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Mediterranean Action Plan
Barcelona Convention

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ACTION PLAN FOR THE CONSERVATION OF MARINE VEGETATION IN THE MEDITERRANEAN SEA



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United Nations Environment Programme
Mediterranean Action Plan
Specially Protected Areas Regional Activity Centre (SPA/RAC)
Boulevard du Boulevard du Leader Yasser Arafat
B.P.337 - 1080 Tunis Cedex - TUNISIA

car-asp@spa-rac.org

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FOREWORD

The Action Plan for the conservation of marine vegetation in the Mediterranean Sea follows a series of three action plans adopted by the Mediterranean countries within the framework of the Barcelona Convention, devoted to the conservation of species or groups of species. These action plans are :

- Action plan for the management of the Mediterranean monk seal.
- Action plan for the conservation of Mediterranean marine turtles.
- Action plan for the conservation of cetaceans in the Mediterranean Sea.

Although they do not have a binding legal character, these action plans were adopted by the Contracting Parties as regional strategies setting priorities and activities to be undertaken. In particular, they call for greater solidarity between the States of the region, and for co-ordination of efforts to protect the species in question. This approach has been proved to be necessary to ensure conservation and sustainable management of the concerned species in every Mediterranean area of their distribution.

The elaboration of this action plan also follows a series of initiatives at regional level which highlighted the conservation of species generally and marine vegetation in particular. Among these initiatives we could mention the drafting of the "Livre Rouge,Gérard Vuignier, des végétaux, peuplements et paysages menacés de Méditerranée", which came out in 1990. Specialists from several countries of the region collaborated on this, to provide a first synthesis of knowledge on the status of the main threatened marine vegetation species in the Mediterranean.

In 1995, a feasibility study for setting up a marine vegetation monitoring network in several Mediterranean countries was carried out. This study, coordinated by the Specially Protected Areas Regional Activities Centre (SPA/RAC) was a response to the recommendations made at the 8th Ordinary Meeting of the Contracting Parties to the Barcelona Convention.The feasibility study, because of the detailed questionnaire which was sent to the focal points in the Mediterranean countries, permitted to assess the state of knowledge, and the necessary scientific and technical means. In 1996, the annexes to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean were adopted, among them a list of endangered or threatened species, where 14 endangered or threatened marine vegetation species appear. For the species appearing in this list, the Protocol provides for a set of measures such as scientific monitoning, making of an inventory and protection notably through the control of human activities which are incompatible with the conservation of these species. For these species, the Protocol recommends elaborating and implementing action plans. At the event organised by MEDMARAVIS in January 1995, which led to the Alghero Convention on Coastal and Marine Biodiversity in the Mediterranean, the participants recommended a certain number of criteria to be taken into consideration when assessing the status of species requiring particular attention. Several marine vegetation species were particularly identified as being rare, in decline, or having ecological importance in the Mediterranean. On the base of these various initiatives, bearing in mind the obvious decline recorded as regards several marine vegetation species, the Contracting Parties.

1. INTRODUCTION

The Contracting Parties to the Barcelona Convention, within the framework of the Mediterranean Action Plan, give priority to the conservation of the marine environment and to the components of its biological diversity. This was confirmed by the adoption of the new 1995 Barcelona Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA Protocol) and of its annexes, among them a list of endangered or threatened species.

Elaborating and implementing action plans to conserve one species or group of species is an effective way of guiding, coordinating and strengthening the efforts the Mediterranean countries are making to safeguard the natural heritage of the region.

The Mediterranean possesses over one thousand macroscopic marine vegetation species, with a high percentage of rare and/or endemic species. The role of these species in maintaining the balance of marine ecosystems is primordial. The direct and indirect consequences of their decline are many, at the ecological and even the economic level (primary production, spawning grounds, nurseries, stability of coasts...).

Although available knowledge on marine vegetation species in the Mediterranean is at present insufficient, and often fragmentary, it is obvious that these species are under increasing pressure, often anthropogenic in origin, in the Mediterranean, which engenders a degradation and decline of these species, observed in many Mediterranean regions.

