



CONVENZIONE DI ALGHERO 1995  
**SULLA BIODIVERSITÀ  
COSTIERA E MARINA  
DEL MEDITERRANEO**

CONVENCIÓ DE L'ALGUER SOBRE LA BIODIVERSITAT LITORAL I MARINA DE LA MEDITERRÀNIA  
CONVENCIÓN DE ALGHERO SOBRE LA BIODIVERSIDAD LITORAL Y MARINA DEL MEDITERRÁNEO  
LA CONVENTION D'ALGHERO SUR LA BIOVERSITE COTIERE ET MARINE EN MEDITERRANEE  
ALGHERO CONVENTION ON COASTAL AND MARINE BIODIVERSITY IN THE MEDITERRANEAN  
ΕΥΝΟΗΧΗ ΤΟΥ ΑΛΓΗΕΡΟ ΠΛΑΝΟ ΣΤΗ ΒΙΟΠΟΙΚΙΛΟΤΗΤΑ ΤΩΝ ΠΑΡΑΚΤΙΩΝ ΚΑΙ ΘΑΛΑΣΣΙΩΝ ΟΙΚΟΣΥΣΤΗΜΑΤΩΝ ΤΗΣ ΜΕΣΟΓΕΙΟΥ  
ALGHERSKA KONVENCIJA O OBALNI IN MORSKI BIODIVERZITETI V SREDOZEMLJU  
КОНВЕНЦИЯ АЛГЕРО ПО ПОБЕРЕЖНОМУ И МОРСКОМУ БИОЛОГИЧЕСКОМУ РАЗНООБРАЗИЮ СРЕДИЗЕМНОГО МОРЯ

معاهدة الكثير واحفظ البيئة البحرية والشالئية بالبحر الابيض المتوسط

EDIZIONI  
**SOLE**

Alghero Convention (1995)

## ANNEX 1

### **Biodiversity Criteria for the Conservation of Infralittoral Organisms.**

Bearing in mind that, despite the relative low biodiversity of oceans compared to terrestrial ecosystems, the Mediterranean is one of the richest seas for biodiversity in the world since it hosts 7.5% of the world marine animal taxa and 18% of the world marine flora for an area covering only 0.7% of the world oceans,

taking into account the lack of information on the benthic flora and fauna throughout the Mediterranean,

being aware of the discrepancy of scientific knowledge between the western and eastern parts of the Mediterranean; for example from the approximately 550 sponge species known to date all over the Mediterranean, 90% has been recorded from the western basin and only 35% from the eastern basin,

considering that the Mediterranean infralittoral flora and fauna are characterized by a high ratio of endemism,

given that systematics and population studies form the necessary base to describe biodiversity and to define the structure and function of the marine ecosystem,

the **Alghero Convention** (1995) through its Workshop on the Selection of Biological Criteria for the Conservation of Infralittoral Organisms, chaired by Dr. C.F. Boudouresque (GIS Posidonie, University of Marseille - Luminy, France) and with Dr. E. Voultziadou - Koukoura (School of Biology, Thessaloniki University, Greece), appointed as Rapporteur,

1) recommends that basic research needs first to be carried out for certain groups of taxa and habitats since it is contradictory to discuss conservation and management measures without sufficient knowledge of infralittoral diversity in the Mediterranean. The biological cycles of some economically important species will need to be investigated, for example the continuously declining sponges of commercial value.

2) Bearing in mind that the principal threats to infralittoral communities in the Mediterranean are provoked by:

- pollution,
- overfishing,
- coastal reclamation,
- development of harbours and marinas,
- introduction of exotic species since 7% of all marine species have been introduced in the Mediterranean, compared to a world average ranging between 2 and 3%,

realising that the Habitats Directive of the European Union includes *Posidonia oceanica* beds as the only infralittoral habitat of the Mediterranean, and that so far only 11 benthic species are legally protected in a few Mediterranean countries, notably:

- *Posidonia oceanica*, Neptune Seagrass (protected in France and Spain),
- *Cymodocea nodosa*, Slender Seagrass (idem),
- *Zostera noltii*, eel grass (Spain),
- *Zostera marina*, eel grass (Spain),
- *Centrostephanus longispinus*, echinoderm (France),
- *Lithophaga lithophaga*, Date Mussel (France, Italy),
- *Pholas dactylus*, Common Piddock (Italy)
- *Pinna nobilis*, Noble Pen Mussel (Croatia, France),
- *Pinna pernula*, Rough Pen Mussel (France),
- *Patella ferruginea*, Giant Limpet (France), and
- *Scyllarides latus*, Mediterranean Locust Lobster (France).

