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MEDITERRANEAN ACTION PLAN

Fifth Meeting of National Focal Points for SPA

Valencia, 23-26 April 2001

REPORT OF THE FIFTH MEETING OF NATIONAL FOCAL POINTS FOR SPECIALLY PROTECTED AREAS

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Introduction

1. In accordance with the decision of the Eleventh Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution, and its Protocols (Malta, 27-30 October 1999), the Regional Activity Centre for Specially Protected Areas (RAC/SPA) invited the National Focal Points for Specially Protected Areas to hold their Fifth Meeting in Valencia, Spain, from 23 to 26 April 2001.

2. The Meeting was held at the University of Valencia and was organized thanks to the generous financial contribution made by the Spanish authorities, the General Directorate for Conservation of Nature of the Ministry of the Environment, and the University of Valencia.

Participation

3. The Meeting was attended by representatives of the following Contracting Parties: Albania, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, European Community, France, Greece, Israel, Italy, Lebanon, Libyan Arab Jamahiriya, Malta, Monaco, Morocco, Slovenia, Spain, Syrian Arab Republic, Tunisia and Turkey.

4. The Coordinating Unit for the Mediterranean Action Plan (UNEP/MEDU) was represented.

5. The following institutions and non-governmental organizations were represented by observers: CHELON, DELPHIS, ICRAM, Interim Secretariat of ACCOBAMS, MEDASSET, MEDMARAVIS, MIO-ECSDE, RAMOGE, Seagrass 2000 Association, SEHUMED, University of Corsica (France) and WWF.

6. RAC/SPA acted as the secretariat for the Meeting.

7. The list of participants is attached as Annex I to the present report

Agenda item 1 - Opening of the Meeting

8. Mr. Mohamed Adel Hentati, Director of RAC/SPA, welcomed participants to the Meeting and expressed thanks to the authorities of Spain for the assistance provided in its organization. Noting that the Meeting marked the first meeting of focal points since the entry into force of the new SPA Protocol, he briefly outlined the need for urgent action to address the critical situation of some Mediterranean species, in particular the Monk seal. He enumerated the items on the agenda of the Meeting, stressing the overall need to strengthen cooperation and collaboration between the Parties of the Barcelona Convention.

9. Mr. Miguel Aymerich, speaking on behalf of the General Directorate for Nature Conservation of Spain, welcomed participants and said that Spain was honoured to host the current Meeting. Spain continued to have a clear

commitment to the Mediterranean, and welcomed the opportunity to participate in the instruments set up for its protection and conservation.

10. Mr. Lucien Chabason, Coordinator of the Mediterranean Action Plan, recalling also that this was the first meeting of focal points since the entry into force of the SPA Protocol and the signing of the memoranda of understanding with both the Convention on Biological Diversity (CBD) and the Ramsar Convention. He welcomed participants and expressed thanks to the Spanish authorities for helping to organize the Meeting, pointing out that Spain continued to display a very active interest in the sustainable development of the Mediterranean region. Several recent shipping accidents in the region had demonstrated the impact of marine pollution on biological diversity. The Barcelona Convention, by virtue of its multidisciplinary and well-equipped nature, needed to be kept up-to-date, in order to have better control over emergency measures.

11. The delegates at the current Meeting, he continued, also needed to review the past two years of activities by RAC/SPA, as well as the status of implementation of the various action plans, with a view to preparing for the upcoming Twelfth Meeting of the Contracting Parties to the Barcelona Convention, to be held in Monaco in November 2001. Concerning the examination of the subject of SPAMIs, he was gratified to note that countries had already drawn up some proposals for such sites.

12. He was particularly glad to note the presence of observers from Non-governmental organizations at the Meeting, and pointed to their vital role in conservation issues, particularly with regard to providing knowledge, education, and raising awareness. They also played an essential role in the implementation of the action plans related to conservation of biodiversity.

13. He pointed to the urgent need for countries to ratify the SPA Protocol, even though it had already entered into force, as well as the amendments to the Barcelona Convention itself. He underlined the importance of cooperation with other Conventions, particularly CBD and Ramsar, and looked forward to intensified cooperation with the Bonn Convention on Conservation of Migratory Species of Wild Animals (CMS) and its ACCOBAMS Agreement, in particular.

14. In conclusion, he congratulated RAC/SPA on its dynamic accomplishments. The Contracting Parties to the Barcelona Convention had strengthened the budget of the Centre, which, in turn, had been increasingly active in mobilizing extra-budgetary resources. RAC/SPA continued to make a valuable contribution to the activities of MAP.

Agenda item 2 - Rules of Procedure

15. The Meeting noted that the Rules of Procedure adopted for Meetings and Conferences of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its Protocols (UNEP(OCA)/IG.43/6, Annex XI) would apply *mutatis mutandis* to its

deliberations.

Agenda item 3 - Election of Officers

16. After informal consultations, the Meeting unanimously elected the following officers:

Chairperson:	Mr Tahar OU-RABAH (France)
Vice-Chairpersons:	Mr Akram ISSA DARWISH (Syrian Arab Republic) Ms Stavroula SPYROPOULOU (Greece)
Rapporteur:	Ms Özlem Ebru KAMILO LU (Turkey)

Agenda item 4 - Adoption of the Agenda and organization of work

17. The Meeting adopted the provisional agenda contained in document UNEP(DEC)/MED WG.177/1. Two delegates announced that they intended to introduce additional subjects under the consideration of the item on “Other matters”. The agenda is attached as Annex II to the present report.

18. The Meeting approved the organization of work proposed by the Secretariat, including the proposal to set up the following three working groups to examine specific issues in detail and to report to plenary thereon: Working Group 1, on environmental impact assessment (EIA) of seagrass meadows and species introductions, coordinated by Mr. Robert Turk (Slovenia); Working Group 2, on the Mediterranean Monk seal, coordinated by Mr. Zamir Dedej (Albania); and Working Group 3, on the Mediterranean Initiative on Taxonomy, coordinated by Mr. Giulio Relini (Italy).

Agenda item 5 - Format for the Reports of the NFP Meetings

19. Introducing the item, the Secretariat recalled that, at the end of the fourth meeting of the national focal points for SPAs (April 1999), at the adoption of report of the Meeting, RAC/SPA had been invited to assess several options for presenting the reports of the Meeting of the National Focal Points, and to make a suggestion on the subject to the Fifth Meeting. The Secretariat introduced the draft format for reports of meetings of National Focal Points for SPAs (UNEP(DEC)/MED WG.177/3). The delegations were invited to review the proposed format and finalize it for adoption with a view to using it for preparing reports of meetings of Focal Points, starting from the Fifth Meeting.

20. Representatives considered that in the draft format for reports proposed by the Secretariat, more detail should be included on standing items of the agenda, such the status of activities carried out in the inter-sessional period, as well as cooperation with other international organizations. In addition, it was considered necessary to include a new chapter dealing with the

implementation of the recommendations of previous meetings of the Parties and of the focal points. The Meeting agreed to incorporate those proposals into the draft format for reports of meetings of RAC/SPA focal points. The draft format is contained in Annex V to the present report.

Agenda item 6 - Country Reports on Conservation of Natural Sites and Species

21. The representatives were invited to present brief summaries of the actions carried out in their respective countries as part of the implementation of the SPA Protocol, and to provide the Secretariat with a written submission, no more than four pages long, summarizing the said activities. The submissions are contained in Annex III` to the present report, without formal editing by the Secretariat.

22. With the aim of making the best possible use of available time at meetings of the focal points, the Meeting agreed that, in future, delegates to the meetings of national focal points for SPAs would submit their country presentations to the Secretariat two months before the meeting, to enable them to be compiled into a working document of the meeting. Only if they considered it necessary to make comments on the status of implementation of the SPA Protocol or to provide supplementary or updated information would delegates need to make a further presentation at the meeting itself. The content of the working document would be subsequently annexed to the report of the meeting (Annex III).

Legal and institutional framework for the conservation of species and sites

23. Many representatives reported on the new and/or upgraded legislation approved in their countries relating to protection of the environment and conservation of biodiversity. Other representatives reported on legislation that was under preparation, or was with the government for approval. Several representatives observed that, despite all efforts in their countries, there were still gaps in their legislation related to protection and conservation of nature and the environment in coastal and marine areas.

24. One representative reported that, due to a new Ministerial decision, a special position was foreseen for the national focal point for SPAs in the near future, which would allow greater efficiency in the tasks to implement the Protocol and its Action Plans.

25. One representative reported on the results of a 1999 RAC/SPA mission to investigate the legal and institutional framework for environmental protection, and to review implementation of the regulations governing marine and coastal protected areas in the country, and pointed to the ongoing cooperation with Monaco in that connection.

Elaboration and implementation of the National Biodiversity Strategy and Action Plans

26. Several representatives reported on the preparation and adoption of the National Biodiversity Strategy and Action Plans, and on the establishment of the necessary institutional structures. However, one representative noted that, owing to lack of institutional capacity and financial means, the development and implementation of the action plans was limited and slow.

27. One representative reported that the national strategy was being developed through plans for sustainable development in productive sectors, which would draw up concrete measures to be implemented in order to minimize or eliminate negative impacts. The process would be implemented for the tourism, agriculture and transport sectors.

Marine and coastal protected areas (new developments)

28. A number of representatives reported that their countries had increased the number of protected areas through the creation of new national or nature parks, many of which a number were situated in marine and coastal areas. Proposals for parks were also under preparation. Several representatives described activities in their countries under the MedWet Coast Project. The representative from Monaco reported on the establishment of the agreement for the creation of a sanctuary for marine mammals between France, Italy and Monaco. One representative reported that her country had identified a site to be considered as the country's first Ramsar site. The Meeting was also informed about environmental education activities, in collaboration with universities, research institutions and non-governmental organizations, to protect flora and fauna in their habitats.

Preparing and updating of relevant inventories

29. Several representatives reported on the work to compile data using the Standard Data Entry Forms (SDFs) and some said that they had already applied the criteria contained in the SDF, with a view to subsequently submitting SPAMI candidates to the focal points. In one country, the SDF had not yet been used, but it was intended to include it in the environment protection information system and future projects related to protection of coastal and marine areas. One representative that inventories of fauna and flora of SPAs in his country used the MedWet data sheet format.

