

# **European Directives for the conservation of the biodiversity and environment with focus on marine ecosystems**

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# Threats to biodiversity:

- **Over-Fishing**
- **Physical destruction of habitats**
- **Chemical pollution**
- **Biological contamination**
- **Coastline modification**
- **Indiscriminate use of the coast**
- **Modifications of river basins**
- **Climatic factors (global warming)**

# Directives related with the protection of the marine environment:

- Habitats Directive
- Water Framework Directive
- Marine Strategy Directive

## In addition:

Nitrates Directive

Waste Water Treatment Directive

Birds Directive

Common fisheries policy

Integrated Coastal zone management recommendations

# Habitats Directive 92/43/CEE



***Posidonia oceanica* meadow: priority habitat**

# Habitats Directive

Main instrument to guarantee the conservation of biodiversity through the protection of habitats and wild flora and fauna within the entire EEC

## 2 main goals:

- 1) Natura 2000 network (habitat conservation)
- 2) Protection of species



# Natural Habitats in CEE



Habitats of community interest



Priority Natural Habitats

Annex I





## **Annex I:**

**Natural habitats of community interest  
whose conservation requires the  
designation of special conservation areas**

# More than 280 terrestrial habitats in annex I

## Ex.

- 21 dune habitats (e.g. fixed decalcified dunes with *Empetrum nigrum*)
- 13 peat bogs
- Mountain formations with *Genista purgans*
- Endemic thorn scrubs of the *Euphorbio-Verbascion*
- 8 beech types (e.g. Middle European subalpine beech with *Acer* and *Rumex arifolius*)
- Cork oaks of *Quercus suber* (1)
- Holm oak with *Quercus ilex* or *Quercus rotundifolia* (1)



**....but only 9 coastal marine habitats\*:**

- **Underwater caves\***
- **Shallow sand banks**
- **Reefs\***
- **Large cales and shallow bays**
- ***Posidonia oceanica*\* meadows**
- **Estuaries**
- **Intertidal muddy plains**
- **Coastal Lagoons**
- **Ocean chimneys\***

# Species

Species of community interest

Annex 5

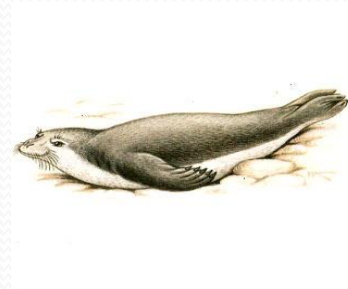
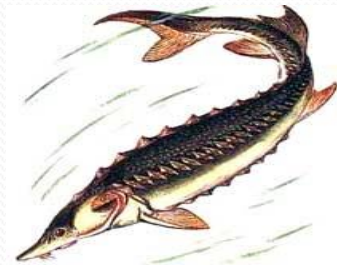
Annex 4

Annex 2

Priority species



**Annex 2: animal and plant species for which it is necessary to designate areas where conservation is guaranteed**



# Annex IV: Animal and plant species of community interest that require strict protection

*Monachus monachus*

All cetaceans

All sea turtles

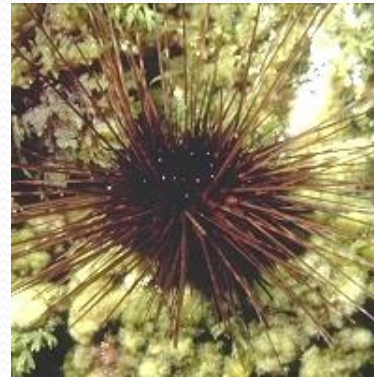
*Acipenser sturio* y *A. naccarii*

*Patella ferruginea*

*Lithophaga lithophaga*

*Pinna nobilis*

*Centrostephanus longispinus*



# Annex V: Animal and plant species of community interest whose collection in the wild and exploitation should be regulated:

*Alosa* spp.