Considering that a list of infralittoral species and habitats in need of protection was already published by:

- I.U.C.N. (Red data book of plants, communities and landscapes in the Mediterranean, 1990, prepared together with UNEP - MAP),
- GIS Posidonie (Symposium on Marine Species in need of Protection in the Mediterranean, 1991),

and another list of infralittoral species and habitats was prepared for the European Parliament (1994),

bearing in mind that none of these lists have been taken into consideration by any national nor international authority,

taking into account that biological criteria concern either species or communities which are complementary to each other and lead to the same result: species protection enables us to protect habitats and habitat protection enables us to protect species,

the **Alghero Convention** (1995) recommends that species and habitats deserve protection when at least one of the following criteria apply:

- A. scarcity,
- B. strong decline of populations,
- C. high ecological importance,
- D. symbolic value,
- E. indirect role in the protection of other organisms.

3) Herewith a set of examples is presented per category:

**A. Scarcity:** a species occurring in a few localities only, which results in high vulnerability. Species of this category include:

- *Penicillus capitatus*: Mediterranean alga, not endemic,
- *Caulerpa ollivieri*: an endemic alga found in France and Turkey,

- *Ptilophora mediterranea*: an endemic alga found in Greece,
- *Schimmelmania ornata*: a rare alga found in Italy, not endemic,
- *Centrostephanus longispinus*: a rare sea urchin found in the Med., not endemic,
- *Patella nigra*: a rare limpet found in Morocco and Spain, not endemic.

**B. Strong decline:** a 50 to 90% decline is considered as a serious threat. Wherever possible, it would be interesting to compare the presumed decline with the «natural» fluctuations of the species population. However, this is generally impossible due either to lack of data or to the implications of man's impact.

Among the examples:

- *Cystoseira mediterranea*: an alga endemic to the Western Mediterranean,
- *Cystoseira amentacea stricta*: an endemic subspecies for the Western Mediterranean,
- *Pinna nobilis*: a fan mussel in strong decline in the Mediterranean,
- *Patella ferruginea*: Giant Limpet, endemic for the Western Mediterranean,
- *Spongia officinalis*: Bath Sponge, in general decline in the Mediterranean,
- *Hippospongia communis*: Horse Sponge, in general decline in the Mediterranean.
- *Hippocampus ramulosus*: Seahorse, now very rare but not endemic.

**A & B. Scarcity and Strong decline:**

- *Goniolithon byssoides*: an alga endemic for the Mediterranean,
- *Cystoseira sedoides*: an alga endemic for Algeria and Tunisia,
- *Zostera marina*: an eelgrass, not endemic,
- *Aphanius iberus*: an endemic fish occurring in Algerian and Spanish lagoons,
- *Umbrina cirrosa*: Ombrine, rare in the Mediterranean, not endemic.

**C. High Ecological Importance:** species building major ecosystems sometimes of a high economic value, for example:

- *Posidonia oceanica* meadows: thousands of species depend on this ecosystem (25% of the Mediterranean flora and fauna are present within *Posidonia* meadows). It is an endemic of the Mediterranean and has suffered a conspicuous regression throughout the Mediterranean.

**D. Symbolic Value:** the Comb Grouper, *Epinephelus marginatus*, has become a symbol for divers in France and Italy, and accordingly became of economic value through tourism; now very rare in France and Italy.

**E. Indirect Role in the Protection of other Organisms:** an example is given by the Date Mussel (*Lithophaga lithophaga*). Its harvesting implies the destruction of rocky bottoms by means of dynamite or underwater engines creating serious consequences for the whole biota of the area.

4) Criteria for Mediterranean habitats are more or less identical to those for species and can be summarized as follows:

- Economic criteria:
  - T = importance for Tourism
  - F = importance for Fisheries
  - A = importance for Aquaculture

- Ecological criteria:
- B = a pole of Biodiversity
  - P = high Productivity
  - I = strong Interaction with other ecosystems
  - R = irreversible Regression
  - E = Endemic
  - D = conspicuous Decline

Habitats:	Criteria
- Brackish littoral lagoons	A, F, P, I
- Algal mid-littoral rims as built by <i>Lithophylum lichenoides</i>	B, R D
- Platforms of Vermeids	D
- <i>Cystoseira</i> «forests» in exposed conditions	D
- <i>Posidonia oceanica</i> meadows	F, B, P, I, R, E
- <i>Posidonia</i> barrier reefs	R, D
- <i>Zostera marina</i> meadows	D
- Underwater sea caves	T, B, D
- Coralligenous community	T, B, E
- Maerl community	R

It was concluded that infralittoral species and communities are hardly considered by national legislation and international conventions and in any case much less than terrestrial vertebrates and plants for example which are studied and supported by a much greater number of scientists and conservationists.