

Building a science-policy interface for ocean governance
in the Wider Caribbean, Barbados, 7-9 July 2010



Science-Policy Interface:

The Black Sea Commission System

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www.blacksea-commission.org

Map of the Black Sea





**Bridging: land and sea;
science and policy;
interests.....**

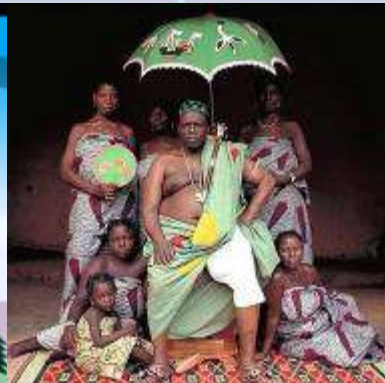
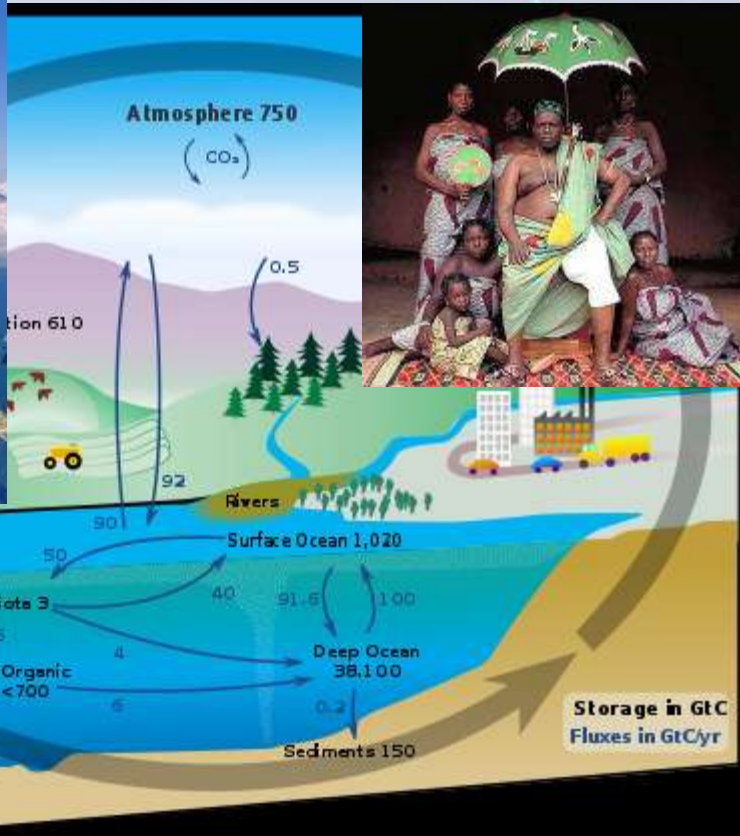
Environment - In general, environment refers to the surroundings of an object.



Anthropocentric perspective

Only after the last tree has been cut down,
Only after the last river has been poisoned,
Only after the last fish has been caught,
Only then will you find that money cannot be eaten.

"Ecocentric" perspective - justifying environmental protection on the rationale that human beings should normally regard themselves as a part of nature, not above or outside nature (**the weakest link**).



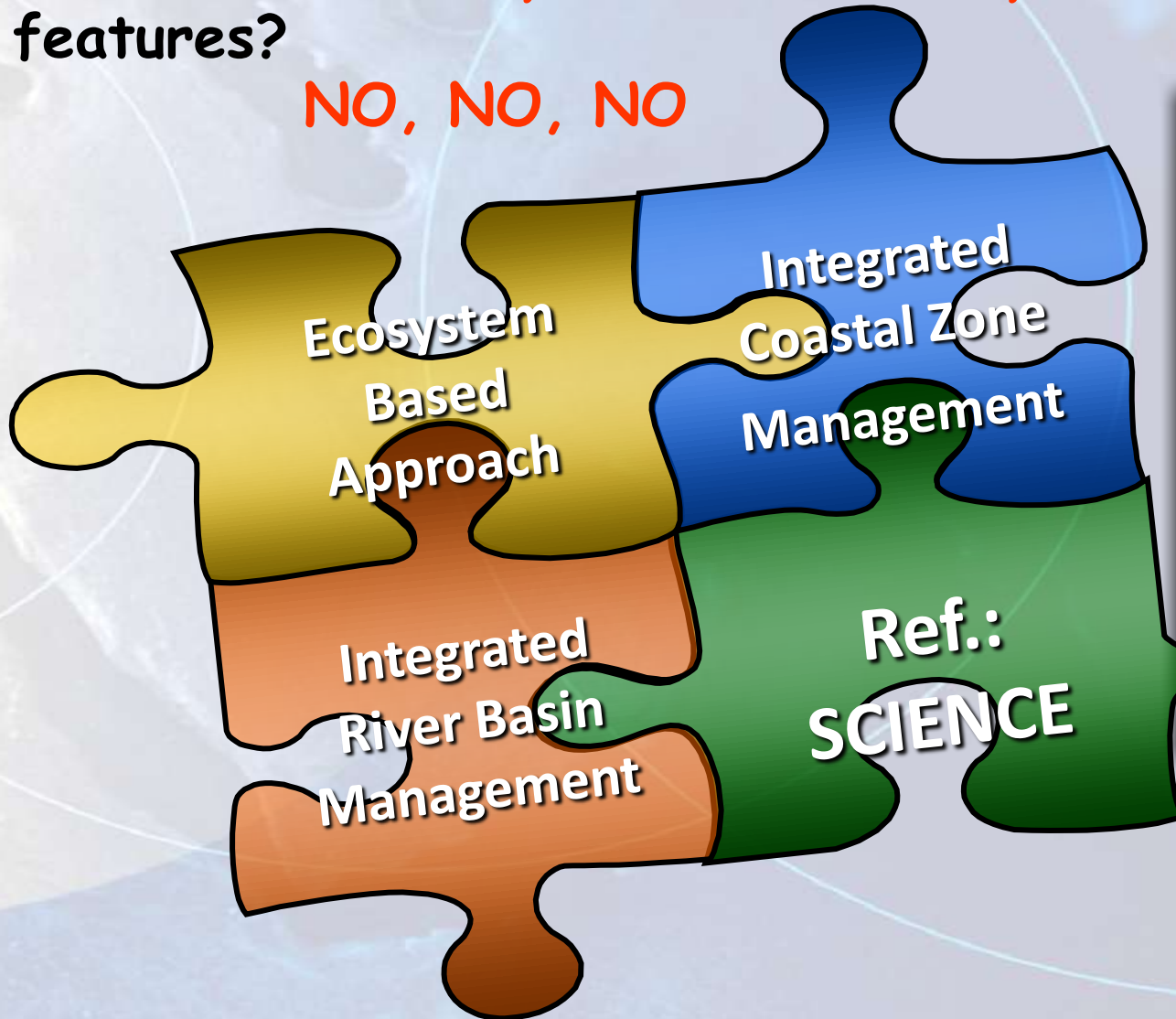
PRIORITY: Awareness - Quality of our life depends on the quality of environment!

PRIORITY: Management - Of the highest level of importance



Is there *necessary and unnecessary* environmental features?