30. A number of representatives reported on the status of inventories of endemic and Mediterranean species. Several representatives said that new lists of marine and coastal species of flora and/or fauna were being prepared or were undergoing legal review, and several reported on the beginning of preparatory work within working groups established to that end.

31. One representative reported on a training course for experts on inventorying of benthic marine habitats, which had been organized with the assistance of the University of Lecce (Italy), and supported by RAC/SPA.

32. One representative reported that a LIFE project on special areas of conservation, to facilitate implementation of EU Directive 92/43/EEC, was nearing completion in her country, and an inventory of coastal/marine habitats and of aquatic species of flora and fauna had been drawn up. A number of areas fulfilling the criteria of the Directive had been included in the national list of sites to be proposed for the NATURA 2000 network.

Adherence to, and activities under, relevant international instruments

33. A number of countries had become party to various international treaties and legal instruments concerning nature and environmental protection, a number had ratified the amendments to the Barcelona Convention and its Protocols, and others were preparing to ratify them in the near future. One representative reported that, in many instances, fulfilment of the obligations of the instruments in his country was proving to be slow.

Protected marine species of flora and fauna

34. In many countries, turtles, monk seals, cetaceans and certain marine vegetation constituted protected species, and delegates reported on the existing established areas and on the activities that were being carried out for the purpose of conservation and protection, as well as on proposals and legislation that were currently under consideration, and on newly established capacities and projects.

35. One representative said that his country had no protected species of marine and coastal flora or fauna. Another reported that his country only undertook an action plan for marine turtles. Some representatives reported that the activities within the framework of the action plans for protected species were not being implemented systematically, due to a lack of organizational and financial means.

36. One representative reported on the listing of species in his country's National Catalogue of Threatened Species. Such an inclusion implied that a national action plan for the species concerned had to be developed. Another reported on preparations for an action plan for sharks in his country.

37. With regard to monk seal conservation, some representatives reported on progress and positive trends of the monk seal "nuclei" in their countries, due to the implementation of the relevant action plan. The establishment of some protected areas which were considered as important habitats for monk seal was also reported. Others reported that there had been no sightings of the species in their areas.

38. Another representative informed the Meeting about the creation of a new national action plan for the conservation of Mediterranean marine vegetation in his country and the activities carried out within its framework. Yet, another reported that the Fisheries Law, banning trawling in shallow waters (less than 55m), provided protection for *Posidonia* meadows. Others reported on work to monitor and map vegetation area, and one said that detailed maps of sedimentary formations and benthic biocoenoses had been published by her

country.

39. Some representatives informed the Meeting about the ongoing activities for the protection and conservation of cetaceans. One said that, in her country, compensation to fishers for net damage by dolphins had been granted in 2001. Some others reported on activities for data collection for databases on sightings and strandings of cetaceans.

40. Several representatives reported on specific activities to protect marine turtles, particularly with regard to identifying threat, protecting nesting sites and ensuring hatchling survival. One representative reported on ongoing and completed projects to assess by-catch of marine turtles in various areas, as well as a completed project to assess interaction of turtles and fishing gear.

41. Several representatives reported on cooperation activities at the bilateral or subregional levels for the conservation of species. The representative of Monaco reported that, during 1999 and 2000, Monaco had funded the provision of a Monegasque officer to assist the RAC/SPA Secretariat in work for the implementation of the SPA Protocol.

42. One representative reported on studies and experiments to artificially breed three protected species listed in Annex II of the SPA Protocol, with the aim of generating know-how and transferring it to managers of marine parks.

Activities related to alien species

43. Several representatives reported on activities to identify and monitor occurrences of *Caulerpa* species, to increase awareness among fishers and local people, and to carry out research on the species. One representative reported on the monitoring of *Styropodium* in the marine area of her country. Another reported that the recommendations of the March 1998 Heraklion workshop on invasive *Caulerpa* species in the Mediterranean were being implemented by scientific institutions in the country. Yet, another reported the findings of a comprehensive review of alien species that her country had carried out in the eastern Mediterranean.

Agenda item 7 - Technical aspects related to the drawing up of the List of Specially Protected Areas of Mediterranean Importance (SPAMIs)

44. The Secretariat introduced documents UNEP(DEC)/MED WG.177/5, “Draft annotated format for the presentation reports for the areas proposed for inclusion in the SPAMI list”, and UNEP(DEC)/MED WG.177/Inf.4, recalling that these two documents were outputs from the expert meeting held in Ajaccio, Corsica, in November 2000.

45. Some representatives sought clarification concerning certain difficulties they had encountered in applying the annotated format for the presentation reports. Following an exchange of views on the content of the document, the Meeting adopted the document, as amended by the incorporation of some

minor modifications proposed by some representatives, with a view to submitting it to the Contracting Parties at their twelfth meeting, emphasising that each presentation report should be necessarily signed by a national qualified authority. The adopted format for presentation reports nominating those areas proposed for inclusion on the list of SPAMIs is contained in Annex VI to the present report.

46. Following a proposal by one representative, supported by others, the Meeting invited RAC/SPA to prepare a ”drafting aid” for the presentation reports and to include an explanation of the procedures for inclusion on the list of SPAMIs.

47. Following the consideration of the draft grid for the objective evaluation of proposals for inclusion on the list of SPAMIs, the Meeting agreed to use this tool on a pilot basis for the first proposals for inclusion on the list of SPAMIs, with the aim of further refining the tool later.

Agenda item 8 - Progress and further development of the activities of RAC/SPA

48. The Secretariat presented the activities that RAC/SPA had been carrying out since the Fourth Meeting of National Focal Points for SPAs (Tunis, 12-14 April 1999), with reference to the relevant sections of document UNEP(DEC)/MED WG.177/4.

a. New internal organization of RAC/SPA

49. The Director of RAC/SPA informed the Meeting about the new arrangements made in consultation with the MAP Coordinator concerning the internal organization of RAC/SPA, and briefly set out the aims. In that connection, he pointed out that, with the adoption of the new SPA Protocol in 1995 and its entry into force in 1999, RAC/SPA had seen a considerable increase in its activities. It had even been necessary to embark upon the elaboration of several technical tools that were required for the implementation of the new arrangements introduced under the new Protocol, particularly with regard to inventories and the list of SPAMIs. Moreover, the adoption of the new Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea and the revision of the Action Plan for the Conservation of Mediterranean Marine Turtles triggered a series of activities linked to the implementation of their respective provisions. In addition, an important new project had been launched in January 2001 for the elaboration of a Strategic Action Plan for the conservation of biological diversity in the Mediterranean region (SAP-BIO).

50. Thus, it had been necessary to reorganize the internal structure of RAC/SPA, in order to adapt it to the activities arising from the new attributes of RAC/SPA. To that end, in consultation with the MAP Coordinator, it was decided to establish the post of Scientific Director, who, under the supervision of the Director of RAC/SPA, would be responsible for supervising the scientific activities of the Centre. In addition, the job descriptions of the other two experts within RAC/SPA had been adjusted in line with the internal reorganization.

51. He explained that the new internal reorganization had entailed no new budgetary implications nor new recruitment of experts.

52. The Director of RAC/SPA reported that, following the departure of Mr. Marco Barbieri in 2000, a vacancy announcement for the post of expert in marine biology had been circulated. Following a painstaking selection process, Mr. Giovanni Torchia had been recruited as of 1 March 2001.

53. The representatives expressed their approval for the new internal organization that had been implemented within RAC/SPA.

b. Action Plan for the Management of the Mediterranean Monk Seal

54. Introducing this sub-item, the Secretariat stressed that the activities undertaken in the Mediterranean for the conservation of the monk seal had not been sufficient to prevent the decline of the species. It had proved necessary to contemplate the implementation of the provisions of paragraph 21 of the action plan. A Working Group on the Monk seal met to study the proposal set out by the Secretariat in section 2 of document UNEP(DEC)/MED WG.177/4.

55. The Coordinator of the Working Group reported on the group's deliberations, stressing that there had been general agreement not to support the Secretariat's proposal, as it was considered to be premature, since participants believed that all the other measures for the conservation of the Monk seal had not been implemented. He said that the Working Group had reached agreement on several immediate measures, for implementation in the short term.

56. Several representatives, while expressing understanding for the fears of the Secretariat concerning the situation of the Monk seal, agreed on the following points:

- Increased efforts to collect scientific information;
- The need to continue efforts to inventory sites containing possible habitats for the Monk seal, with a view to their conservation;
- The need to elaborate action plans at the national level, based on the Action Plan for the Management of the Mediterranean Monk Seal adopted within the framework of MAP.

57. Concerning data collection, one representative recalled that, despite the increase in the number of research programmes on the Monk seal, many data were not available. The representative of a regional economic integration organization offered to make available the studies carried out by his organisation.

58. Concerning inventories of sites containing possible Monk seal habitats, some representatives requested RAC/SPA support to conduct investigations to assess the presence of the Monk seal and to inventory the habitats it frequented. One representative recalled that, two years ago, an assessment of the status of the Mediterranean Monk seal populations had been made,

which had indicated that populations were in decline and that urgent conservation measures were necessary.

59. The Meeting agreed to set up, in the immediate future, an emergency group of specialists to draw up an emergency plan, with concrete actions and a timetable.

60. The Meeting adopted the draft recommendations submitted by the Coordinator of the Working Group. The text of the recommendations is found in Annexes IV and VII to the present report.

c. <u>Action Plan for the Conservation of Mediterranean Marine Turtles</u>

61. Introducing this sub-item, the Secretariat described the activities of RAC/SPA concerning the implementation of the Action Plan for the Conservation of Marine Turtles in the Mediterranean, with reference to the relevant section of document UNEP(DEC)/MED WG. 177/4.

62. The Director of RAC/SPA informed the Meeting about the progress made for holding the first Mediterranean conference on marine turtles, scheduled to take place in Rome in October 2001, in collaboration with the Secretariats of the Berne and Bonn Conventions and of ICRAM. He expressed thanks to the Government of Italy for its assistance in organizing the meeting.

63. The Secretariat subsequently introduced the draft Guidelines for Legal Frameworks for Conservation and Management of Mediterranean Marine Turtles, contained in document UNEP(DEC)/MED WG.177/7. The delegates were invited to review and finalize the guidelines, with a view to submitting them to the Contracting Parties at their next meeting.

