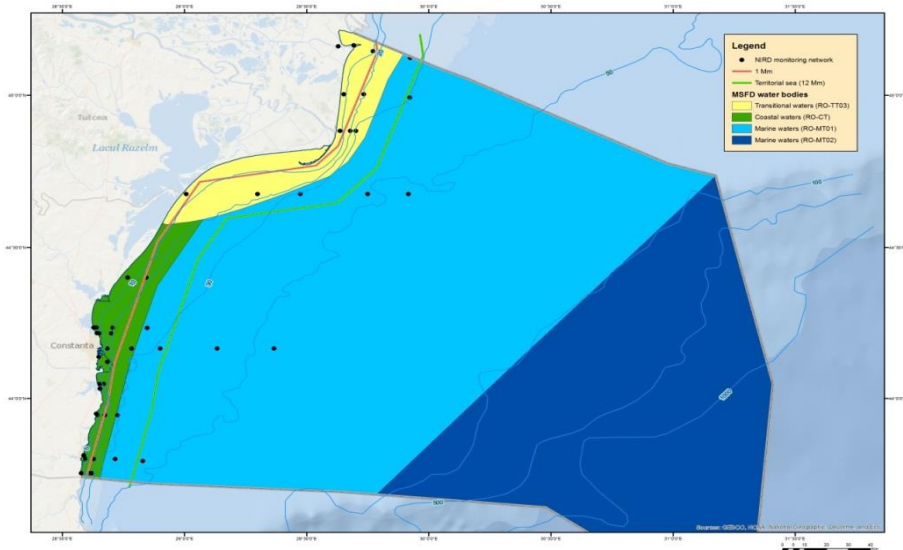
Fig.1. Romanian marine area

## Romanian Marine Waters

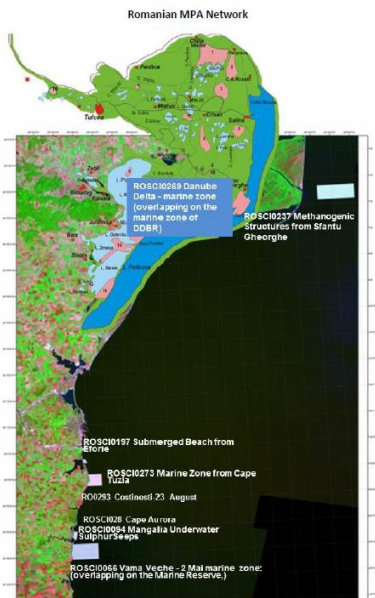
- Transitional waters (Danube Delta Biosphere Reserve)
- Coastal Waters (covered by the WFD)
- Marine Waters (Continental Platform)
- Marine Waters (Deep Sea)



## Water bodies delineation Romania



## Biodiversity



ROSC10269 2 Mai - Vama Veche Marine Reserve



ROSC10094 Underwater sulphide seeps from Mangalia



*Cystoseira* near a sulphide seep Photo Dragos Micu (NIMRD)



## Initial Assessment (1)

- It was done using a mixed approach
  - description of the physical-chemical and biological characteristics of the marine environment,
  - description of the pressures on the marine environment (e.g. nutrient and organic matter enrichment, contamination by hazardous substances) and the activities causing the pressures (maritime transport, hydraulic constructions, tourism and fishing)
- Marine waters includes three areas :
  - “Coast” defined as lying between the Periboina –Vama Veche –Mangalia
  - “Transitional” defined as lying between the Chilia – Periboina
  - “Marine” defined as marine waters from 1nm to shelf waters (50m isobath), between the Sulina – Vama Veche

## Initial Assessment (2)

- Regional cooperation is presented particularly the cooperation with Bulgaria and Black Sea Commission
- Economic and social analysis of marine has used the water accounts approach. The activities described include industry, ports, tourism, aquaculture and fisheries, offshore structures, oil and gas exploitation, shipping, waste disposal.
- The economic and social analysis of the cost of degradation is undertaken using the cost-based approach. The degradation costs were assessed based on the costs of the measures adopted to protect the marine environment.

# Gaps

- Missing data and information (particularly in the deep sea) at the entire Black Sea level
- Reliability of the existing data and information
- Lack of a common approach related to the descriptors at the level of the Black Sea
- Missing methods to identify the features of some descriptors
- Wrong interpretation

## Major environmental problems

- Eutrophication/nutrient enrichment ( Danube River the most important)
- Changes in marine living resources
- Chemical pollution (including oil)
- Biodiversity/habitat changes, including alien species introduction

## **Major Pressures**

- Pollution from land based sources
- Marine traffic and oil spills
- Invasive species and overfishing
- Excessive and illegal logging
- Intensive agriculture
- Unsustainable coastal development
- Region is vulnerable to climate change

## **Need for improvements**

- Improving knowledge in order to fill gaps, particularly for open sea for biological elements, waste, noise
- Improve the institutional capacity through training for using new monitoring and assessment methods for contaminants, biological elements (angiosperm, macroalge), sampling, treatment and analysis for samples from different matrixes (with focus on biota samples);
- Improve capacity for economic analysis to set up and assess the sustainability of the protection measures



## Lessons learned

- There is a need for research and data collection on all available information related to the descriptors
- Regional cooperation is essential for initial assessment of the marine waters
- There is a need for correlation of information at the regional sea level
- Sometimes you could have information with minimum efforts
- Concentrate on a limited number of most important measures
- Need to correlate with the Water Framework Directive
- Use all the opportunities to improve institutional capacity and knowledge (projects, twinnings)