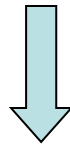
NO, NO, NO



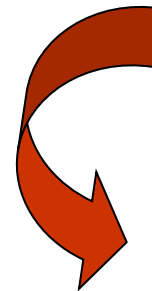
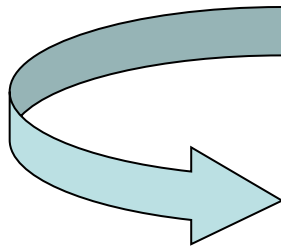
Human interest and Nature wellbeing



Increase economic prosperity without endangering the ecological recovery.



No net loss of natural capital or human capital.



People/policy makers have stronger preference to care about ecosystem functions which directly affect human welfare.

**PRIORITY: Valuation: Better UNDERSTAND
and value Ecosystems Goods and Services**



SPATIAL PLANNING

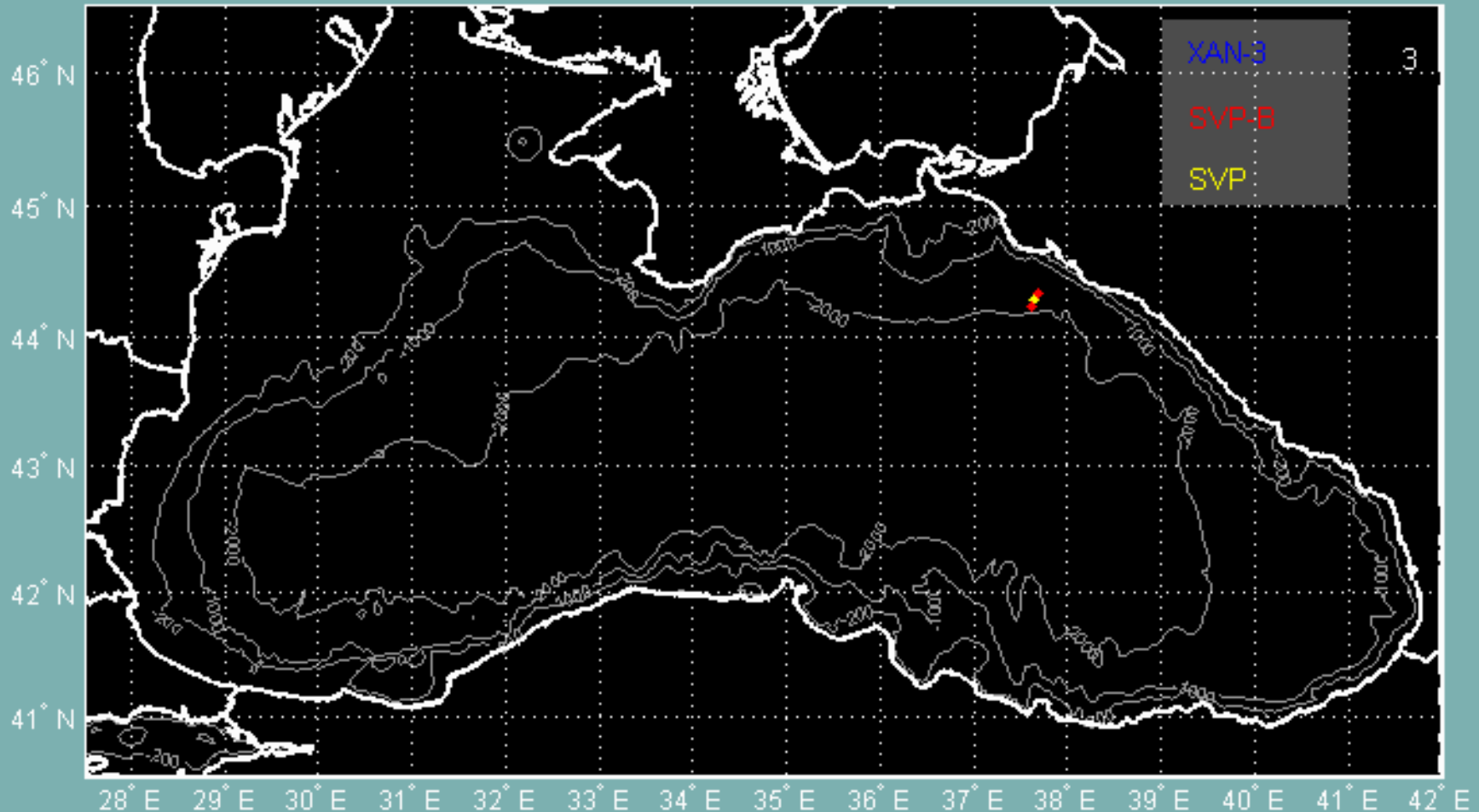
taking into consideration

CUMULATIVE EFFECTS



States with different level of development, different economic systems, different political interests and cultural heritage, but the Black Sea region is a **SHARED RESOURCE**. **Environment Problems - Transboundary**

DRIFTER POSITION ON 22-Oct-2001 12:00:00



The basis for regional cooperation

Bucharest Convention



4 Protocols



SAP1996 and 2009



Other Plans, Strategies and Guidelines





Strategic Goal: Good environmental status



Preserve commercial marine living resources through:

Sustainable use of commercial fish stocks and other marine living resources
Restore/rehabilitate stocks of commercial marine living resources.

Conservation of Black Sea Biodiversity and Habitats through:

Reduce the risk of extinction of threatened species.
Conserve coastal and marine habitats and landscapes.
Reduce and manage human mediated species introductions



Reduce eutrophication through:

Reduce nutrients originating from land based sources, including atmospheric emissions.

Ensure Good Water Quality for Human Health, Recreational Use and Aquatic Biota through:

Reduce pollutants originating from land based sources, including atmospheric emissions.
Reduce pollutants originating from shipping activities and offshore installations

EcoQO: EUTROPHICATION, CHEMICAL POLLUTION



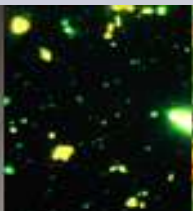
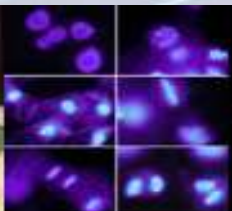
Assessment of **river loads (still the largest source of pollution)**, incl. likely contributions of different emissions to river loads. Harmonization of river monitoring strategies. River-basin management plans built.

Point and Diffuse sources identified (incl atm.), prioritized and tackled. DABLAS work.

Incorporate “market-based” instruments — principally pollution taxes and tradeable permits.

Introduction of standards, which require the use of clean technologies and phasing-out high waste and waste-generating technologies, including the use of BAT and BEP.