The degradation observed and the evident decline of marine vegetation have reached such levels that it would be serious to postpone any longer taking measures on the scale of all the M e d i t e rranean countries. Information available today allows the drafting of an Action Plan for the Conservation of Marine vegetation in the Mediterranean Sea. The Action Plan will be adapted, where necessary, as further data become available.

The threats hanging over the marine plants in the Mediterranean are numerous and vary according to the affected species, and from one region to the next. Most of these threats are of anthropogenic origin.

The main known threats are :

- infrastructure development on the littoral
- pollution
- turbidity
- anchorage
- bottom trawling
- uncontrolled development of aquaculture
- use of explosives
- laying of sea cables
- recovery
- modification of sedimentary flow
- Accumulation of sedimentation originating from watersheds
- sand extracting from the sea bed and enlargement of beaches

- competition with non-indigenous species
- trampling

Other threats are foreseeable, such as the exploitation of certain marine vegetation species for industrial purposes.

2. OBJECTIVES

The main objectives aimed at by the present Action Plan are :

- Ensuring the conservation of macroscopic marine vegetation species and vegetal assemblages in the Mediterranean by implementing management and legal protection measures. These measures should also permit improved knowledge of these species;
- Avoiding loss and degradation of the seagrass meadows, and of other vegetal assemblages of importance for the marine environment, as marine habitats that are essential to the survival of many Mediterranean species, and keeping them in favourable conservation status;
- Ensuring the conservation of marine vegetal assemblages that could be considered natural monuments, such as barrier reefs of Posidonia and organogenic surface formations, terraces (platforms with vermitids covered by soft algae) and certain Cystoseira belts.

3. PRIORITIES

In implementing the Action Plan, priority will be accorded to :

At species level: the present Action Plan's provisions are to be implemented for all the macrophyta species inhabiting the Mediterranean. Particular attention must be paid, however, to the species appearing in Annex 2 to the SPA Protocol. These species are :

- **Magnoliophyta :** *Cymodocea nodosa* (Ucria) Ascherson, *Posidonia oceanica* (Linnaeus) Delile, *Zostera marina Linnaeus, Zostera noltii* Hornemann
- **Chlorophyta :** *Caulerpa ollivieri* Dostál
- **Heterokontophyta :** Cystoseira genus (except *Cystoseira compressa), Fucus virsoides J.* Agardh, *Laminaria rodriguezii* Bornet, *Sargassum acinarium* (Linnaeus) Setchell, *Sargassum flavifolium* Kützing, *Sargassum hornschuchii* C. Agardh, *Sargassum trichocarpum* J. Agardh
- **Rhodophyta :** *Gymnogongrus crenulatus* (Turner) J. Agardh, *Kallymenia spathulata* (J. Agardh) P.G. Parkinson, *Lithophyllum byssoides* (Lamarck) Foslie (Synon. *Lithophyllum lichenoides*), *Ptilophora mediterranea* (H. Huvé) R.E. Norris, *Schimmelmannia schousboei* (J. Agardh) J. Agardh, *Sphaerococcus rhizophylloides* J.J. Rodríguez, *Tenarea tortuosa* (Esper) Lemoine, *Titanoderma ramosissimum* (Heydrich) Bressan & Cabioch (Synon. *Goniolithon byssoides), Titanoderma trochanter* (Bory) Benhissoune *et al.*

Priority should also be given to other species of importance to the natural heritage of the Mediterranean, to be designated at a future time. Given the particular importance of Posidonia meadows and other vegetal assemblages of importance for the marine environment in the Mediterranean, their conservation is to be considered one of the main priorities of the present Action Plan.

At national level:

- inventory of species, determination and mapping of their distribution;
- identification of threats;
- establishment of protected areas;
- detailed mapping of seagrass meadows;
- protection of seagrass meadows and of other vegetal assemblages of importance for the marine environment;
- reinforced protection of the Posidonia barrier reefs and organogenic surface formations and certain Cystoseira belts;
- elaboration and implementation of appropriate legislation;
- establishment of marine vegetation monitoring networks;
- controlling the impact made by watershed infrastructures on the marine environment.