64. Several representatives congratulated RAC/SPA on its work and, in particular, on the outputs that had been drawn up. One representative stressed the need to involve fishers to a greater degree in the conservation of marine turtles and congratulated RAC/SPA for the document produced on sensitising and informing fishers, with the aim of reducing by-catch mortality.

65. The Meeting underlined the need for regional and national coordination and, in this respect, one representative proposed that the Contracting Parties be asked to promote national networks of experts, in order to reinforce the Mediterranean network and equally underlined the need of co-ordination with FAO and GFCM for measures concerning the protection of turtles in the Mediterranean interacting with fisheries.

The meeting stressed the importance of training courses as basic tool in marine turtle conservation and invited RAC/SPA to continue to support such courses.

66. Concerning tagging, one representative requested that tagging methods be standardized and proposed that the Contracting Parties be asked to provide no further funding for tagging programmes that did not conform to the established norm. An observer from a non-governmental organisation recalled

that RAC/SPA had launched a regional tagging programme, to which several countries did not adhere.

67. The Meeting approved the proposal to centralize the information resulting from different tagging programmes within a database administered by RAC/SPA.

68. In answer to a question formulated by several representatives concerning the selection criteria for inclusion on the directory of marine turtle specialists working in the Mediterranean region, the Secretariat described the procedure for compiling the directory, and the Meeting stressed the role of the national focal points in that activity.

69. The Meeting approved the recommendation to extend the directory of marine turtle specialists to include relevant organizations and/or laboratories.

70. The Meeting approved the Secretariat's proposals concerning (a) the elaboration of a project, to be submitted for EC financing, to identify important habitats for marine turtles and (b) the creation of a web site to group all available resources for the conservation of Mediterranean marine turtles. An observer from a non-governmental organization informed the Meeting that her organization was ready to collaborate with RAC/SPA in the creation of the web site in question.

71. The recommendations of the Meeting on the subject of Marine turtles are contained in Annex IV of the present report.

72. With regard to the guidelines for the establishment of legislation and rules governing the conservation and management of marine turtle populations and habitats, the representatives stressed that the document covered all aspects for the implementation of the Action Plan and dealt with incorporation of the provisions of international agreements (e.g. CITES) into national legislation. One representative recommended that, within the framework of strengthening cooperation with other conventions, a representative of the CITES Secretariat be invited to attend future meetings.

73. The representative of a regional economic integration organization expressed reservations about the guidelines, particularly concerning the part dealing with the interaction between fishing and marine turtles.

74. Concerning the question of the status of the guidelines, the Meeting agreed to recommend that the Contracting Parties take note of the document and monitor its application.

d. <u>Action Plan for the Conservation of Cetaceans in the Mediterranean Sea</u>

75. The representative of the Secretariat informed the Meeting that, during the preceding two years, RAC/SPA had collaborated closely with the Interim Secretariat of ACCOBAMS and with CIESM in activities to implement the Action Plan for the Conservation of Cetaceans in the Mediterranean Sea. Those activities primarily involved developing the monitoring of cetacean

strandings in Mediterranean countries. He presented the activities carried out by RAC/SPA to implement the Action Plan, drawing attention to section 4 of document UNEP(DEC)/MED WG.177/4.

76. The representative of Spain presented his country's proposal on setting up a Mediterranean database for cetacean strandings (MEDACES). He explained that the creation of that database had been recommended by the workshop on cetacean strandings organized by RAC/SPA in Montpellier. A document describing the aims of the database and its envisaged operating methods had been distributed to participants. The representative stressed that the database project had been elaborated in close cooperation with experts from several Mediterranean countries and in concert with RAC/SPA. It would be governed by a deontological code.

77. RAC/SPA would be the depositary of the database, and its administration would be undertaken by the Cavanilles Institute of Biodiversity of the University of Valencia, which would receive financial support from the Spanish authorities to that end.

78. Several representatives supported the creation of the database and some informed the Meeting that they would be collaborating closely with RAC/SPA and the Cavanilles Institute in the development and application of the database.

79. The meeting agreed that it was important that RAC/SPA remain in charge of the work of the database and that the data to be included in MEDACES should be supplied annually by national coordination centres designated by the national focal points for SPAs.

80. Following the debate, the Meeting approved the project to create a database.

81. Several representatives asked RAC/SPA to assist them in elaborating and implementing national action plans for the conservation of cetaceans, including the networks for monitoring strandings and for training. It was stated, in this context, that the Sanctuary for marine mammals in Ligurian Sea provides for a management plan whose suggested measures would support the Action Plan.

82. The representative of the Interim Secretariat of ACCOBAMS reported on the progress of the Agreement and presented the draft Memorandum of Cooperation, which would govern the participation of RAC/SPA in the implementation of ACCOBAMS as a subregional coordinating unit for the Mediterranean. She stressed that the memorandum aimed at harmonizing the implementation of the ACCOBAMS conservation plan and the Barcelona Convention's Action Plan for the Conservation of Cetaceans.

83. The Meeting approved the proposals contained in the said Memorandum of Cooperation.

e. Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea

84. The Secretariat briefed participants on the activities carried out to implement the Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea, and introduced to section 5 of document UNEP(DEC)/MED WG.177/4 and its annex II. Delegates were invited to give their opinion on the activities undertaken and give instructions for future RAC/SPA activities in this field.

85. One representative stressed the importance of the activity set out in the Action Plan to map and inventory seagrass meadows and to develop the capacities of countries to perform this task.

86. Following a proposal by one representative, the Meeting recommended that the monitoring of the health of meadows be promoted and that the referent techniques be disseminated through technical manuals and training.

87. The representative of the Secretariat also drew attention to a document prepared in accordance with paragraph 22 of the Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea, entitled "Draft Guidelines for Impact Assessment on Seagrass Meadows" (UNEP(DEC)/MED WG. 177/8). The Secretariat introduced the document and recalled that Working Group 1, at its first meeting, had considered the Draft Guidelines for Impact Assessment on Seagrass Meadows. The Coordinator of the Working Group introduced the report of the Group (contained in Annex IX to the present report) and outlined the proposed amendments to the Draft Guidelines contained therein.

88. The Meeting approved the Draft Guidelines for Impact Assessment on Seagrass Meadows, as amended by Working Group 1, for transmission to the Contracting Parties at their twelfth meeting. The text of the Draft Guidelines is contained in Annex X to the present report.

89. The Secretariat also presented the requests made by six Mediterranean institutions to be associated, according to the terms of Articles 25 and 26 of the Action Plan, with the implementation of the Action Plan: GIS Posidonie (France); ICRAM (Italy); INSTM (Tunisia); the Secretariat of the RAMOGE Agreement; the University of Corsica (France); and the World Seagrass Association. Delegates were invited to consider those requests, with a view to submitting them to the next Meeting of the Contracting Parties.

90. Representatives speaking on behalf of the Secretariat of the RAMOGE Agreement, ICRAM (Italy), the University of Corsica (France) and the World Seagrass Association made brief presentations of their candidatures.

91. The Meeting approved the applications of the institutions to be granted the status of “Action Plan Associate”, and agreed to transmit them to the Contracting Parties at their twelfth meeting for approval.

f. Development of protected areas

92. Introducing this sub-item, the Secretariat described the activities of RAC/SPA to assist Mediterranean countries in the identification, creation and management of marine and coastal protected areas, and drew attention to section 6 of document UNEP(DEC)/MED WG.177/4. The delegates were invited to look into the activities undertaken and make recommendations for future RAC/SPA activities in this field.

93. The representative of the Secretariat recalled that, with the entry into force of the Protocol, the national focal points had been given the task of examining the proposals for inclusion on the list of SPAMIs. To carry out that task, it was important that the focal points, at their meeting, set out internal procedures. In that context, the Secretariat proposed that candidate areas for inclusion on the list which were submitted to RAC/SPA, and which failed to meet the eligibility criteria for SPAMIs concerning management and legal protection, should be placed on a list of candidate areas for SPAMIs and efforts should be made to make them eligible for inclusion on the SPAMI list, within 3 years. The aim would be to stimulate Mediterranean solidarity and cooperation for the improved protection and management of the natural heritage of the region. This would also offer the advantage of encouraging countries to identify and nominate relevant areas, while awaiting assistance to finalize dossiers, which they were unable to complete themselves.

94. During the discussion, some representatives called for prudence in ensuring that there would be no confusion between the provisional list and the official list of SPAMIs, and one representative requested a written clarification from the Secretariat on the procedure proposed for inclusion of areas on the provisional list. The representative of a regional economic integration organization considered that the procedures were too abstract, and asked how to identify who would provide assistance, and on the basis of what criteria.

95. Several representatives, however, expressed their support for the Secretariat's proposal.

96. In reply to questions from several representatives, the representative of the Secretariat explained that the list in question would contain only areas of obvious Mediterranean interest and for which the Party (Parties) concerned had provided a presentation report in line with the adopted format. The Secretariat stressed that the said list constituted an internal working tool for the focal points, with the aim of assisting Parties that had expressed a need to improve the protection and/or management of Mediterranean protected areas, so that they could meet the requisite conditions for SPAMIs.

97. The Meeting approved the proposal to compile a list of areas which countries had identified as candidates for SPAMIs, but for which the selection criteria required under the Protocol could not be completely met, pending the provision of assistance to the country concerned.

98. The following representatives informed the Meeting of their country's intention to submit proposals for inclusion on the SPAMI list:

- France, Italy and Monaco, concerning the Franco-Italian-Monegasque sanctuary for the conservation of marine mammals;
- Tunisia, concerning the sites of Zembra, la Galite and the Kneiss Islands;
- France, concerning several sites at Port-Cros national park.