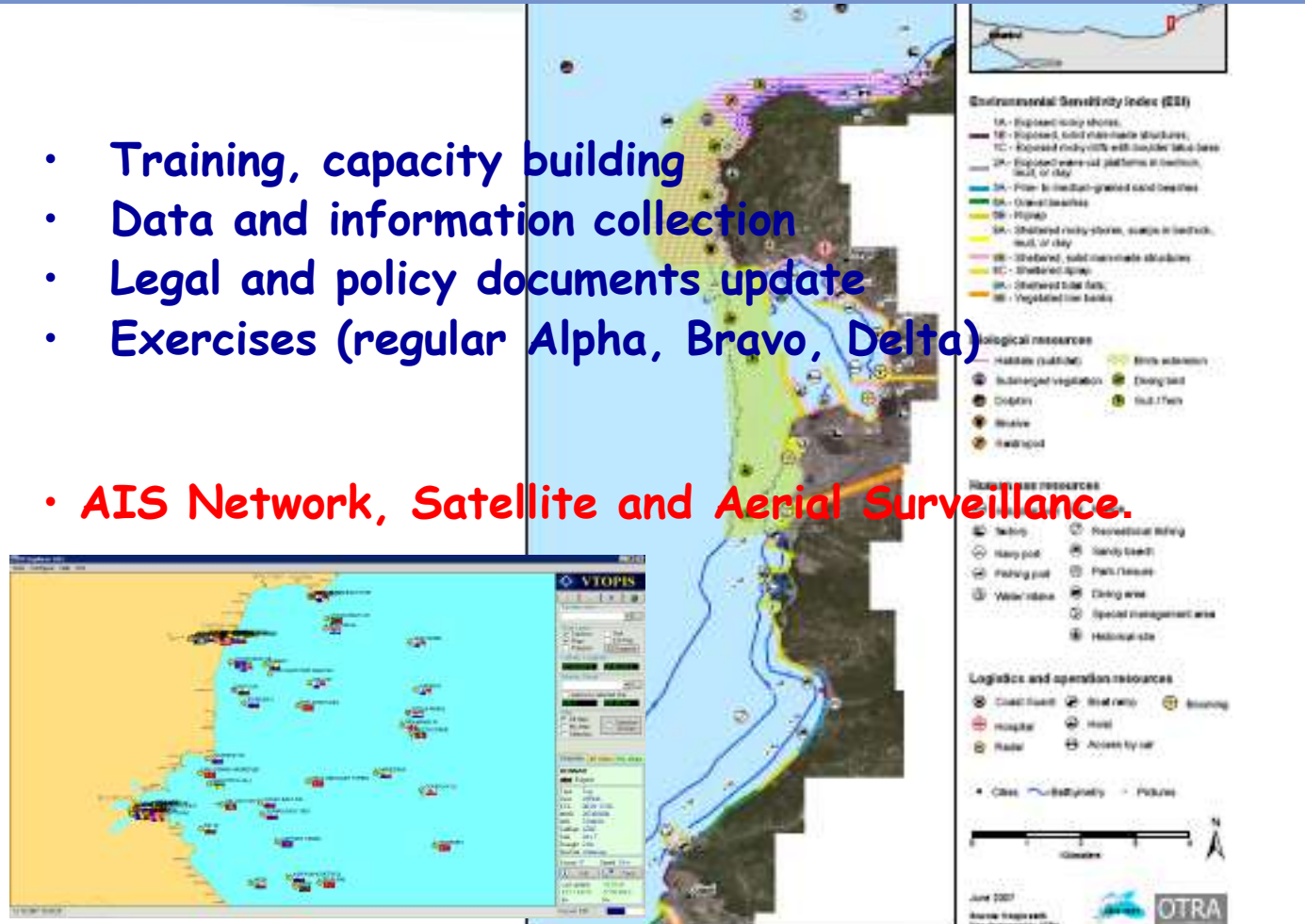
MONITORING \implies **SCIENCE** \implies **PROGRAM OF MEASURES**



Shipping, Oil Pollution, NHS

- Training, capacity building
- Data and information collection
- Legal and policy documents update
- Exercises (regular Alpha, Bravo, Delta)

• AIS Network, Satellite and Aerial Surveillance.




ACCIDENTS

Kerch, 11 November,
2007



Empty drum of toxic waste picked up from the NW Shelf during the 2006 BSERP research cruise



Chernobil - effects till 2030.

EcoQO: BIODIVERSITY, HABITATS



Coastal and Marine Protected Areas - A habitat- and ecosystem- oriented approach to biodiversity management (**not species-oriented**). **Mapping** of habitats, migratory routes, spawning areas, nursery grounds, etc.

Improved management strategies to prevent introduction of new **invasive species**, targetting the priority vectors of introduction - ships (ballast water) and aquaculture. BWM Convention. **Monitoring system for early detection of alien species**, especially in "hot-spots" - ports, aquaculture areas.

Capacity-building and training of marine scientists and decision-makers.

Regular **re-evaluations of biodiversity state**. **Check Lists**. Regular **update of Lists** of Commercially Protected Species, Red Lists, Exotic Species and Habitats of Black Sea importance. These should serve as a **tools for conservation management at the regional level**.



EcoQO: MARINE LIVING RESOURCES



Legally binding document in fishery

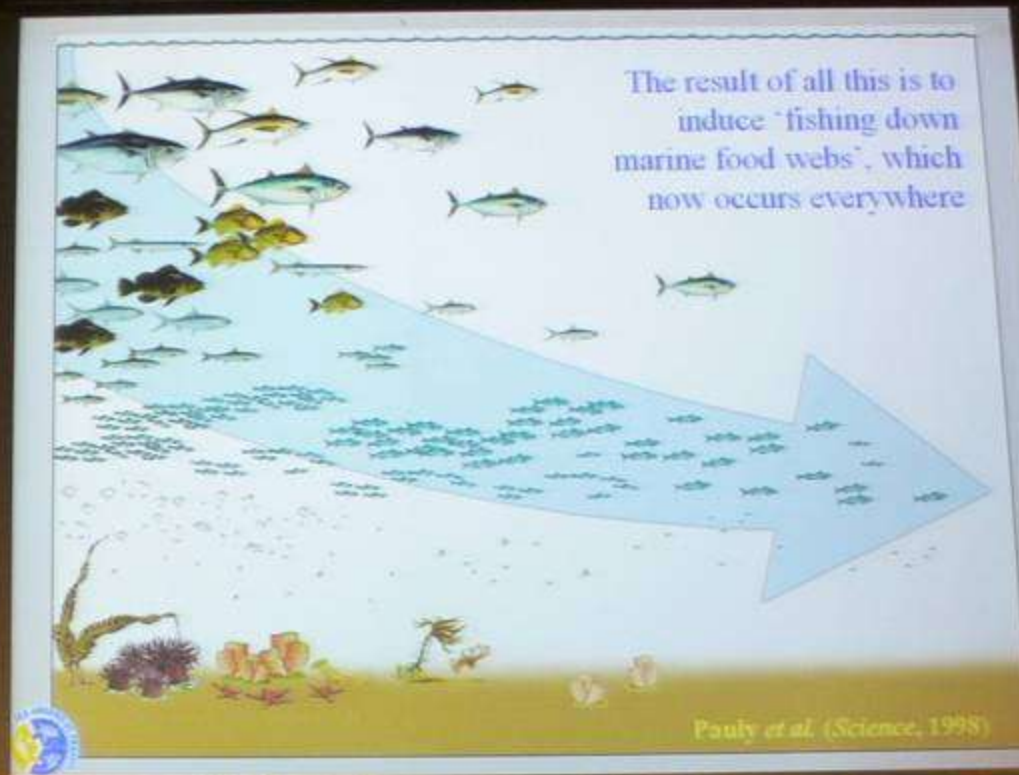
Harmonised methodologies for Stock Assessment;