At regional level:

- strengthening cooperation and exchange of experience;
- make sure information is well circulated, particularly in the case where transboundary phenomena appear (pollution, invasion by nonindigenous species, etc.);
- promote and support the setting up of national marine vegetation monitoring networks;
- promote the creation of protected areas to protect Posidonia meadows and other vegetal assemblages of importance for the marine environment.

4. ACTION REQUIRED TO ATTAIN THE OBJECTIVES OF THE ACTION PLAN

4.1. Legislation

The species and vegetal assemblages of importance for the marine environment should be granted legal protection. In particular, the vegetal species enumerated in Annex 2 to the SPA Protocol should be accorded legal protection in the countries where they exist in order to control and, if necessary, prohibit any type of destruction or disturbance, including the taking, harvesting, cutting, uprooting , possessing, trading in, transporting and exhibiting for commercial purposes, of these species. It is also important to provide for penal sanctions for damage caused to seagrass meadows and other vegetal assemblages of importance for the marine environment. It is necessary to harmonize the Mediterranean.

legislation and to elaborate guidelines to assist countries in their efforts in this field.

The Contracting Parties which have not yet promulgated legislation for the protection of seagrass meadows an er vegetal assemblages of importance for the marine environment should do so as soon as possible.

The regulation relating to impact studies will have to be strengthened to make obligatory the assessment of impact on seagrass meadows of all human activity to be introduced in areas possessing seagrass meadows. The regulation will have to pay special attention to the impact on seagrass meadows and other vegetal assemblages of importance for the marine environment in the case of harbour facilities (including marinas), laying down pipes for sewage discharging at sea, dredging work or deposits of material from dredging and aquaculture projects. Guidelines for the assessment of e n v i ronmental impact on seagrass meadows will have to be elaborated by SPA/RAC in collaboration with Mediterranean experts and concerned organizations.

4.2. Creating marine protected areas for the protection of seagrass meadows and other vegetal assemblages of importance for the marine environment

It is necessary to establish marine protected areas to protect the most representative seagrass meadows and other vegetal assemblages of importance for the marine environment by applying the protection and management measures recommended by articles 6 and 7 of the SPA/BD Protocol.

The marine vegetal assemblages that could be considered natural monuments, such as barrier reefs of Posidonia, organogenic surface formations, terraces (platforms with vermitids covered by soft algae) and certain Cystoseira belts, will have to be identified as soon as possible and covered by a network of protected areas.

Those Mediterranean marine protected areas which contain seagrass meadows, Posidonia barrier reefs, organogenic surface formations, terraces (platforms with vermitids covered by soft algae) and certain Cystoseira belts or other marine vegetal assemblages and for which management and monitoring plans have not yet been developed and implemented, must be provided with such plans as soon as possible.

4.3. Publicity, information, public awareness and education

Maps showing the distribution of the main meadows in each country will have to be elaborated and circulated to the actors on the littoral (municipalities, industry, tourism, fishermen, etc.). Physical planning and management plans will have to take account of these maps.

Public awareness and education programmes directed at stakeholders, the local population and the broad public will have to be implemented to help reduce the impact on marine vegetation, especially as regards organogenic surface formations. NGOs should be encouraged to participate in such programmes.

4.4. Scientific Research

As regards scientific research on marine vegetation in the Mediterranean, priority must be given to:

- enhanced research at the assemblage, species and genetic level;
- the compilation of check-lists of vegetal taxa, assemblages and seascape as well as the determination and mapping of their distribution;
- the influence of environmental factors (temperature, nutrients in sea water and in the sediment, salinity, sedimentation, turbidity, etc.), environmental changes, the effects of pollution and biotic interactions;
- the study of incidental introduction and invasion of non-indigenous species and their impacts;
- the development of techniques of monitoring, mapping, environmental impact assessments and other tools for planning and management.

It is advisable to organize, within one year starting from the date when the present Action Plan is adopted, a Mediterranean symposium on marine vegetation in order to take stock of available scientific data. The symposium should be regularly held every four years.