99. On the sidelines of the current Meeting, the representatives of Monaco and Tunisia gave presentations describing the sites that were the subject of the nominations made at the Meeting.
The representative from Monaco, whose country was the depository of the Agreement on the marine mammal Sanctuary, distributed on behalf of France, Italy and Monaco, a summary and a map showing the Sanctuary area. In accordance with Article IX of the Protocol, the complete file will be sent to the Focal Points, when the modifications suggested by the meeting will be made by the three countries. The inclusion of the Sanctuary on the SMAPI List will be proposed by the three concerned countries for approval by the next meeting of the Contracting Parties in November 2001.

g. Training activities developed by RAC/SPA

100. Introducing this sub-item, the Secretariat made a summary of the training activities set out in the relevant section of document UNEP(DEC)/MED WG.177/4 and detailed in document UNEP(DEC)/MED WG.177/Inf.3. In addition, the Secretariat presented the results of the study carried out in 1999 to assess training needs, and described the main training activities planned by RAC/SPA for the biennium 2002 and 2003.

h. Data collection (including inventories and databases)

101. The representative of the Secretariat gave a summary of the activities undertaken as part of elaborating technical tools for inventories, describing (a) the tools already adopted and those still being prepared, and (b) the actions carried out by RAC/SPA to assist Mediterranean countries in applying the tools that had been adopted, with appropriate reference to the relevant sections of document UNEP(DEC)/MED WG.177/4. He thanked the Italian authorities for their support in organizing the expert meeting to finalize the SDF, which had subsequently been adopted by the Bureau of the Contracting Parties. He explained that work was underway to prepare a reference list of terrestrial coastal habitats and that an expert meeting on that subject was planned for the following November.

102. Participants were invited to inform the Meeting about future activities carried out by their countries or organizations, with particular reference to the Secretariat's suggestions on the elaboration and implementation of a project to assist the countries of the region in inventorying marine and coastal sites of interest for conservation.

103. The Secretariat also presented RAC/SPA's work related to its databases and to the assistance given to certain countries to develop national databases on biological diversity.

104. Some representatives reported that projects based on use of the SDF were underway in their countries and that collaboration with RAC/SPA had been initiated on the subject. The RAMOGE Agreement implemented the SDF to compile inventories and will provide RAC/SPA with suggestions to improve this tool.

105. Participants stressed the importance of this tool and recommended that it be computerized. It was also recommended that long-term training courses be organized on the use of the SDF and to assist those countries that had requested help in its application.

i. SAP BIO Project

106. Introducing this sub-item, the representative of the Secretariat informed the Meeting about the progress made by the SAP BIO Project, with reference to section 9 of document UNEP(DEC)/MED WG.177/4, and to Annex 3 of that document, which provided a summary of the project. He pointed to the upcoming meeting of National correspondents in Alicante in July 2001, which was to adopt a general outline for the preparation of SAP BIO, as well as guidelines for the preparation of national reports, and which was to discuss the mechanism for coordinating a regional network of national correspondents.

107. One representative considered that the SAP BIO Project needed to take account of the existing agreements and action plans and look at interlinkages between them. He believed that the SAP BIO Project should work closely with national biodiversity strategies and action plans under the CBD and should consider inland waters and agriculture. It was first necessary to assess the National Biodiversity Strategy and Action Plans under CBD to see how they addressed the obligations of the CBD and the SPA Protocol. Then the differences in implementing those strategies and action plans could be assessed, and the funding and capacity-building needs could be examined. The representative stressed the importance of involving the Mediterranean bodies representing the fishing sector.

108. The Secretariat agreed to pass the comments and concerns expressed on to the next meeting of the National Correspondents of the SAP BIO Project.

j. CAMPs

109. The Secretariat informed the Meeting about the main activities carried out by RAC/SPA under the CAMP projects, which concerned the CAMP-Malta project and preparations for the CAMP-Lebanon project.

110. The representative of Malta described the main components of the CAMP project in his country and reported on their progress.

k. Coordination with other organizations

111. The representative of the Secretariat informed the Meeting about the initiatives taken to strengthen collaboration with the Secretariats of other Conventions of relevance to the Mediterranean. With reference to the relevant section of document UNEP(DEC)/MED WG.177/4, the agreements signed with the Secretariat of the Convention on Biological Diversity and the Secretariat of the Ramsar Convention were presented.

112. Several representatives congratulate RAC/SPA on the efforts to carry out cooperation and expressed their satisfaction at the synergy between RAC/SPA and other organizations.

113. Following a proposal by one representative, the Meeting invited RAC/SPA to contact the Secretariats of the Berne and Bonn Conventions, with a view to reinforcing the collaborative links between RAC/SPA and those organizations by signing a Memorandum of Cooperation with each of them.

l. Other activities

Species introductions

114. The Coordinator of Working Group 1 briefed the Meeting on the work of the Group at its second meeting, to consider issues of species introductions, and introduced the report of the Group on that subject. He reported that the Group reviewed only one portion of the document and had been unable to reach agreement on approval of the Secretariat's proposed draft Guidelines for Introduction and Reintroduction of Marine Species in the Mediterranean Sea, as contained in document UNEP(DEC)/MED WG.177/6, and considered that the document needed to be revised.

115. The representative of the Secretariat clarified that the mandate of RAC/SPA did not include work on issues of invasive species. It was clear that a Mediterranean initiative on the subject was required to assist countries in dealing with the issue. He stressed the need for an action plan on species introduction and invasive species, which could cover such elements as: assistance to countries in inventorying alien species; preparation of information and manuals for identifying species; an alert system for new species; cooperation with and links to relevant international organizations. Within this action plan, the document concerning guidelines for introduction and re-introduction of marine species should be reviewed and improved. In that context, one representative pointed to the need to compile a list of existing studies and resources on the subject, and offered to make available a model questionnaire for the purpose.

116. One representative considered that, by failing to adopt the Secretariat's proposed draft Guidelines for Introduction and Reintroduction of Marine Species in the Mediterranean Sea, the focal points had missed an opportunity to establish procedures and carry out activities to combat species introduction in the Mediterranean. Other environmental conventions already took account of the problem, which had been around for a number of years. He considered

the Secretariat's document to be a good basis for the elaboration of an action plan on introduced and invasive species, and hoped that it could include a list of invasive species, as well as means for the control of existing and potential future invasive species and the avoidance of genetic pollution.

117. Other representatives expressed support for the elaboration of an action plan on introduced and invasive species by RAC/SPA.

118. The Meeting agreed to task RAC/SPA with the preparation of elements of a draft action plan on species introduction and invasive species, to be considered by the focal points at their sixth meeting.

Mediterranean initiative on taxonomy

119. The Coordinator of Working Group 3 reported on its work to address issues of taxonomy in the region and introduced the report of the Group, which also contained the recommendations of participants.

120. The Meeting approved the recommendations of the Working Group on the Mediterranean initiative on taxonomy. The report of Working Group 3, including the recommendations, is contained in Annex XII to the present report.

Agenda item 9 - Programme-Budget of RAC/SPA for 2002-2003

121. The Director of RAC/SPA introduced information document UNEP(DEC)/MED WG.177/Inf.6 on RAC/SPA's programme of activities proposed for the biennium 2002-2003. He expressed sincere thanks to all those who had provided assistance in funding the activities of the Centre in the past biennium and who had pledged support for the coming period.

122. Many representatives congratulated RAC/SPA on the work it had accomplished in the past biennium, and on the way it had successfully accomplished the additional burdens placed upon its members. One representative considered that, in light of its tasks, the Centre would need to be accorded greater human and financial resources. He believed that activities should also be undertaken to place databases on the Internet, and make available GIS data.

123. Another representative wished the activity concerning the new database of cetacean strandings to be included in the list of activities of the Centre.

124. One representative, supported by a number of others, proposed that an action plan be formulated for terrestrial and bird species of the Mediterranean, which would also complement some of the existing activities of other organizations on the subject. An observer from a non-governmental organization, expressing strong support for the initiative, offered the assistance of his organization in the preparation of action plans for one or more the 15 avian species listed in Annex II of the Protocol.

125. The Meeting agreed to task RAC/SPA with the preparation of elements of a draft action plan for the conservation of avian species listed in Annex II to the Protocol.

126. An observer, supported by several representatives, proposed the preparation of an action plan for cartilagenous fish of the Mediterranean, of which a number of species were vulnerable and some were endangered.

127. The Meeting agreed to task RAC/SPA with the preparation of elements of a draft action plan for the conservation of Mediterranean species of cartilagenous fish. It was observed that Italy had already formulated a national action plan for the monitoring and conservation of cartilagenous fish and was willing to make available its experience on the subject.

128. In answer to a query from one representative, the Secretariat confirmed that the training activities under the action plans would be continued in 2002-2003.

129. The Secretariat clarified that several activities were envisaged within the framework of the project proposed for SMAP financing and that, in cases of non-approval of the project, RAC/SPA would strive to find other funding for the activities in question.

130. The Meeting approved the proposed activities of RAC/SPA for the biennium 2002-2003, as contained in document UNEP(DEC)/MED WG.177/Inf.6, as amended by the focal points, for consideration by the Contracting Parties at their twelfth meeting.

Agenda item 10 - Any other matters

Issues of trade in *Lithophaga lithophaga*

131. The representative of Slovenia proposed to the participants of the meeting to consider the problem of protection of the species *Lithophaga lithophaga*, listed in Annex II of the SPA Protocol. He wanted to take advantage of the presence of the other national focal points to have their views on the subject and exchange experience with those facing the same problem.

132. He explained that, although the national legislation prohibited, among other things, the collection (extraction) and trade of the species, those protection measures applied only to specimens inhabiting Slovene waters, and did not put any limitations on import or trade of imported stocks. The latter situation was the cause of serious problems, as far the implementation of the above-mentioned protection measures was concerned. The Secretariat and the participants were asked for comments on the issue and for suggestions on possible solutions.

133. One other representative reported that her country experienced the same problem.

134. Following the discussion, the Meeting requested RAC/SPA to investigate the

matter, also drawing upon advice from environmental legal experts, and to report on the subject to the focal points. In this context, contacts with CITES and Bern Convention should be made.

Proposal to change the name of the Centre

135. One representative, pointing to the increase in the Centre's work in the field of conservation of biological diversity in the Mediterranean, proposed that the title of the Centre be changed to reflect the increase in its mandate and sphere of activities.

136. Another representative, referring to the case of other entities with expanded mandates but no name change, considered that the title and logo of the Centre had already obtained a certain recognition and should be retained.

137. The Meeting requested the Secretariat to further investigate the question of a change in the name and logo of RAC/SPA and report to the focal points.