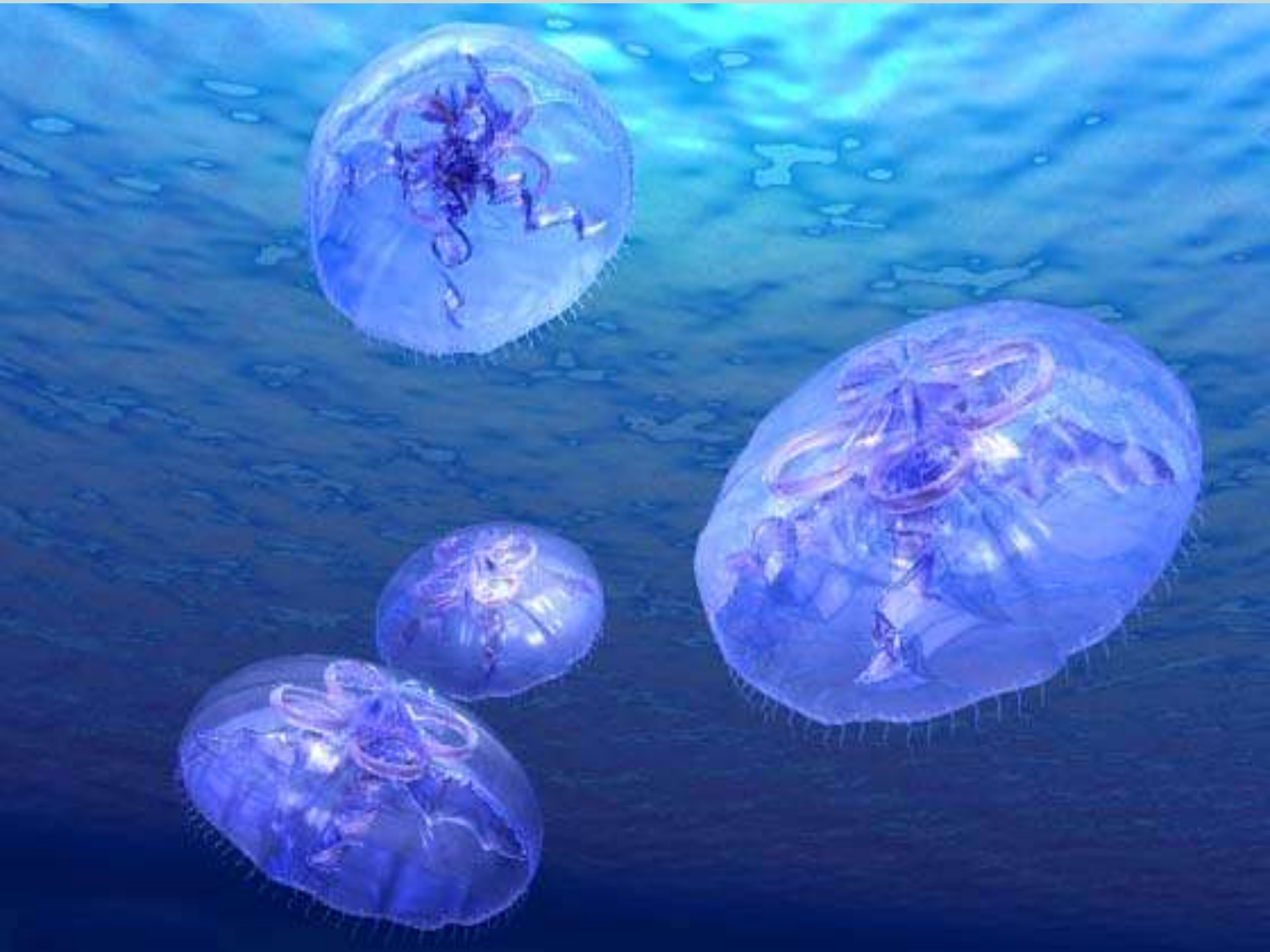
Quotas for commercial species;



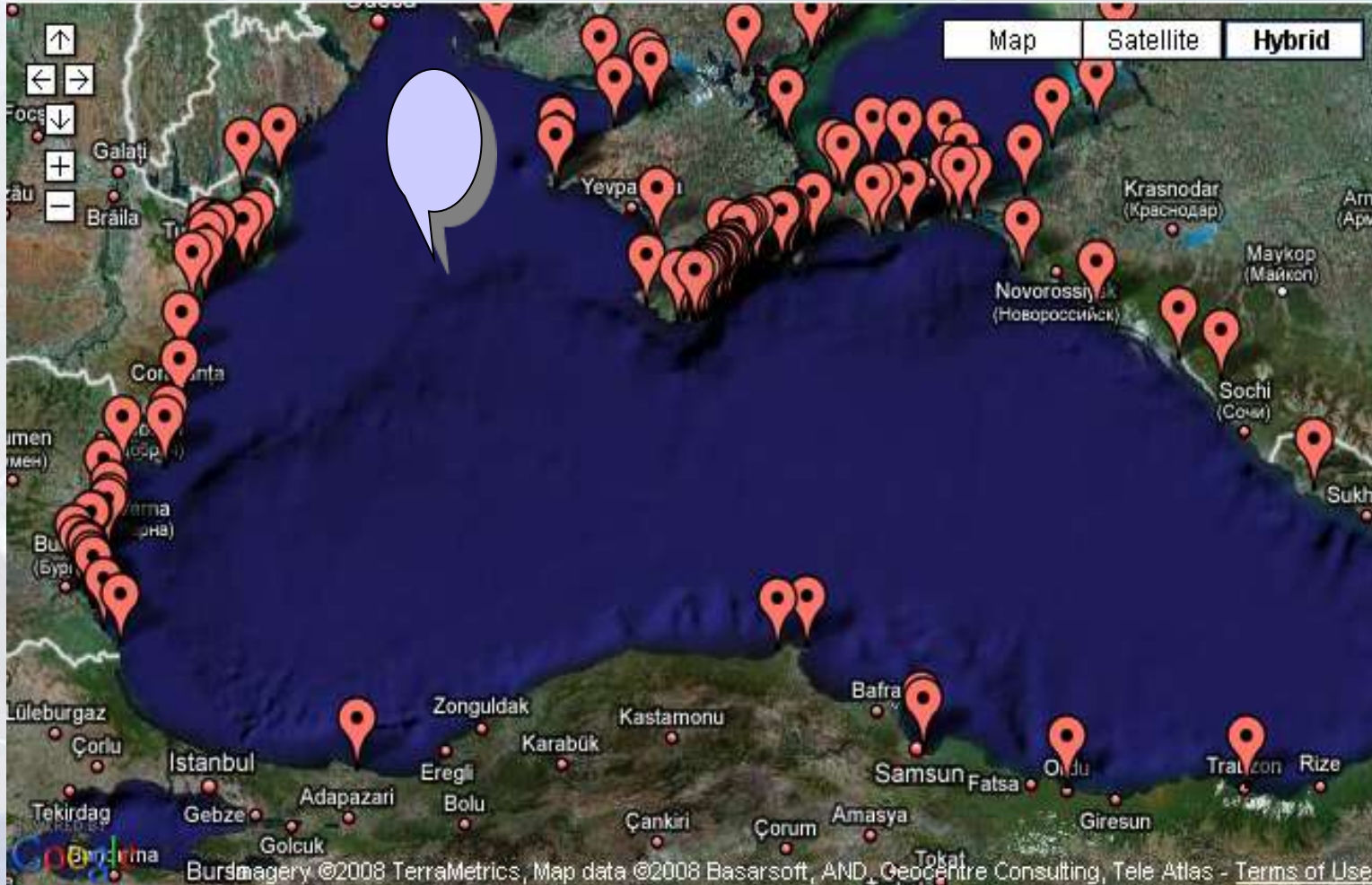
Reporting: Stocks; Landings; Illegal Fishing; Fishing Fleet; By-catch, strandings; Economic indicators; Measures - legislation/policy, bans, fishing seasons, areas.