4.5. Collection and circulation of data

Since scientific data on the biology, ecology and conservation of marine vegetation in the Mediterranean are rare and frequently fragmentary, it is necessary to gather the information that is available in this field and set up a Mediterranean databank held by the SPA/RAC and regularly updated in collaboration with the experts and organizations concerned. This databank will be used to produce technical syntheses and other technical documentation. It must be made available for consultation on the Internet.

To facilitate exchange, a directory of specialists, laboratories and o rganizations concerned with marine vegetation in the Mediterranean shall be established and regularly updated.

4.6. Training

It would be advisable to promote the training of specialists in the study and conservation of marine vegetation, especially in the countries of the south and east Mediterranean. To this end, it is important to identify already existing initiatives in this field and to give priority to taxonmy taxonomy, conservation biology and techniques for monitoring marine vegetation, as well as the subjects of research set out in section C.4 above.

4.7. National plans

To ensure more efficiency in the measures envisaged in the implementation of this Action Plan, Mediterranean countries are nvited to establish national plans for the conservation of marine vegetation. Each national plan should take into account the concerned country's, or even areas', specific features. It must suggest appropriate legislative measures, particularly for the environmental impact assessment of coastal infrastructure (building works, pipelines out to sea, and deposits of material from dredging) and to control activities which could affect marine vegetation (such as fishing and anchorage). The national plan shall be based on the available scientific data and will include programmes for (i) collection and regular updating of data, (ii) training and refresher courses for specialists, (iii) awareness-raising and education for the general public, actors and decision-makers and (iv) the conservation of seagrass meadows and other vegetal assemblages of importance for the Mediterranean

marine environment. The national plans must be brought to the attention of all concerned actors and, when possible, coordinated with the relevant national plans (e.g. emergency plan to deal with pollution).

5. REGIONAL COORDINATION STRUCTURE

Regional coordination of the implementing of the present Action Plan will be guaranteed by the Mediterranean Action Plan's (MAP) s e c retariat through the Regional Activity Centre for Specially Protected Areas. The main functions of the coordinating structure shall consist in:

- collecting, validating and circulating data at Mediterranean level;
- promoting the drawing up of inventories of species, seagrass meadows and other vegetal assemblages of importance for the Mediterranean marine environment;
- promoting transboundary cooperation;
- promoting and supporting the setting up of marine vegetation monitoring networks;
- preparation of reports on progress in the implementation of the Action Plan, to be submitted to the meeting of national focal points for SPAs and to meetings of the Contracting Parties; organizing meetings of experts on specific subjects relating to
- marine vegetation and training sessions.

Complementary work done by other international organizations, and aiming at the same objectives, shall be encouraged, promoting coordination and avoiding possible duplication of efforts.

6. PARTICIPATION IN THE IMPLEMENTATION

Implementing the present Action Plan is the province of the national authorities of the Contracting Parties. The concerned international organizations and/or NGOs, laboratories and any organization or body are invited to join in the work necessary for implementing the present Action Plan. At their ordinary meetings, the Contracting Parties may, at the suggestion of the meeting of National Focal Points for SPAs, grant the status of "Action Plan Associate" to any organization or laboratory which so requests and which carries out, or supports (financially or otherwise) the carrying out of concrete actions (conservation, resea rch, etc.) likely to facilitate the implementation of the present Action Plan, taking into account the priorities contained therein.

The coordination structure shall set up a mechanism for regular dialogue between the participating organizations and, where necessary, organize meetings to this effect. Dialogue should be made mainly by mail, including E-mail.

7. TITLE OF PARTNER OF THE ACTION PLAN

To encourage and reward contributions to the work of applying the Action Plan, the Contracting Parties may at their ordinary meetings grant the title of "Action Plan Partner" to any organizat ion (governmental, NGO, economic, etc.) that has to its credit concrete actions likely to help protect marine vegetation in the Mediterranean. Conditions for the awarding of the Partner title shall be adopted by the Contracting Parties following the advice given by the meeting of national focal points for SPA.