*Corallium rubrum*



*Scyllarides latus*

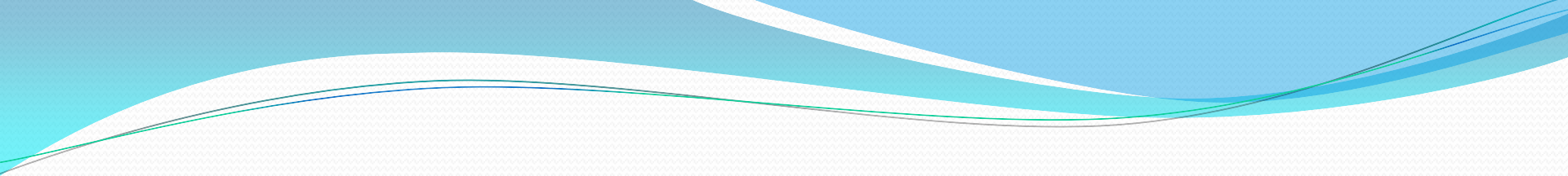


*Lithothamnion corallioides*



*Phymatolithon calcareum*





**The habitats in Annex I and the species in Annex II require the declaration of special conservation areas.**



# Habitats Directive



## Natura 2000 Network



**Natural spaces designated by member countries that hold habitats of community interest or species of Annex 2**



**SCI: sites of community interest**

**ZEPA: special protection area for birds**

# **Sites of community interest (pSCIs)**



**Approval**

## **Special protection zone (ZEC)**

- 1) Develop a space management plan**
- 2) Evaluation of the recurrences of plans and projects not linked to conservation**
- 3) Application of conservation measures**
- 4) Surveillance of the state of conservation**

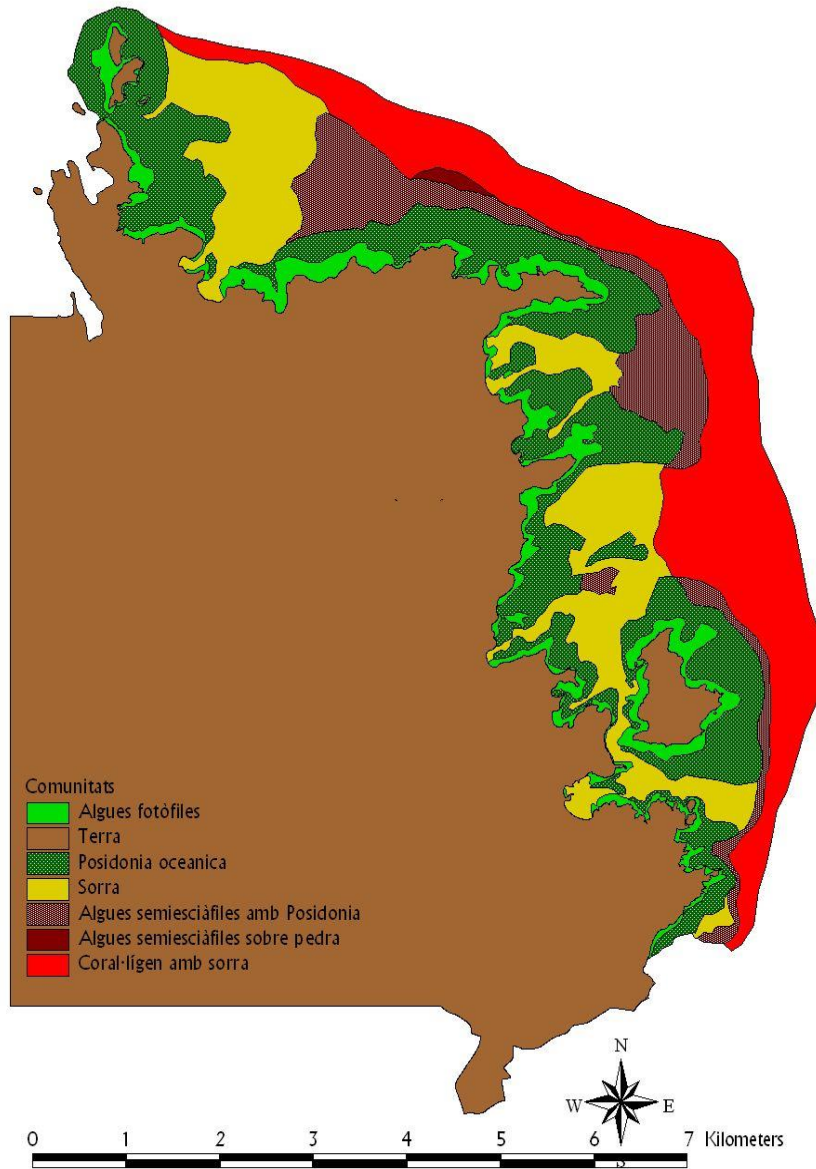
# **Necessary Studies for the elaboration of Management Plans**