Fishing down the Food Web, Pauly 2003





Management Plans for MPAs (Hope Spots)



Priority: Climate change

- Land loss
- Movement of population
- Erosion
- Storms, floods
- Biodiversity change



Adaptation costs, such as construction of seawalls and soft measures (e.g. beach nourishment) - start from 500 million US dollars annually for Eastern Europe.

1970



2003



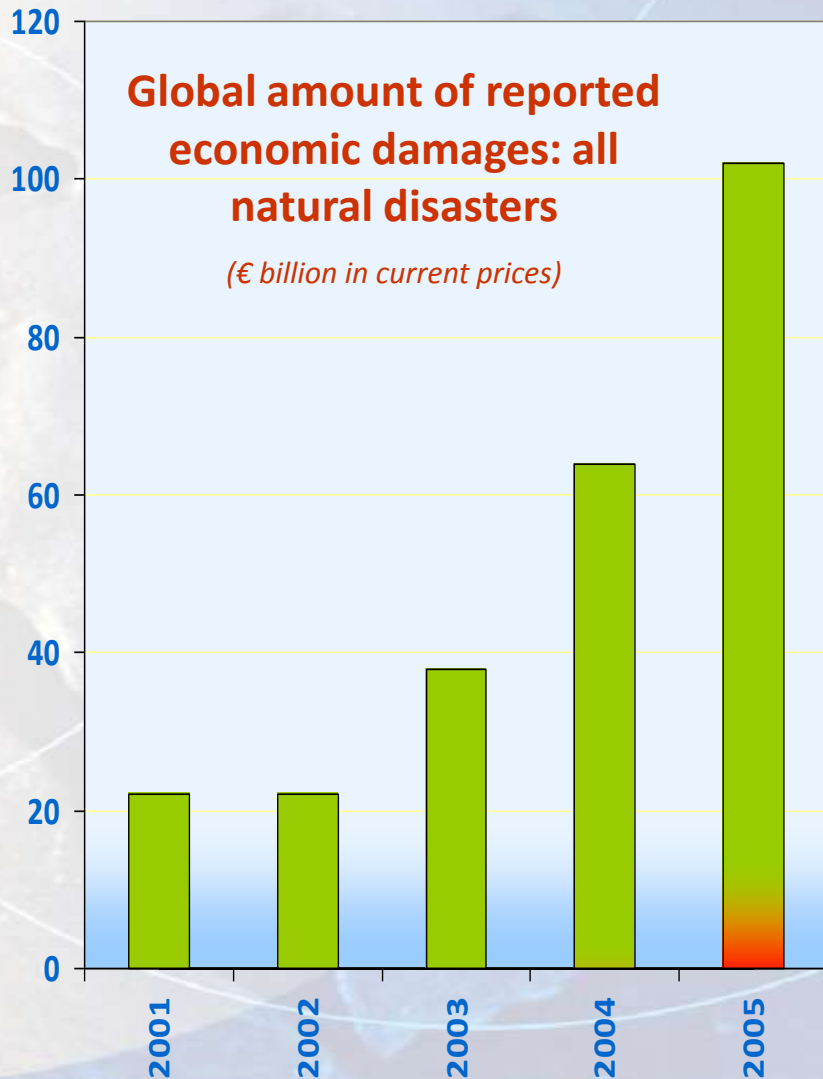
E.g.: Beach Erosion Evolution Mamaia: 1970 and 2003



**Adlia and
Batumi
in Georgia**

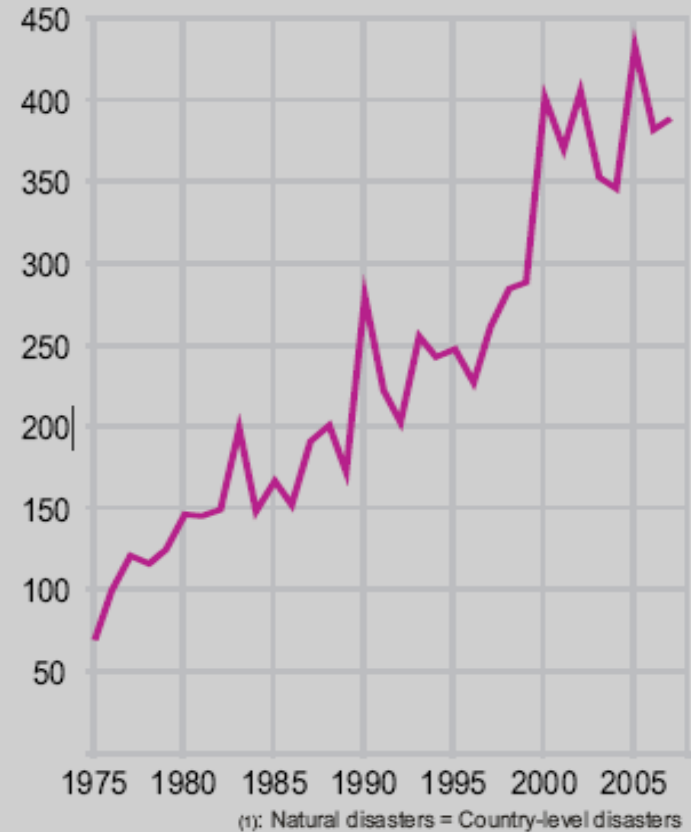


Trends in global disasters (DG Enc. Civil Protection Unit Report)



Source: UNISDR

Time trend of reported natural disasters⁽¹⁾, 1975-2007



Priority: Prevention and Preparedness

Recent findings of new exotic species in the Black Sea - expansion of areals

2009 – сем. Sagartidae



2009 - *Saduria*
(=*Mesidotea*) *entomon*



2009 – *Chrysaora hysoscella*



2009 – *Bolinopsis vitrea*

2006 - *Alexandrium*
ostenfeldii



2006 - *Tridentiger trigonocephalus*



2005 - *Penaeus semisulcatus*



2006 - *Syngnathus acus*



BSIMAP and BSIS

A consensus was reached by the BSC member states that the BSIMAP should:

- Build on established national monitoring programmes, including some mandatory parameters;
- Be compatible with underlying WFD and MSFD principles;
- Utilise standardised sampling, storage, analytical techniques, assessment methodologies and reporting formats. [Reporting formats have been specified in agreement with EEA Formats]. Standardised manual for nutrients analyses was written and a series of workshops were held during 2005 to promote harmonization of techniques and capacity building.
- Include agreed **QA/QC** procedures. Undertake **intercalibration and intercomparison exercises** - a first regional quality assurance intercomparison exercise was undertaken in 2004 for metals, nutrients, chlorinated pesticides and petroleum hydrocarbons. Seven laboratories from five countries participated (no Turkish laboratories took part in the exercise), albeit with different laboratories participating for different groups of chemicals. Since 2005 the BSC provides funds for all countries to participate in the IAEA-MEL Quasimeme chemical quality assurance exercise.