8. ASSESSING THE IMPLEMENTATION AND REVISION OF THE ACTION PLAN

At each of their meetings, the national focal points for the SPAs will assess the progress in the implementation of the Action Plan, on the basis of national reports on the subject and of a report made by the SPA/RAC on implementation at regional level. In the light of this assessment, the meeting of the national focal points for the SPA will suggest recommendations to be submitted to the Contracting Parties. If necessary, the meeting of the focal points may also suggest adjustments to the timetable given in the Annex to the Action Plan.

ANNEX : UPDATED WORK PROGRAMME AND TIMETABLE

The work programme would be as follows:

Activities for implementation of Action Plan	Deadline	Who ?
Regulatory activities		
-Encourage the Parties to better integrate all the plant species in Annexe II in the Party's regulatory tools (eg. protected species, impact study procedures, …)	As soon as possible	Parties & SPA/RAC
-Assist the Parties who have not already done so, to create MPAs for the conservation of Annex II plant species	As soon as possible	SPA/RAC & Parties
-Assist the Parties to create MPAs to strengthen the conservation of blue carbon ecosystems and the services they provide in particular to attenuate climate change impacts (carbon sinks)	As soon as possibles	Parties & SPA/RAC3
Inventory activities and mapping		
-Initiate a systematic inventory of natural monuments so that they can be included in future MPAs to ensure their sustainability	As soon as possible	SPA/RAC & Partiese
-Establish a first inventory of plant formations considered as carbon sinks and generalize mapping them	As soon as possible	SPA/RAC & Parties
-Assist the countries in identifying the main pressures which could degrade the marine vegetation and elaborate strategies to develop better practices (eg. restoration, strengthening of population)	Ongoing	SPA/RAC & Parties
Surveillance and monitoring activities		
-Promote the setting up of monitoring networks of the main marine vegetation assemblages in conformity with the principles and common indicators of the integrated monitoring and evaluation programme (IMAP)	As soon as possible	SPA/RAC & Parties
Assist the countries so that the monitoring networks of the main marine plant formations can be rendered sustainable so as to obtain long chronological series	Ongoing	SPA/RAC & Parties
Capacity and knowledge building activities		
-Organize a symposium every 3 years and disseminate as widely as possible the conclusions and propositions formulated by the participants	From 2021	SPA/RAC
-Update and make accessible the data pertaining to the mapping of priority habitats and natural monuments	As soon as possible	SPA/RAC & Parties
-Complete and regularly revise the list of specialists, laboratories and institutions and encourage exchanges amongst themselves	At symposiums	SPA/RAC
-Set up communication actions on annex II plant species by targeting the least well-known ones	As soon as possible	SPA/RAC & Parties
-Continue with capacity building activities and align them with the expectations of the Parties	Ongoing	Parties & SPA/RAC
-Test the setting up of training of national trainers (professional staff – relays) and assess its efficacy	As soon as possible	SPA/RAC
-Assist the countries in setting up regular national training sessions	Ongoing	Parties & SPA/RAC

SPA/RAC WORKING AREAS

*SPA/ RAC, the UNEP/ MAP **Specially Protected Areas Regional Activity Centre**, was created in 1985 to assist the Contracting Parties to the Barcelona Convention (21 Mediterranean contries and the European Union) in implementing the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol).*

POST-2020 SAPBIO

Strategic Action Programme for the **Conservation** of **Biodiversity** and **Sustainable Management** of **Natural Resources** in the **Mediterranean Region**

SPAMI

Specially Protected Areas of **Mediterranean Importance**

Marine turtles

Cetaceans

Specially Protected Areas

Monitoring

Mediterranean Monk Seal

Cartilaginous fishes
(Chondrichtyans)

Coralligenous and other calcareous bio-concretions

Marine vegetation

Marine and coastal bird species

Listed in Annex II of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean

Dark Habitats

Habitats and species associated with seamounts, underwater caves and canyons, aphotic hard beds and chemo-synthetic phenomena

Species introduction and invasive species



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The Mediterranean Biodiversity Centre

Specially Protected Areas Regional Activity Centre (SPA/RAC)
Boulevard du Leader Yasser Arafet
B.P. 337 - 1080 - Tunis Cedex - Tunisia
+216 71 206 649 / +216 71 206 485
car-asp@spa-rac.org

www.spa-rac.org

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