- **Biodiversity**
- **Distribution and abundance of vulnerable species**
- **Communities: composition, abundance and vulnerability**
- **Cartography communities**
- **Pressures and impacts**



**Proposal of Management Measures**

## Comunitats de la reserva des Grau

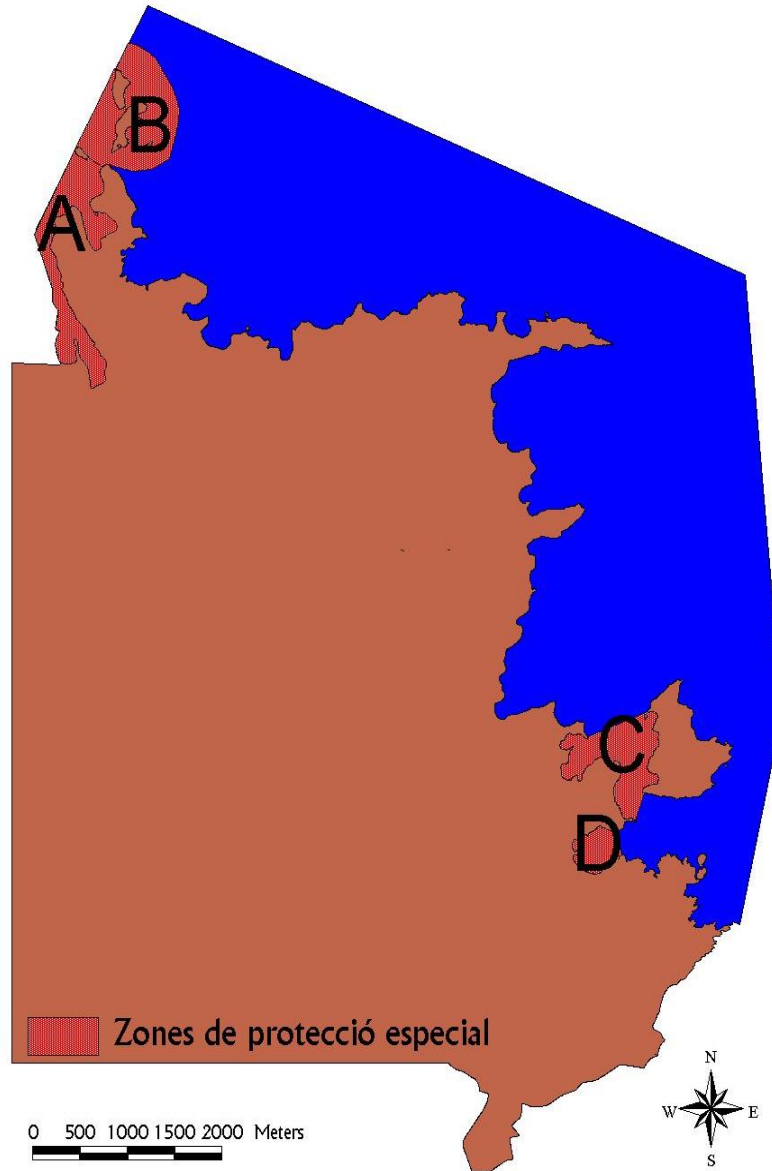


# Management Plan for LIC Addaia- Es Grau (Mallorca)

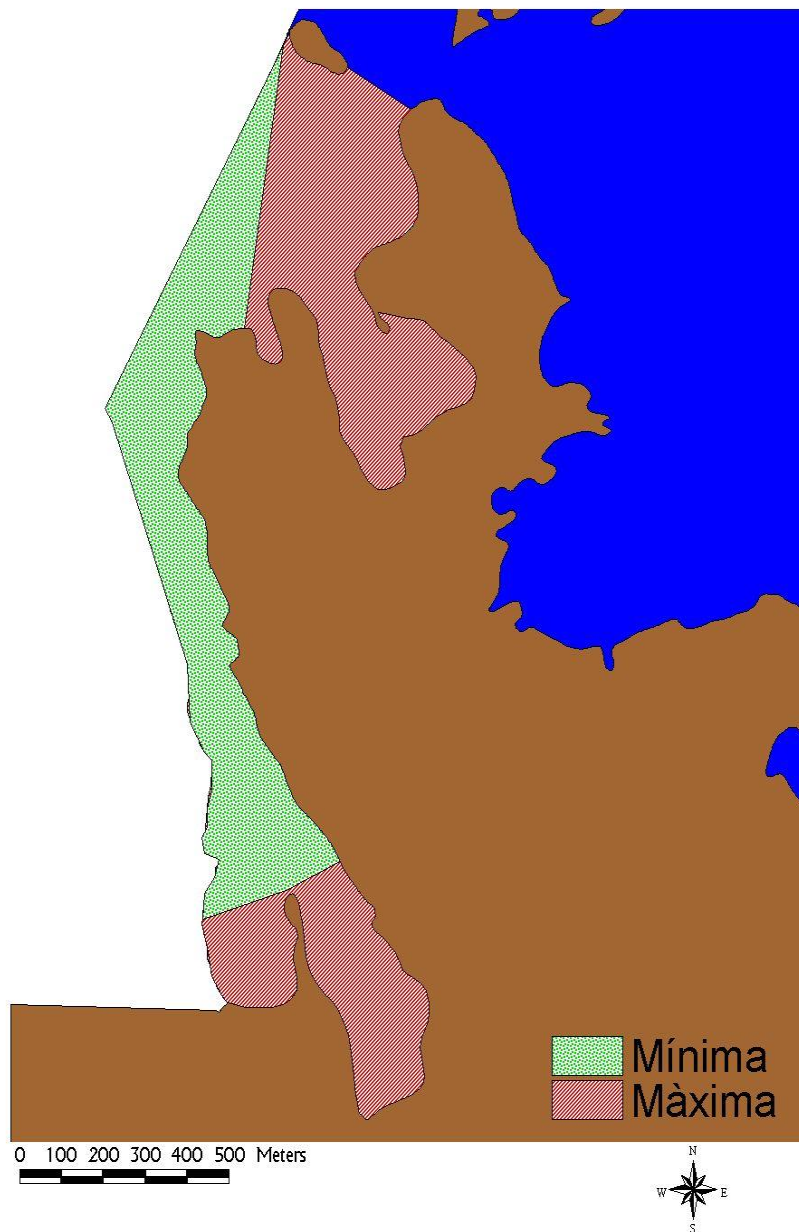
- ✓ Mooring regulation
- ✓ Prohibition of navigation
- ✓ Arrangement of permanent moorings
- ✓ Prevent port development with berths limitation
- ✓ Surveillance units
- ✓ Expansion of the LIC area
- ✓ Awareness campaigns
- ✓ Impacts and bioremediation in new constructions
- ✓ Evaluation of the impact of wastewater discharges
- ✓ Accurate cartography of *Posidonia oceanica* barrier reef
- ✓ Fishing restrictions: red coral