BSIMAP parameters

Black Sea ecosystem

- **Water column**
- **Sediments**
- **Biota**

Black Sea countries undertake also monitoring of pressures:

Riverine loads (priority determinands agreed)

Municipal discharges

Industrial sources of pollution

Atmospheric pollution

Agriculture

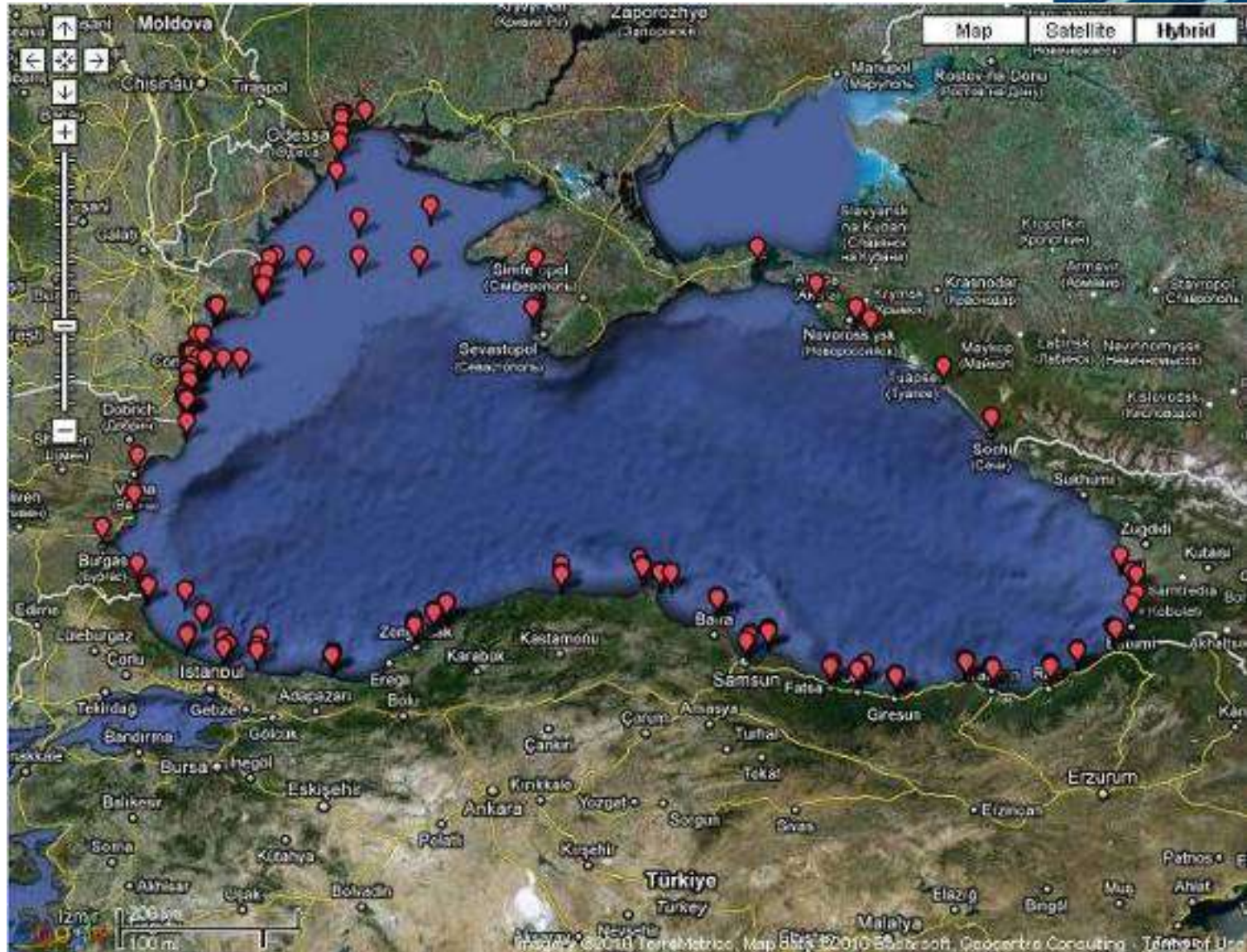


**BIOLOGY,
FISHERY**

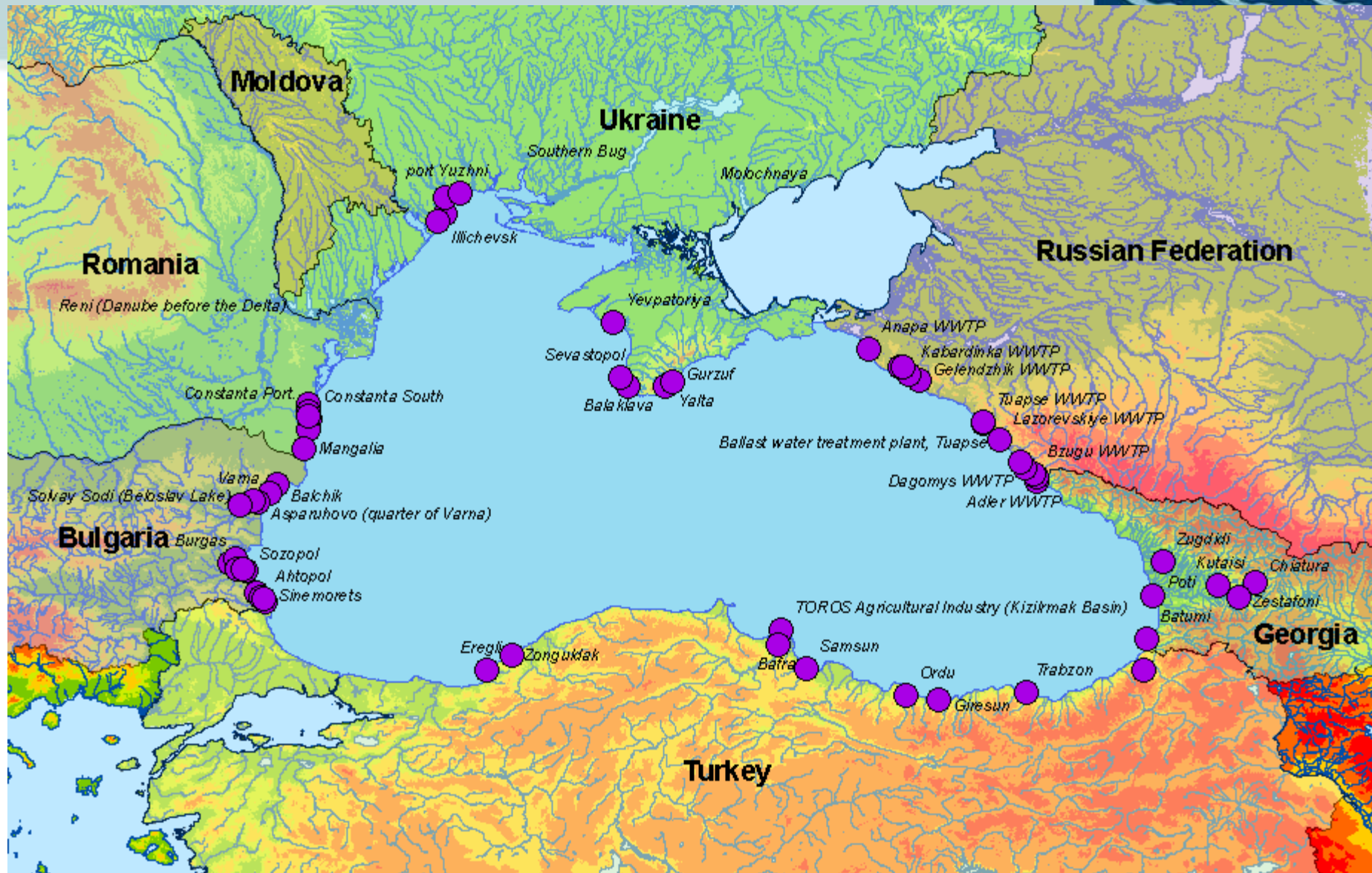
All trophic levels,
including invasive
species. Indicators
for biodiversity
conservation