Agenda item 11 - Adoption of the report of the Meeting

138. The Meeting adopted the present report on its work on Thursday, 26 April 2001, on the basis of the draft report.

Agenda item 12 - Closure of the Meeting

139. After the customary exchange of courtesies, the Meeting was closed on Thursday, 26 April 2001 at 6.10 p.m.

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LISTE DES PARTICIPANTS

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ANNEX II: AGENDA OF THE MEETING

AGENDA OF THE MEETING

Agenda item 1 - Opening of the Meeting

Agenda item 2 - Rules of Procedure

Agenda item 3 - Election of Officers

Agenda item 4 - Adoption of the Agenda and organisation of work

Agenda item 5 - Format for the Reports of the NFP Meetings

Agenda item 6 - Country Reports on Conservation of Natural Sites and Species

Agenda item 7 - Technical aspects related to the drawing up of the List of Specially Protected Areas of Mediterranean Importance (SPAMIs)

Agenda item 8 - Progress and further development of the activities of RAC/SPA

a. New internal organisation of RAC/SPA
b. Action Plan for the Management of the Mediterranean Monk Seal
c. Action Plan for the Conservation of Mediterranean Marine Turtles
d. Action Plan for the Conservation of Cetaceans in the Mediterranean Sea
e. Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea
f. Development of protected areas
g. Training activities developed by RAC/SPA
h. Data Collection (including Inventories and Databases)
i. SAP BIO Project
j. CAMPs
k. Co-ordination with other organisations
l. Other activities

Agenda item 9 - Programme-Budget of RAC/SPA for 2002-2003

Agenda item 10 - Any other matters

Agenda item 11 - Adoption of the Report of the Meeting

Agenda item 12 - Closure of the Meeting

ANNEX III: STATUS OF THE IMPLEMENTATION OF THE SPA PROTOCOL

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National Environmental Agency

INSTITUTIONAL FRAMEWORK

Until 1998, the highest governmental body responsible for the administration of environmental issues in the country was the Committee for the Environmental Protection (CEP), as part of the Ministry of Health and Environment. The inclusion of CEP within the structure of the Ministry of Health was not in conformity with the inter-ministerial nature of its fundamental functions. The National Environmental Agency (NEA), created in 1998 as a high state body depending directly on the Council of Ministers, represents the most important step of institutional strengthening in the process of the consolidation of the governmental structure responsible of the environmental administration. This step was accompanied by other essential steps, which shaped the structure of NEA and determined the internal regulations of the activity of the Agency and its components. These measures gave way to the strengthening of the authority and role of the Agency, and created the conditions for a normal development of its activity.

Beside the creation of the Agency, the government undertook steps for strengthening and extending the environmental bodies within ministries, institutions, and local government structures. By the same token, inter-ministerial bodies are created and function. Their activity has a considerable impact on the environmental protection and management, such as the Councils of Territorial Adjustment that operate at central and local level, the Council of Tourism Development Policies, etc. It is important to emphasize that experts of the National Environmental Agency and the Regional Environmental Agencies are full members of these bodies.

Presently, the National Environmental Agency (NEA) operates as an institution depending on the Council of Ministers, based on their legal framework approved by the Law on Environmental Protection, date 21 January 1993, No 7664 and its amendments, No. 8364:

- **NEA** implements and develops the governmental policy in the field of environmental protection, in order to ensure the sustainable development and improvement of the quality of life.
- **NEA** coordinates controlling functions of the ministries, other central and local institutions, the activity of which relates to environmental protection. In cooperation with these institutions, it organizes and manages the environmental monitoring and undertakes concrete measures for its restoration.
- **NEA** develops the National Environmental Strategy, State of the Environment Reports and National Environmental Action Plan.
- **NEA** develops and approves environmental projects, programs and studies, finds funding and supervises the implementation of their final outputs.
- **NEA** promotes public informing, education and participation in activities aiming at the environmental protection, especially the acquaintance with the environmental situation, development of environmental programs and plans and environmental decision making.
- **NEA** contributes to the adherence of Albania in various international conventions and agreements in the field of environmental protection and natural resources

management, by meeting the obligations deriving from them.

NEA has its own local network, represented by the 12 Regional Environmental Agencies (**REA**s) on prefecture level and extended almost in all country districts. The major responsibilities of these organizations are related with the legislation enforcement, information on the state of environment, controlling and inspection of the activities having an impact on the environment.

LEGAL FRAMEWORK

Although the basic law on environment has existed since 1967, the development of a modern legal system for environmental protection based on democratic principles began only in 1991. This legal system needs to be further developed and refined in the future. There are also a number of laws, which have been approved since 1991, and represent an important advancement in the legislative area:

- Laws on the Land and Its Distribution (no. 7491 and no. 7501, 1991)
- Law on the Forests and the Forest Service Police (no. 7623, 1992)
- Law on Environmental Protection (no. 7664, 1993)
- Law on City Planning (no. 7693, 1993)
- Law on Plant Protection Service (no.7662, 1993)
- Law on Protection of Medicinal and Taniferous Plants (no. 7722, 1993)
- Law on Development of Areas with Tourism Priority (no. 7665, 1993)
- Law on Hunting and Wildlife Protection (no. 7875, 1994)
- Law on Fishing and Aquaculture (no.7908, 1995)
- Law on Pastures and Meadows (no.7917, 1995)
- Law on Water Resources (no. 8093, 1996)

A large number of by-laws and regulations based on these statutes have also been drafted and approved. For example, the draft procedures on Environmental Impact Assessment.

With all the efforts made towards the improvement of the environmental legal system, there are still gaps, especially in the aspects of nature protection, coastal zone, biological and landscape diversity. In addition, the existing legal system is also unclear in some cases due to overlapping responsibilities and sometimes-contradictory language. Some of the reasons for this are: the short time available for preparing the laws, inefficient approval procedures, and the relative lack of attention afforded to environmental problems in Albania. This situation has created confusion with respect to establishing the proper competencies and responsibilities, and, as a consequence, implementation of the law has been weak. The Constitution of the Republic of Albania approved in 1998 provides for further improvement and completion of the legal and institutional framework in the sphere of nature and biodiversity protection.

Although progress has been made, the reality is that the impacts on environment have been exacerbated by poor implementation and ignorance of the law, more than because of gaps in the laws. A solution to the country's environmental problems can not be expected so long as the legally responsible institutions do not co-operate and work together to implement the law. This will require taking concrete actions to work together to prevent and reduce the causes and risks of environmental degradation since co-operation is the most cost-effective solution. The implementation of the CBD and other international environmental conventions is a process that requires Albania to review and improve its existing legal system, and to ensure the implementation of the law. This requires the

approval of the law on protected areas and the protection of nature and biodiversity in Albania; the first is prepared and sent for approval and the second is under preparation.

STATUS OF INTERNATIONAL COOPERATION

The environmental conventions of which Albania is a party are as follows:

- On May 30, 1990, Albania participated by accession to the ***Barcelona Convention "For the Protection of the Mediterranean Sea against Pollution"*** (Barcelona, February 16, 1976).
- On October 4 1991, Albania ratified the ***ESPOO Convention (Finland) "On Environmental Impact Assessment in a Transboundary Context."***
- On March 18, 1992, Albania signed the convention ***"On the Protection and Use of Transboundary Watercourses and International Lakes"*** (Helsinki March 17, 1992). The ratification of the convention was done on January 5, 1994.
- On November 29, 1995, Albania participated by accession to the ***Ramsar Convention*** (Ramsar, 1971). Decision no. 581 on June 29, 1993 of the Council of Ministers approved the accession of Albania to this convention. Albania became a party to this convention through ratification on March 29, 1996.
- On October 31, 1995 Albania signed the Bern Convention (September 19, 1979) ***"For the Protection of Flora and Wildlife Fauna of the Natural Environment in Europe,***" which was ratified by the Parliament on March 2, 1998.
- Convention on ***Climate Change***, on October 3, 1994 Albania signed the basic text of this convention (New York, May 9, 1992). The Council of Ministers approved the accession of Albania to this convention by the decree no. 580 on June 29, 1993].
- Convention ***"On Biological Diversity"*** Albania signed the convention on January 5, 1994 and it entered into force on April 5, 1994].
- The ***Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters*** (Aarhus-Denmark, June 25, 1998); Albania was among the 35 countries, which signed this convention.
- ***The Convention on Protection of Migratory Species of Wildlife*** known also as the Bonn Convention (Bonn, on June 23, 1979. Entry into force on 1983); Albania has approved in the Parliament in October 2000 the accession in this convention and its agreement.

The engagement of Albania in international environmental convention and agreements has been growing; however, implementation and fulfilling the duties specified in those are still lacking in many instances.

IMPLEMENTATION OF NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN

Albania for the first time approved by a Council of Minister Decision in September 2000 the Biodiversity Strategy and Action Plan (BSAP). This document is the first official instrument for the policy makers and for the implementation of the Convention on Biological Diversity obligation. Extension and enforcement of the Protected Areas (PA), as basis for establishing the country's Ecological net (part of the Pan-European Network), is one of the most important goals of this document. The short-term goal is that 14 % of the country's territory be included in different categories of PA's, while the long-term goal (year 2020) aims at including 25 % of the country's territory under this status. In this document are included the proposed protected areas (also marine and coastal) and species for protection with a short and medium action plan. Albania for the moment has not elaborated

any special document for the coastal area and species. On the other hand on 1995 in our country a study for identification and description of the “Special Protected Areas” for the Central Coastal part of Albania has been carried. It offered an interdisciplinary study for the segment of coast covered, the identification of areas of great biological diversity that need protection as well as short listing a number of them that need a special protection status, identification of present and future environmental problems in the area and identification of priority actions for a sustainable long term management of SPA.

Albania had already published the Red Book where a lot of species are included. In this book is clear the distribution of the species, which made easier the identification of Mediterranean species, even endemic or threatened and endangers one.

The MedeWet Coast Project which deal with the management and protection of a part of Albanian coast, include also the Karaburun Pennisula, where the monk seal is reported to have its habitat in our country.

An activity for *Caulerpa taxifolia* identification had been carried on the Albanian coast, but for our luck, no any had been found. In the mean time a lot of awareness activities had followed the research, specially with the fisherman and people that live in the coast. This activity had been supported by GEF Small Grand Program.