# Sites of special protection (Red)



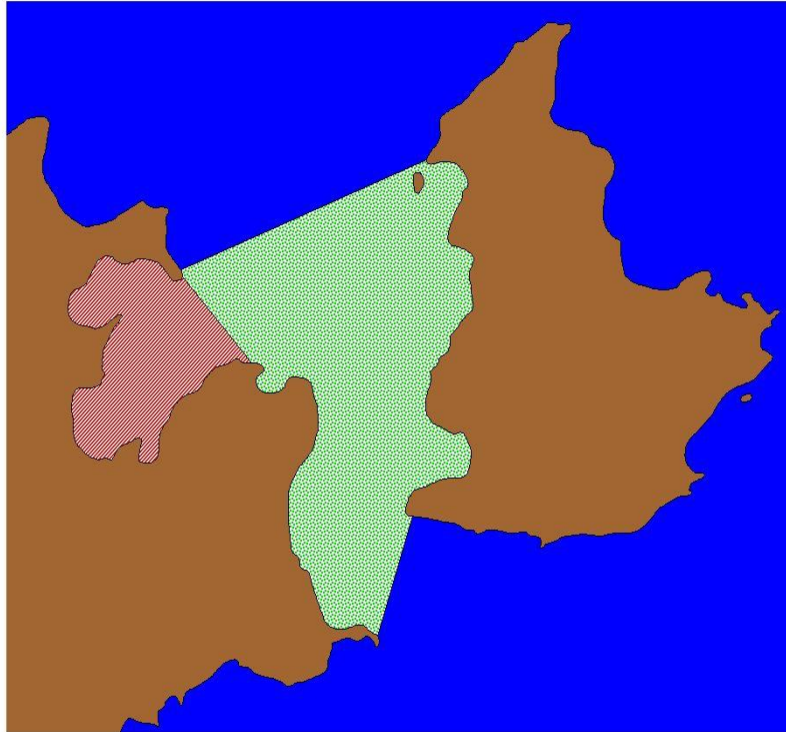
## Nivells de protecció a la Zona A



**Maximum protection: prohibited navigation and anchoring**

**Minimum protection: Free mooring prohibited**

## Nivells de protecció a la Zona C



**Maximum: prohibited anchorage**

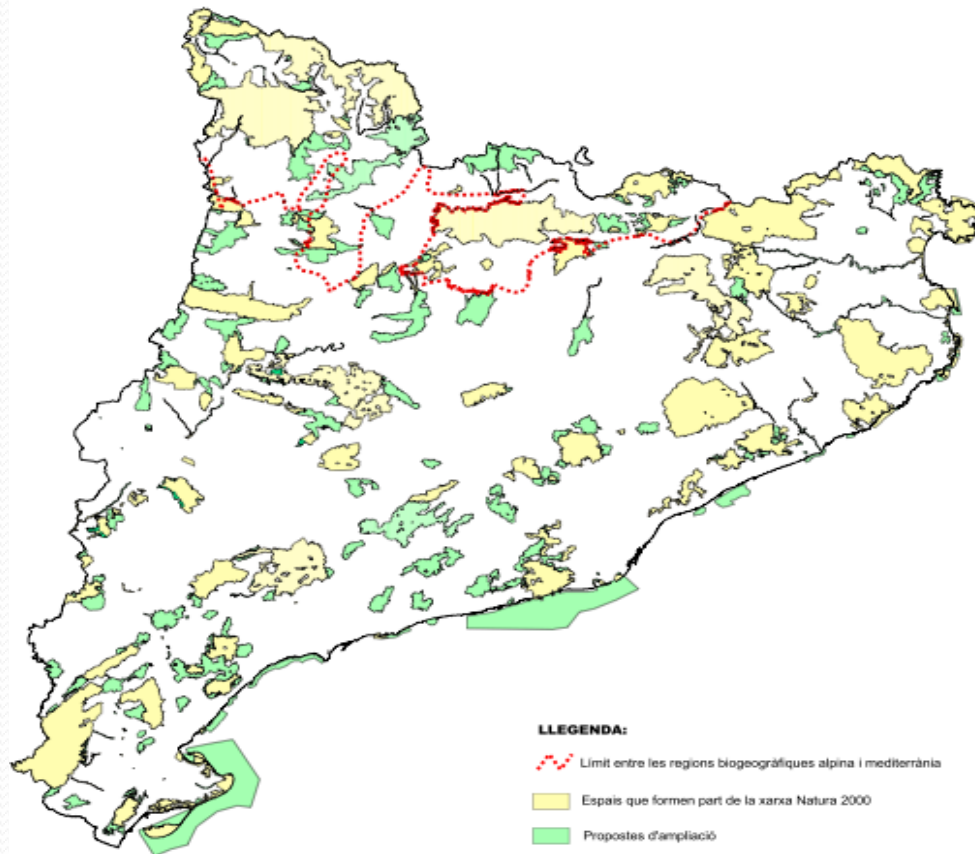
**Minimum: free mooring only on sand bottoms**