Monitoring stations in the Sea



Hot Spots



BSIS data (LBS, PMA, ICZM, FOMLR, CBD, ESAS AGs reporting - working together policy makers with scientists) in use:



- **Assessments** of marine waters: environmental status, pressures and impacts, socio-economic analyses, taking into account coastal, transitional and territorial waters;
- **Determination of good environmental status** - establishment of set of characteristics, criteria and methodological standards;
- Establishment of environmental **targets** and associated **indicators**;
- **Monitoring Program optimization**;
- **SoE, TDA, SAP** Implementation reports, Annual and 5-years summaries
- **Manuals, Methodologies, Guidelines**

Programs of Measures (SAP update)

Public information



Priority: Observation, Information

Strategy for further development of INTEGRATED monitoring

- Climate change
- Screening for emerging pollutants
- Pollution effects on biota
- State of the coast, open sea
- Marine litter
- Cetaceans (networks of by-catch and strandings)

Network of Reference Stations

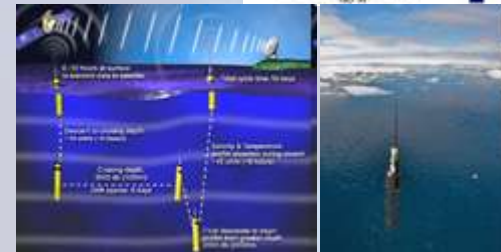
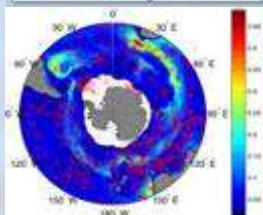
Use of new technologies

Information Systems

Hindcast, Nowcast, Forecast (**short-term**),
Scenarios (**long-term**)



Commission on the Protection of the Black Sea Against Pollution



BS Scientific Conference: meeting policy makers with scientists

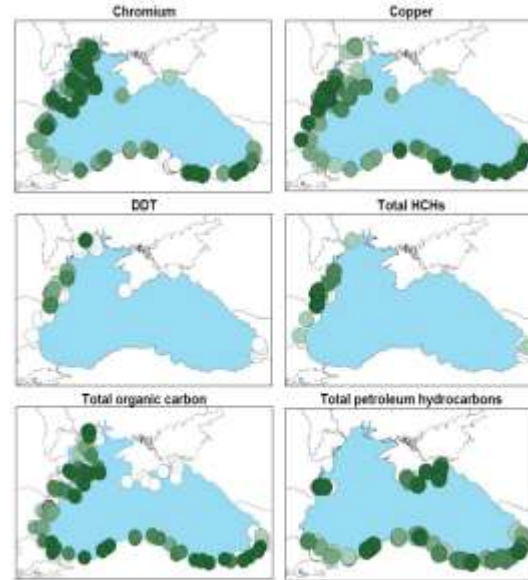
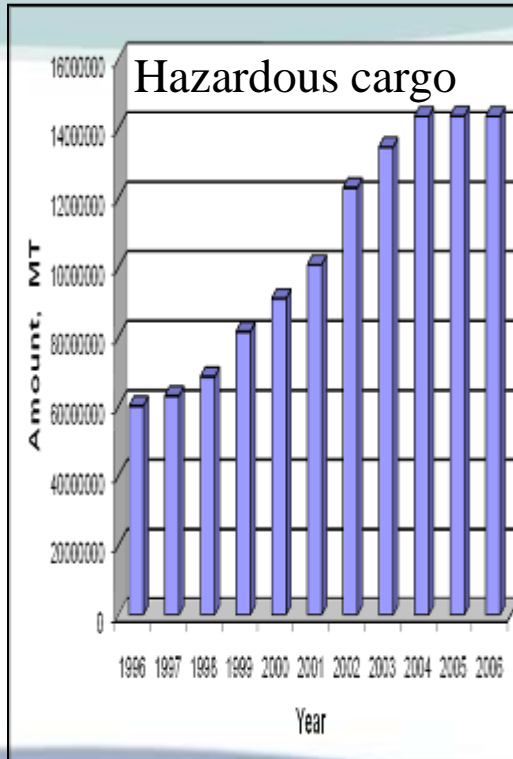
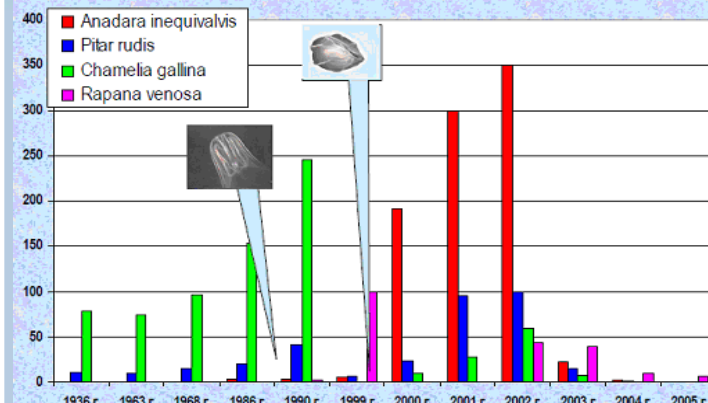
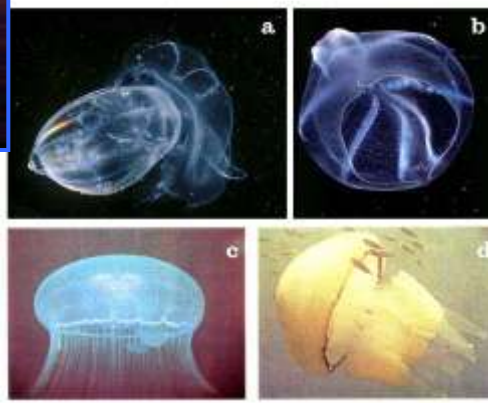
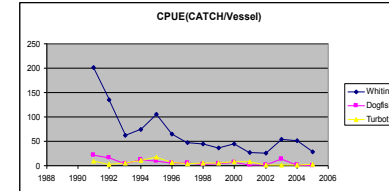
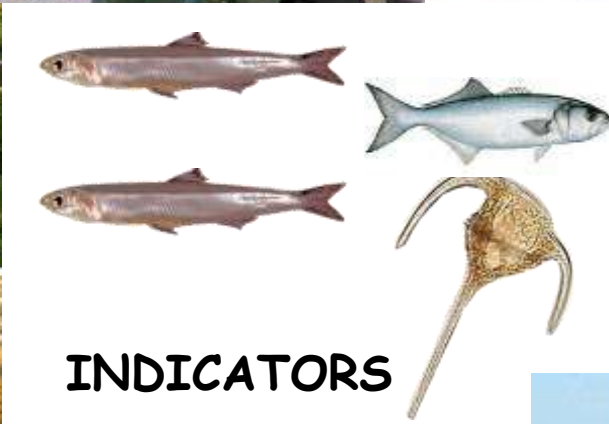
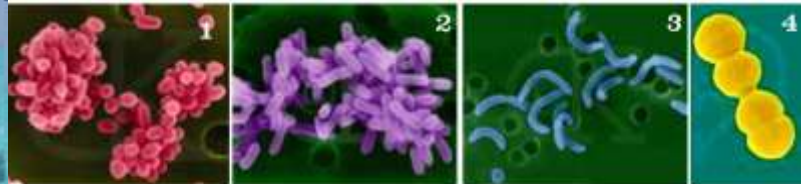