A training course for 4 Albanian specialists on inventory of benthic marine habitats, had been organized with the Biology Department of the University of Lecce, supported by RAC/SPA.

There is undergoing coast monitoring activity in the framework of the INTERREG II Program, together with the University of Bari. The results with be published in the near future.

There is

The Coastal Zone Management study was finished in 1996 with the support of the PAP/RAC and World Bank. This document even is a basic one for the administration of the coastal area had not been approved officially by the Council of Minister for inexplicable reasons. Actually NEA is trying again to push this process and we hope now to be more successful.

Albania have not undertaken too much activities related to the implementation of the four Action Plan in spite of several activities carried by different NGOs that had not been informed through the governmental institution. I think there are many reasons for these lack of activities but the most important is that Albania had not yet the necessary legal framework and the capacity for carrying such action.

BOSNIA-HERZEGOVINA

Bunti Ivan
Ministry of Physical Planning and Environmental Protection, Mostar, Hercegovina-Neretva County, B&H

Legal framework governing the conservation of species and sites belonging to Mediterranean climatic and ecological area is limited to Herzegovina-Neretva County. Two main sites of interest for MAP activities are inside this county. The first is short coastal line (24 kilometres only) with Neum bay in municipality of Neum town

The second is Hutovo blato wetlands, as a part of delta Neretva river complex, situated 20 km from the seashore, but possessing all characteristics of Mediterranean wetlands, both ecologically and biologically. The main characteristic of both ecosystems is close relations with adjacent Croatian areas. This means that coastline is situated inside famous Mali Ston Bay, well-known as a shellfish site, and now proclaimed by Croatian authorities as a special reserve. On the B&H coast in Neum, the major activity is tourism and trade. The problem with sewage disposal was solved before twenty years, by building of 50-km long canalisation from Neum to offshore Croatian water near island Mljet. Hence, the water of Mali Ston Bay was preserved for aquaculture, especially shellfish rearing, and today present a first zone (EU regulation). The aquaculture was started inside Neum bay, so two fish farm (300 tons capacity) and smaller extensive mussel rearing existed today.

On the other side, Hutovo blato wetlands present well-preserved and protected site in the wider relations. This means that Park of Nature public enterprise was established in 1995 by decision of former Croatian republic Herzeg-Bosna. Today, Park of nature has 17 employee and is financed by Croatian part of Government of this two-national county. More funds, from federal and country level is needed in order to enhance Park structure. Today, the LIFE project " Development of new management policy in Hutovo blato wetlands, B&ZH", co-financed by EU and County Ministry of Physical Planning and Environmental Protection (Again only Croat part) is under execution in these wetlands.

Bosnia-Herzegovina is a member of MAP from 1994. but did not sign Barcelona convention, neither their protocols. Up today, B&H adopted four protocols signed by former Yugoslavia.

There is no protected marine and coastal species of fauna and flora in Bosnia-Herzegovina. This area is totally under-investigated, so funds have to be raised in order to describe flora and fauna of this marine area, before any step towards protection. The ecological studies about influence of fish farm on sea water quality is also necessary in order to preserve good water quality for tourism and shellfish rearing.

Presently, there is no strategy of national biodiversity, neither action plans considering Mediterranean coastal zone of Bosnia-Herzegovina.

We didn't observe any alien-non-native species in B&H waters, although scientific data don't exist.

List of endemic species: there is no endemic marine species. However, Hutovo blato wetlands are rich in fish and plant endemic species. Some of the interests are:

- dentex trout, *Salmo dentex* (or according to new systematic, but without any scientific data *Salmo trutta dentex*), with specimens above 30 kilos.

- Neretvanian nase, *Chondrostoma kneri*.

Because of the fact that marine area of B&H is practically small bay inside Croatian bay of Mali Ston, under strong influence of Neretva river estuary and closed to offshore waters, it is hardly to believe that monk seal, marine turtles and Cetaceans, should enter these waters. In fact, these animals were never seen in this bay. This means that no need exist to waste many on the implementation of these Action Plans in Bosnia-Herzegovina. Considering, Action Plan for the conservation of Marine vegetation, we need firstly to investigate their presence in B&H waters. To be honest, because of rocky coast and deep waters, we don't think that they are worth of Action Plan. But, this need confirmation with small project describing fauna and flora of B&H waters.

There is no inventory of sites using Standard Data-Entry Form (SDF).

There are no collaborative activities, but will be launched with LIFE project in Hutovo blato wetlands.

REPUBLIC OF CROATIA
MINISTRY OF ENVIRONMENTAL PROTECTION AND PHYSICAL PLANNING
MARINE AND COASTAL PROTECTION UNIT - NATIONAL FOCAL POINT FOR SPA/RAC

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Institutional Framework

Ministry of Environmental Protection and Physical Planning is a governmental authority in charge of managing the Croatian nature, environment and physical planning. Ministry is undertaking administrative and expert duties regarding environmental protection, nature protection and physical planning.
Ministry is structured into 7 divisions and 1 institute: Two divisions that are competent for nature and biodiversity protection are: Nature Conservation Division and Environmental Protection Division. The first one take in charge overall nature and biodiversity protection according to the international conventions and agreements related to the nature and biodiversity protection. Environmental Protection Division and within it Marine and Coastal Protection Unit in Rijeka is in charge among others for protection of marine and coastal environment according the Barcelona Convention and its Protocols as well as for implementation of measures and organisation of activities according to the Adriatic Sea Pollution Contingency Plan, collection and management of data on coastal beach sea quality, preparation of sanitation programme for elimination of pollution of marine and coastal environment, developing of international cooperation etc.

Legal Framework governing conservation of species and sites (main legal instruments)

The Constitution of the Republic of Croatia (OG 8/98) legally defines all components of natural resources as being of interest for the Republic and enjoying its special protection. It also states that people in accordance with Constitution and other laws decide on the preservation and use of natural and cultural heritage

The Declaration on Environmental Protection in the Republic of Croatia (OG 34/92) states the initial terms for establishment of efficient environmental and nature protection in accordance with economic development using the principles of sustainable development.

Law on Environmental Protection (OG 82/94, 128/99) which regulates environment protection in its general provisions, among others states that the basic goal of environmental protection in creating conditions for sustainable development is among other permanent preservation of authentically natural communities, biodiversity and preservation of environmental stability as well as rational use of national resources. On the basis of this law following regulations related to the sea had been developed: By-law on Beach Water Quality Standards (OG 33/96) and Contingency Plan for Accidental Marine Pollution in the Republic of Croatia (OG 8/97).

Law on Nature Protection (NN 30/94, 72/94) – according to this Law, nature protection is implemented by establishing protected parts of nature: national parks, nature parks, strict reserves, special reserve, park-forests, protected landscapes, monuments of nature, monuments of park-architecture and individual plan and animal species.
On the basis of existing Law on Nature Protection the following laws and by-laws have been enacted: laws and decisions on proclamation of protected parts of nature, regulations of inner order in the proclaimed protected areas, rule books on protection of certain plant and animal species, Rule Book on Compensation Fees for Damage Caused by Unlawful Actions on Protected Animal Species (OG 84/96) and Rule Book on Requirements for Conducting Research on Seabed or Its Subsoil in Specially Protected Nature Parts of Internal Sea Waters and Terrestrial Seas of the Republic of Croatia (OG 97/98).
Individual sectoral issues are regulated by other sectoral laws, in particular: **Maritime Code** (OG 17/94, 74/94, 43/96), **Law on Water** (OG 107/95), **Law on Marine Fisheries** (OG 74/94, 57/96, 46/97) and their by-laws.

Status of signature/ratification of relevant international agreements

The Republic of Croatia has accepted the internationally established legal framework for the nature and environmental protection by succession, setting its constitutional determinants accordingly. Conclusion and Enforcement of International Treaties of 1991, in particular to the Resolution on Enforcing Multilateral International Treaties, the Republic of Croatia has become a Party to numerous international treaties, through ratification, or notification of succession (Table 1)

Table 1- **Status of signature and ratification on international legal instruments**

International legal instruments	**Signed**	**Ratified**
Convention on Biological Diversity (CBD)	+	+ (1996)

Convention on Wetlands of International Importance Especially as Waterfowl habitat (Ramsar Convention)	+	taken by succession 1993
Convention Concerning the Protection of the World Cultural and Natural Heritage	+	taken by succession 1993
Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES)	+	+ (1999)
Convention on the conservation of European wildlife and natural habitats	+	+ 2000
Convention on the Conservation of Migratory Species of wild Animals Agreement on the conservation of cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (ACCOBAMS) Agreement on the conservation of bats in Europe (EUROBATS) Agreement on the conservation of Africal-Euroasian migratory waterbirds (AEWA)	+ + + +	+ 2000 2000 2000 2000

The principal activities in the Adriatic aimed at environmental protection with international co-operation are implemented within the UNEP-MAP and its centres, all within the Barcelona Convention for the Protection of the Mediterranean Sea against Pollution (1976,1996) and the related Protocols (Table 2)

Table 2 **– Status of signature and ratification of Barcelona Convention and its Protocols**

Convention for the Protection of Mediterranean Sea against Pollution (Barcelona Convention) - Amendments to the Barcelona convention	+ +	taken by succession 1993 1998
The Protocol for the Prevention of Pollution of Mediterranean Sea by Dumping from Ships and Aircrafts (Dumping Protocol) - Amendments to the Dumping Protocol	+ +	taken by succession 1993 1998
The Protocol Concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency (Emergency Protocol)	+	taken by succession 1993
The Protocol for the Protection of the Mediterranean Sea against Land-based Sources and Activities (LBA Protocol) - Amendments to the LBA Protocol	+ +	taken by succession 1993 -
The Protocol Concerning Specially Protected Areas and Biological Diversity in Mediterranean (SPA Protocol) Protocol concerning Specially Protected Areas and Biological Diversity (SPA Protocol) – replacing previous one	+ +	taken by succession 1993 in preparation for ratification
The Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration of the Continental Shelf and the Seabed and its Subsoil (Offshore Protocol)	+	in preparation for ratification
The Protocol in the Prevention of the Pollution of the Mediterranean Sea Resulting from the Transboundary Movement of hazardous Wastes and their Disposal	-	-

Marine and coastal protected areas (new development 1999, 2000, 2001)

Today around 9,9 % of land territory and 0,91% of aquatorium area is under protection in the Republic of Croatia. Most of the protected area (8,7%) is related to the national (8) and nature parks (10) which are under state authority while the other categories of protected area are under counties authority. Out of 8 national parks 5 are situated partly or completely in marine and coastal area, so as 5 of 10 nature parks.
In the period of 1999-2001 protected area in Croatia has been enlarged for one national park “North Velebit” and four

nature parks: U ka, Papuk, umberak and Samoborje Hills and Vransko Lake. Two of them (U ka and Vransko Lake) are situated in the coastal area.
There are also prepared draft proposals for 2 new national parks (1 of them in the coastal area) and 8 nature parks (3 in marine and coastal area).