■ Mínima  
■ Màxima

0 200 400 600 800 1000 Meters




# Proposta catalana a la xarxa Natura 2000 -ampliació-



Escala 1:1.750.000



 Generalitat de Catalunya  
Departament de Medi Ambient i Habitatge  
Direcció General del Medi Natural

Febrer 2005

 Sistema d'informació ambiental  
de Catalunya  
Cartografia de referència: Institut Cartogràfic de Catalunya

## **Problems:**

- **Marine environment poorly known.**
- **Incomplete list of habitats and species**
- **SCIs too focused on coastal environments such as meadows of *Posidonia* (Balearic Islands) or vertebrates habitats (Catalunya)**
- **Large number of very vulnerable and rare habitats not covered by the Directive**
- **Large number of very vulnerable and rare marine species not covered by the Directive**

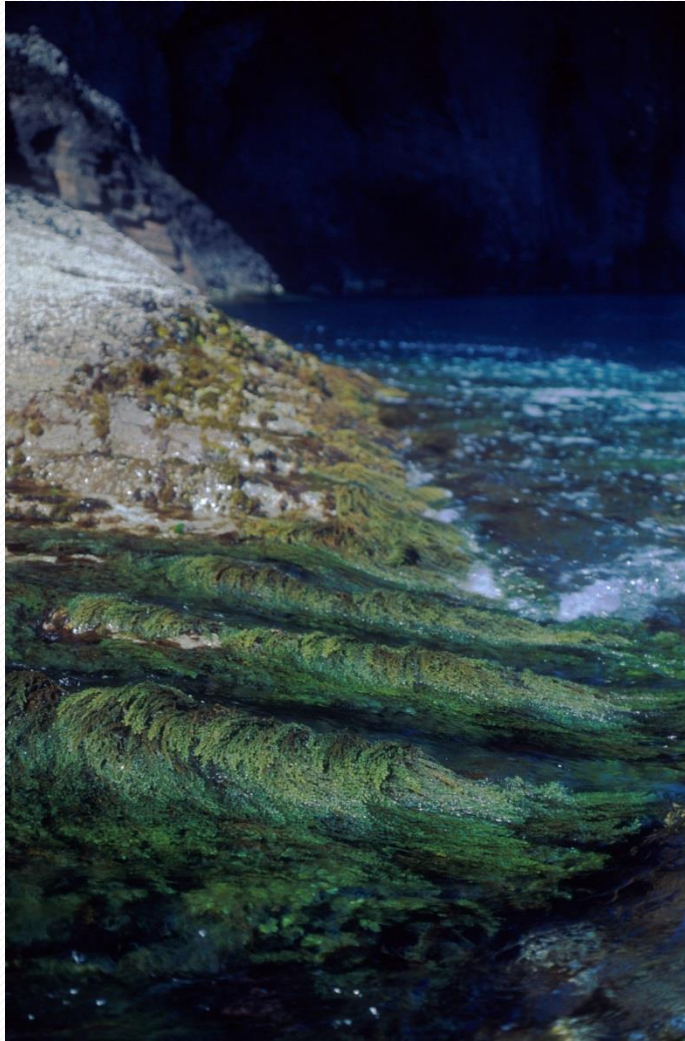


# **Solutions:**

**Preparation of new lists of habitats and species by member countries that respond to the reality of each area.**

**Spain: To conduct the national inventory of marine habitats and taxa of the Habitats Directive  
(DG Biodiversity, Ministry of the Environment)**