Figure 3.23 Mean concentrations of chromium, copper, DDT, total HCHs²⁸, total organic carbon and total petroleum hydrocarbons in sediments of the Black Sea, 1996-2006





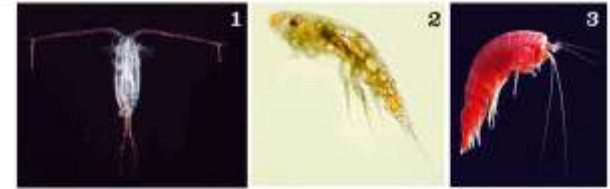
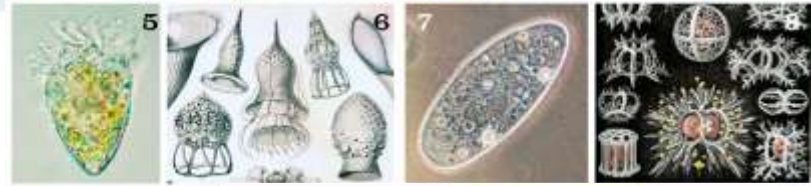
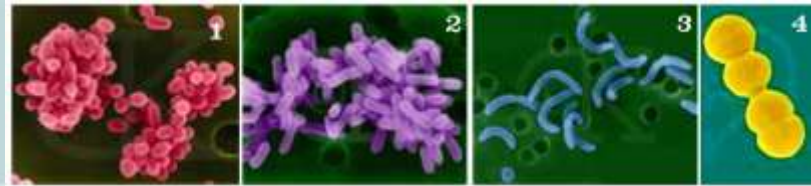
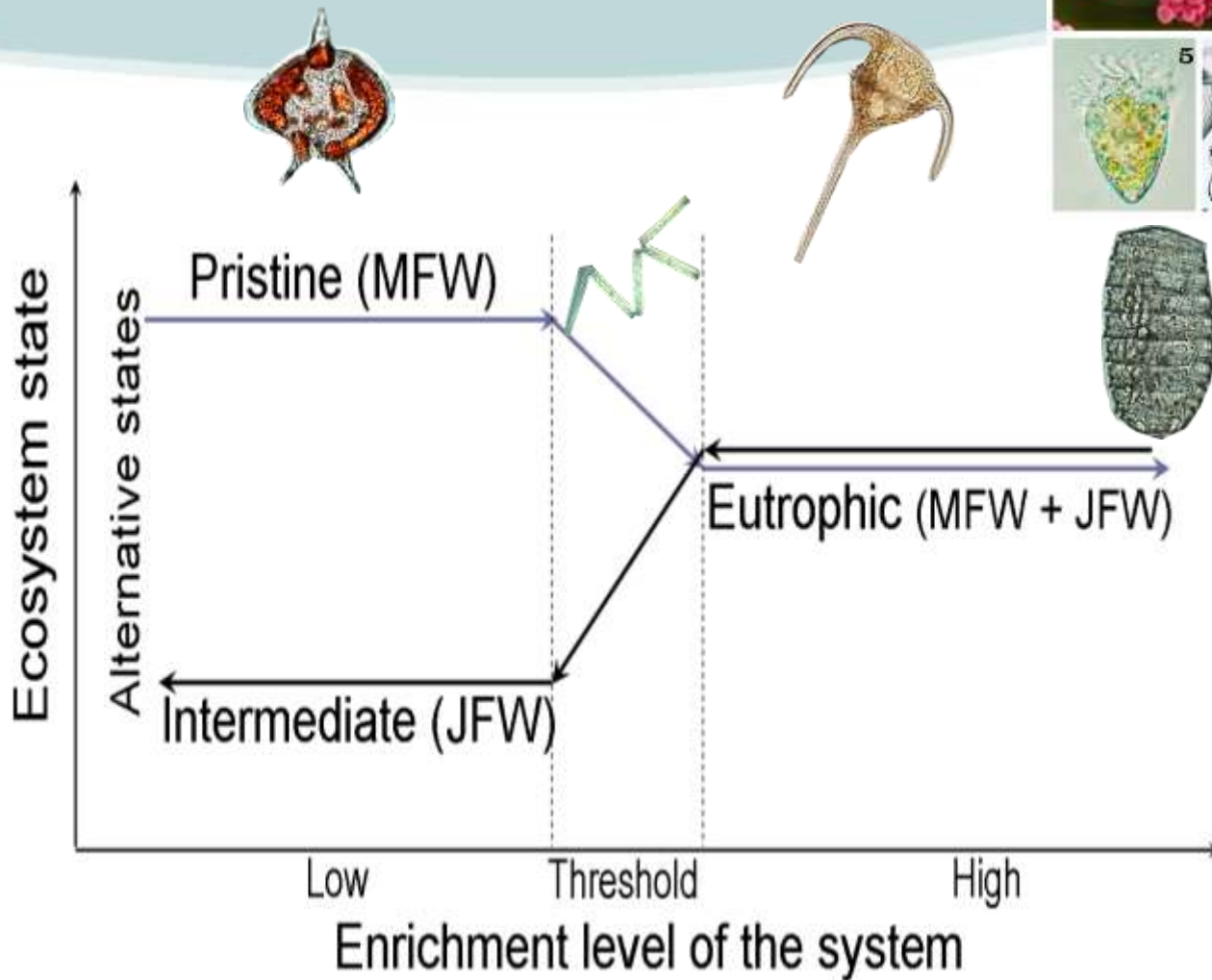
INDICATORS

ENVIRONMENT: GES

Indicators

Recommendations

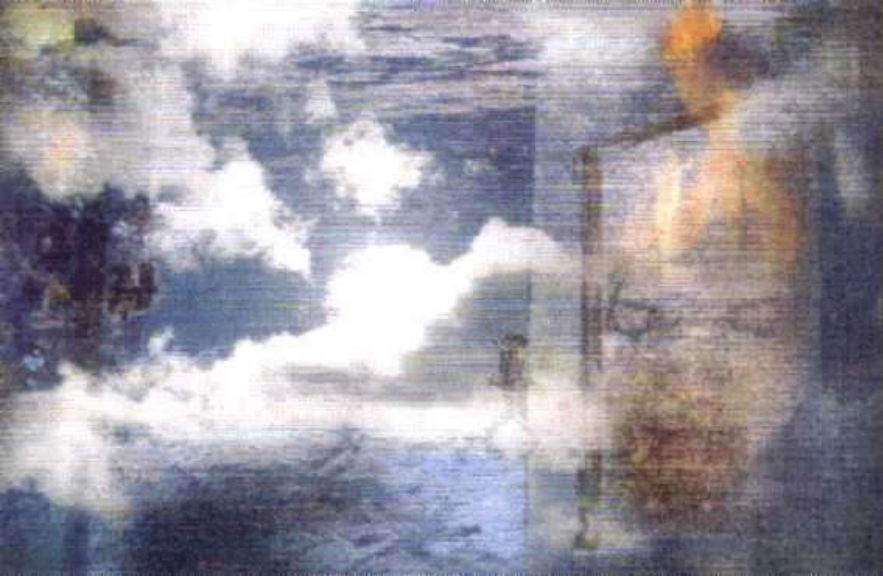
Muscle Food Web and Jelly Food Web





HEALTH

Priority Of PRIORITIES



**THANK YOU FOR YOUR KIND
ATTENTION!**

WWW.BLACKSEA-COMMISSION.ORG

***http://www.blacksea-commission.org/_datalinks.asp**