# Water Framework Directive, 2000/60/CEE



**The Directive aims to assess the quality of water by studying the organisms and communities that inhabit it**

**Assumption:  
if the waters are in good condition the organisms that live in them should be the same as in pristine or in low anthropic impact**



**Organisms as integrators of ecosystem quality**

# Water Framework Directive, 2000/60/CEE



**The Directive aims to achieve a good or very good quality of water, i.e. with levels of pollution absent or low enough to allow the normal development of communities**

# **Water Framework Directive, 2000/60/CEE**

## **Applied to:**

- **Streams and rivers (macro-invertebrates, fitobenthos, aquatic plants)**
- **Ponds and lakes (aquatic plants, fitoplancton, fitobenthos)**
- **Marine coastal waters [phytoplankton, phytobenthos (i.e. algae, phanerogams), invertebrates]**
- **Groundwater (complements WFD; nitrates, pollution...)**

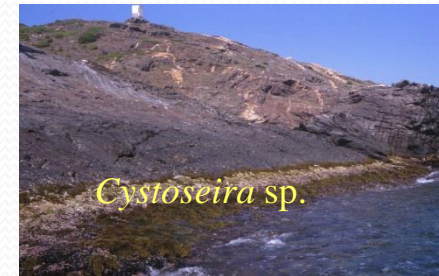
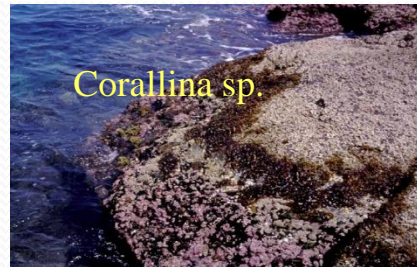


# Biological indicators

+pollution

**Pollution gradient**

-pollution



-sensitivity

**Sensitivity gradient**

+sensitivity

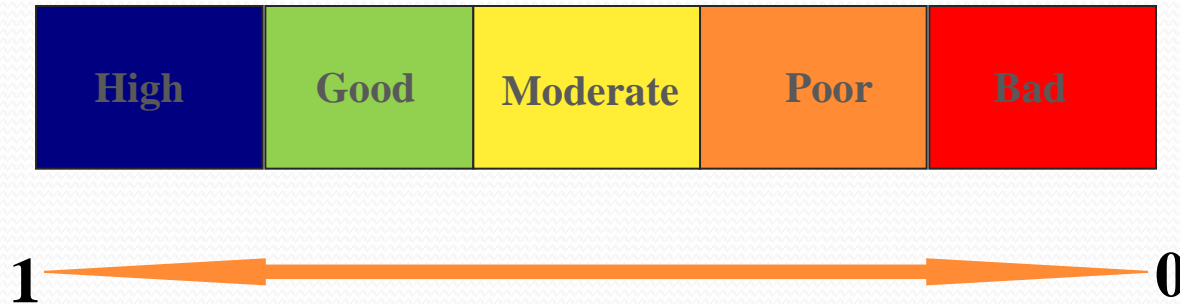


**Water masses**

**Types**

**Reference areas**

## **Classification**



**Obligatory, all water bodies had to be classified as 'High' or 'Good' before 2015 (except heavily modified water masses, example: ports) and further monitoring**

**The objective of the WFD is not to conserve but to obtain good water quality but ...**



**as this quality must be guaranteed by a good conservation of the communities, the protection of the ecosystem is an indirect purpose, essential if good water quality must be achieved \***

**\* however, the conservation of vertebrates is not guaranteed**

**Discussions on post-2020 biodiversity strategies by the signatory countries of the Convention on Biological Diversity are currently being initiated and the United Nations General Assembly has recently declared 2021-2030 the “decade of ecosystem restoration”**

**Aichi Biodiversity Target 15 aims to restore 15% of degraded ecosystems by 2020 considering rewilding as a major approach to ecological restoration  
[Perino *et al.*, Science 364, 351(219)]**