Protected marine and coastal species of fauna and flora

Some of the species of flora and fauna are protected either completely or by regulation of their collection for purposes of preparation and trade. Groups of protected species are listed in the Table 3.

Table 3 **– Protected species**

Group	**Remark**	**Protected**
Mammals	the majority of indigenous species excepting "problematic" and hunting species, + all other Cetaceans (X)	61+X
Birds	all Croatia's breeding birds and all other European species (X) excepting hunting species, cormorant on fishponds and starling on agricultural land	283+X
Reptiles	all indigenous species excepting nose-horned viper and common adder	34
Amphibians	all indigenous species (three species of edible frog protected by ban on commercial gathering)	17+3
Invertebrates	forest ant, six butterfly species, three species of marine shellfish, all sea cucumbers (36 species)-protection through ban on gathering, 120 species of mainland snails (+ 4 species of genus Helix protected through regulation of gathering), leech *Hirudinidae* (2 species), crayfish *Astacidae* (3 species)	136+40
Threatened fungi		130
Economically important fungi	protected through regulation of gathering	29
Higher plants		44
Total		**777+X**

While preparing the National Strategy and Action Plans of Biological and Landscape Diversity (OG 81/99), a great number of new data on species and their threats were collected. On the basis of these information the inventory of protected species is currently undergoing the revision.
The legislative protection of taxa is only a precondition for a practical protection based on the protection of habitats and on special action plans. This segment of protection in Croatia is in the beginning. The tradition of giving priority to the protection of areas in relation to protection of taxa, a constant shortage of funds destined for protection of nature, a small number of scientists and professionally managed NGOs are some of the reasons for such s state. Taking into consideration the importance of Croatia for numerous species threatened on the European or global scale, it is to expect a substantial international financial involvement into implementation of action plans related to these taxa.

Implementation of National Biodiversity Strategy and Actions Plans with regard to the Mediterranean coastal zone

In accordance with obligations from CBD, Croatian Government, by its Decision in 1997, tasked the government body responsible for the protection of nature with the development of the National Strategy and Action Plans for the Protection of Biological and Landscape Diversity (NSAP). Development of the NSAP was divided into two sections. The first one relates to making an inventory of biological and landscape diversity of Croatia.
The results of inventorying were used for the development of the strategy and action plans which draft was harmonised and presented for endorsement to Croatian Parliament which adopted it in June 1999. Therefore, the NSAP is the first document by which the Republic of Croatia is trying to chart systematically and to plan comprehensively the nature protection activities.
Although the process of inventarisation of species and habitats pointed out insufficient or no data, knowledge and expertise, for some groups of species, strategic and special action plans are defined in order to improve the state of protection and management of biodiversity resources.
Unfortunately, because of lack of institutional capacity and financial means, development and implementation of envisaged action plans is limited and slow. Out of all priority action plans following are being elaborated:

-Habitat mapping (using CORINE classification)
-Inventarisation of wet habitats in Croatia (using methodology of MedWet in the framework of Ramsar Convention)
-Preparation of the Red Book of vascular flora
-Preparation of the Read Book of fresh water fish
-Preparation of Red Books of butterflies, amphibians and reptiles, mammals and underground fauna

Beside that, *Atlas of endemic flora in Croatia* is in preparation.

Observations/studies about alien species recorded in the Mediterranean coastal zone

There are many negative observations about alien species from the past (for example the introduction of Canadian-pondweed, lacust, amorpha etc), but the most recent case is the spreading of aggressive species of alga *Caulerpa taxifolia* in two locations in the Adriatic. According to the recommendations of Heraclion Workshop on invasive Caulerpa species in the Mediterranean (March 1998),

- There is permanent cooperation between oceanographic institutes in country with other Mediterranean institutions on the problems related to the invasive *Caulerpa* species.
- There is also permanent cooperation between oceanographic institutes in country with relevant governmental bodies, local governmental authorities, NGOs with aim of monitoring *Caulerpa* species as well as establishing the programs of alga spreading control.
- Existing problem is presented on many seminars, brochures are published disseminated on 2000 addresses (schools, scuba divers clubs, sports and fishing clubs, dive centres, marinas, harbour masters offices etc.) calling sea users to indicate the presence of Caulerpa and take all necessary precautionary measures to avoid its spreading,
- Every year annual cartographic surveys and monitoring of *Caulerpa taxifolia* colonies are being conducted on determinate geographical locations and it has been conducted researching of algae biology and ecology.

List of country and/or Mediterranean endemic species

According to the National Biodiversity Strategy, in Croatia there are 1358 endemic taxa (species and subspecies):

- 439 endemic Plants (algae, mosses, spermatophytes) - *Atlas of endemic flora in Croatia* is in preparation
- 82 endemic Lichens
- 108 endemic Vertebrates
- 730 endemic Invertebrates

Complete list of endemic species is not yet available.

Activities undertaken in the framework of implementation of:

1. Action Plan for the Management of the Mediterranean Monk Seal

National Biodiversity Strategy and Action Plans envisage the Action plan for the protection and reintroduction of the Mediterranean monk seal (*Monachus monachus*) (as priority action plan) as well as Action plan on mapping and protection of submarine caves (short term action plan) as a potential seal habitat. So far action plans haven't been elaborated and implemented.

2. Action Plan for the Conservation of Mediterranean Marine Turtles

Since 1993 Croatian Natural History Museum as a leading institution (CNHM) has been implementing the *Adriatic Marine Turtle Research and Conservation Programme* while the NGO "Natura" has organised and implemented awareness and educational programmes of the same Project.
Undertaken activities within the Project for the period 1998-2001 are following:
Scientific research and monitoring – research activities were oriented on movements and origin of the loggerhead sea turtle in the Adriatic Sea and character migrations, and identification of marine critical habitats in the eastern Adriatic as an important migration corridor for the population nesting of Zakynthos and Peloponnesus Island. In regard to data on loggerhead's feeding biology in the eastern Adriatic it is likely that the region contains critical habitats for the species within Mediterranean basin, and that the movements into the Adriatic may be characterised as development and feeding migrations. The results defined the Adriatic Sea as management unit with respect to the Greek nesting stock.
Protection and management – Due to the research results of the Project, loggerhead sea turtle is listed as priority species within the National strategy for Biodiversity. Still there is no specially protected area regarding marine turtles in Croatia, neither is established bottom trawling restriction in the northern Croatian waters throughout the winter season, or strengthened legal protection of sandy habitats of Saplunara and Blace Bay on the Island of Mljet, as it was recommended in the Annex of the revised Action Plan.
Public awareness, information and education – public awareness have been carried out within the project of NGO "Natura" and the Governmental office for NGOs. "Dolphins and Marine Turtles: throughout monitoring and education toward sustainable management of marine environment". The Project comprised a production of awareness materials and education of fisherman, as well as a creation of the centralised scientific database on marine turtles in the eastern Adriatic. Information and education campaign included rather numerous articles in newspapers and magazines, as well as several TV reportage on the Project activities and releasing of tagged turtles. Regarding the training activities, two Croatian biologists have participated in the training course at Lara Beach (Cyprus) in 1999. (Complete national report prepared by Project coordinator Bojan Lazar is enclosed to this Report)

3. Action Plan for the Conservation of Cetaceans in the Mediterranean Sea

Within the National Biodiversity Strategy and Action Plan there are action plans related to the dolphins (Determining the dolphin population size and trends and its protection –a pilot marine park, and Establishment of zoological marine reserve for dolphins) but their elaboration and implementation is not yet systematically undertaken and depend on the availability of financial resources.

Nevertheless, since 1987 Thetys Research Institute from Italy has studied a population of bottlenose dolphin in the Northern Adriatic (Tursiops truncatus) in cooperation with Croatian Natural History Museum (CNHM). With the photo-identification as primary technique there was investigated: distribution, abundance, habitat use, population dynamic and trends, structure of community, behavioural ecology of the bottlenose dolphin. Concerning the other parts of Croatian territorial water, information on species are obtained only through recorded stranded animals and individual sighting reports by people. Through the established information network the data were gathered on yearly appearances of possibly strayed wheals from the Mediterranean Sea. Beside CNHM, there have been attempt by Veterinary Faculty form Zagreb to implement other research and to assess the number of dolphins as well as to collect information on stranding and dolphin carcasses.
Unfortunately efficient national stranding network in Croatian still does not exist despite the attempt of establishing it and in line with that, initiation of e Adriatic Dolphin Project in 1997 by CNHM. The Project was elaborated in order to develop public concern for the welfare of *Cetaceans* and to maximise inflow of the scientific information, included various actors, but due to the lack of support and funding its implementation almost entirely stopped. Depending only on the enthusiasm of the people involved, occasional reports were still forwarded to the CNHM.
Recently, implementation of the Adriatic Dolphin Project was undertaken by NGO "Blue World" in coordination with the CNHM using initial equipment support from the Thetys Research Institute. Project is planning to:

- continue with data collection on dolphins using in great deal help of the fisherman and local population
- continue with the promotion of awareness campaign and initiative of proclamation of the Lošinj aquatorium a marine park
- set the permanent educational exhibition

10 national and international experts are currently working on the Project. New ways of Project financing (using financial help form local authorities, sponsors, project participants etc) will hopefully help in its implementation.

4. Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea

According to the Biodiversity strategy and action plans there are several action plans concerning research, cartography, monitoring and protection of the sea vegetation, but still there is no systematic elaboration and implementation of them.
Nevertheless, research on marine vegetation has been independently implemented by scientific institutions for almost 30 years. The bentic vegetation was well investigated in the area around coastal cities and some islands. However it is still insufficiently investigated in the northern part of Adriatic, specially around the outer islands.
According to the research results*, Posidonia oceanica* meadows cover a great deal of a sea bottom, while the meadows of the other seagrass are not developed as well as *Posidonia*. Detailed mapping and cartography of the seagrass meadows was started recently while the check-lists of sea vegetation are being working on longer.
The community of the algae and the seagrass meadows are today locally threatened due to: pollution and the impact of the coastal infrastructures mostly in the towns area (Pula, Rijeka, Zadar, Šibenik, Slit) or in the bays (Rijeka Bay, Kaštela Bay), filling-in of sea covering more than a 1000 ha of the coastal area, building of harbours and marinas and mariculture activities. Different settlements of genus Cystoseira and species *Fucus virsoides*, seagrass meadows of *P. oceanica* and *Zostera marina* are the most endangered. The greatest parts, specially around the islands is still preserved in the natural stage. Even though, by the protection of the specific areas with highest biodiversity in the category of national parks or marine reserves, the most interesting areas of marine vegetation are also protect from the possible degradation.

Activities related to the inventories (completed or ongoing) of sites using the Standard Data-Entry Form (SDF) for national inventories of natural sites of conservation interest

So far SDF has not been used in establishing national inventory of natural sites of conservation interest. As a start, we intend to include SDF in Information system of environmental protection as well as to implement SDF in future project related to nature protection in the coastal and marine areas.

Collaborative activities undertaken within the framework of the implementation of the Protocol and/or the Action Plans, especially at bilateral or sub-regional levels

From 1999 in Croatia have been undertaken more actions within the framework of the implementation of the Protocol and Action Plans. On the RAC-SPA initiative, a Mission in Croatia was organised with aim to find out about legal and institutional framework of environmental protection in country as well as to see some of marine coastal protection areas and implementation of regulations within them. This Mission resulted with RAC-SPA Report on the Mission, and ongoing project *"Evaluation of protection efficiency of marine habitats in National Park Mljet and guidelines for improving conservation"* aiming to efficiently protect nature in National Park Mljet situated in the southern part of the Adriatic Sea. The Project is sponsored by the RAC/SPA and Principality of Monaco. Also on the basis this very fruitful cooperation several nature protection projects are in preparation in the northern part of the Adriatic in collaboration with the Principality of Monaco.

Country Report – Cyprus
Fifth Meeting of National Focal Points for SPA
(Valencia, 23-26 April 2001)

***Country*:** CYPRUS

Author: Myroula Hadjichristophorou, Fisheries Officer,
Ministry of Agriculture Natural Resources and Environment.

Brief description of institutional framework: The Department of Fisheries and Marine Research is responsible for marine biodiversity and for coastal biodiversity of marine/aquatic origin. It is responsible also for habitat protection in the sea and on the coast in relation to species of marine/aquatic origin. The Forestry Department is related to coastal forest areas and the Town and Country Planning Department for land use issues. The Environment Service coordinates activities and issues and acts as the secretariat for the Environment Committee on which sit all Ministries and Departments involved in Environmental issues. A Technical Committee has also been set up to deal with technical/scientific issues.

***Brief description of legal framework covering the conservation of species and sites*:**

Cyprus ratified the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1974, the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) in 1988, the Convention on Biological Diversity in 1996 and the Ramsar Convention was ratified in 2001. It has also ratified the Barcelona Convention and the SPA protocol. The new Specially Protected Areas and Biological Diversity in the Mediterranean Protocol has been signed by Cyprus and is now in the process of ratification. The Convention on Migratory Species (CMS) was ratified in 2000.

Environmental Impact Assessment (E.I.A.) for a variety of projects has been applied since 1991 after a decision of the Council of Ministers. A new law on E.I.A., in line with the EU Directive (85/337), is recently approved by the House of Representatives.

The Fisheries Law and Regulations cover the protection of aquatic biota, including habitats and species in salt lakes and freshwaters. It provides for tha protection of turtles, dolphins, seals and Ghost crabs. Important habitats, such as *Posidonia oceanica* meadows are protected by banning trawling in waters shallower than 55m. The management measures for the Lara/Toxeftra coastal/marine turtle reserve, which includes the nesting habitats of sea turtles, are spelled out in the Fisheries Law and Regulations. The Forest Law and the Game law cover terrestrial flora in forest areas and game issues. The Town and Country Planning law is also instrumental in land use and spatial planning issues.

Marine and coastal protected areas (new developments 1999, 2000, 2001):

- **Lara-Toxeftra marine/coastal turtle reserve:**
A turtle conservation project aiming at the protection and conservation of marine turtles (Green and Loggerhead turtles), their eggs and hatchlings as well as their habitats was initiated in 1978 and has successfully been implemented since then. The implementation

of the management measures of 1989 (Fisheries Regulations 273/90) also continued in the last few years.
- Wetlands: Larnaca Salt Lakes. A management plan was approved by the Council of Ministers, for these lakes, in 1997, through which the lakes and the surrounding area are declared into a protected area. The plan is now being implemented. The main Larnaca Lake and environs is now being proposed as Cyprus' first Ramsar site.
The management plan of the other wetland site **(Akrotiri wetlands)** is being elaborated.

A LIFE project entitled "Special Areas of Conservation (Directive 92/43/EEC) in Cyprus", coordinated by the Ministry of Agriculture, Natural Resources and Environment and the University of Athens is now nearing completion. Its main objective is to provide the information needed for the implementation of the European Union (EU) Directive 92/43/EEC in Cyprus, that is the creation of a network of conservation areas eligible to be included in the NATURA 2000 network of Special Areas of Conservation. In the framework of this project, an inventory of coastal/marine habitats and of aquatic species of flora and fauna has been drawn up. A number of coastal/marine areas fulfilling the criteria of this Directive have been included in the national list of sites to be proposed for inclusion in the NATURA 2000 network.

Protected marine and coastal species of fauna and flora: Aquatic turtles (marine and freshwater), seals, all dolphins and the Ghost crab, *Ocypode cursor* are protected.

***Implementation of national biodiversity strategy and actions with regard to the Mediterranean coastal zone*:**

Observation/studies about alien species recorded in the Mediterranean coastal zone: Under study – publications planned.

List of country and/or Mediterranean endemic species (if available for the country): Within the EU NATURA 2000 project, a national archive of ecological data of Cyprus, BIOCYPRUS, will be produced which will include an inventory of fauna and flora and habitats as well as their mapping.

Activities undertaken in the framework of the implementation of*:*

a. ***Action Plan (AP) for the Management of the Mediterranean Monk seal***: There is ongoing activity related to Monk seal habitat protection within the wider Akamas Peninsula conservation proposal, which is currently being deliberated by Government.

b. ***AP for the Conservation of the Mediterranean Marine Turtles***: Ongoing conservation work on turtles continued it included: management of Lara/Toxeftra protected area and also protection of nests and hatchlings on the Polis/Limni loggerhead nesting beaches; operation of a hatchery for rescued nests from tourist beaches; training courses for Mediterranean scientists/managers of protected areas continued being held at Lara/Toxeftra Reserve, in cooperation with Cyprus Wildlife Society. Public awareness issues are pursued through an information center at Lara, documentaries for TV etc

c. ***AP for the Conservation of Cetaceans in the Mediterranean***: No special activities were undertaken. All dolphin species are protected under the Fisheries Law. This is enforced by the Department of Fisheries and Marine Research. Compensation for damages to nets by dolphins, amounting to about $500,000 was paid to fishermen in 2001.

d. ***AP for the Conservation of Marine Vegetation in the Mediterranean Sea*:** *Posidonia* meadows are protected through banning, under the Fisheries Law, trawling in shallow waters (less than 55m).

Actions related to the inventories (completed or ongoing) of sites using the standard Data-Entry Form (SDF) for national inventories of natural sites of conservation interest:
See text under “Marine and coastal protected areas”

Collaborative activities undertaken within the framework of the implementation of the Protocol and/or the Action Plans, especially at bilateral or sub-regional levels: -

COUNTRY REPORT – EGYPT

Country : Egypt
Author of the report : Dr. Esam ELBADRY – Nature Protection Department – Egyptian Environmental Affairs Agency
Ministry of State for Environmental Affairs

Brief description of the legal framexork governing the conservation of species and sites:

The two protected areas lake Burulus (Kafr El sheikh Covernorate and Zarouit (Lake Bardawil) North **governorates are declared as protected areas according to decrees issued by prime Ministerian Decreasand documented with attached Maps. The two protected areas were established according to the low 102 for Protected Areas /1983.

Status of signature/ratification of the relevant international agreements:

Both Barcelona Convention and Protocol concerning specially Protected Areas and Biological Diversity in the Mediterranean were ratified by the People's Assembkly of Egypt. The first was in 1997 and the second on April 2001.

Marine and Coastal Protected Areas (new development 1999-2001).

Protected Marine and coastal species of fauna and flora

Field studies (site diagnosis studies) were conducted during the period June 2000 until February 2001 on the phytoecology and Fauna of both Burulus and Bardawil special protected areas including : mammals, birds, reptiles and amphibias, invertebrates including insects, spiders and molluses.

The study included also socio-economics of the areas, and land use plans for different sites.

Implementation of national biodiversity strategy and action plans with regard to the Mediterranean coastal zone:

The egyptian study on national strategy and action plan fot the conservation of biological diversity listed a number of projects to be implemeted, the top priority is the conservation of mediterranean coastal zone (wetlands). Egypt is participating at present in Med Wet Project for the conservation of three sites on the Mediterranean. Egypt contribute with 2.3 million USDollars in this project.

The project has been considered within the five year plan of the Ministry of Planing.

By year 2005 I hope that we have three Med Wet sites with management plans ans monitoring plans for testing the management plans, plus the appointment of well trained area manager and 5 managers for each site.

Observation studies about ****species recorded in the Mediterranean coastal zone

There is a publication by Prof. Anwar Abdel Aleem on algea of Alexandria region of the Mediterranean including more information on this subject.

List of country and / or Mediterranean endemic species

These are listed in the project document of the Med Wet Project, and available to the provided.

Activities undertaken in the framework of the implementation of:

a) Action plan for the management of the Mediterranean Monk Seal: None. No specialists are available.
b) Action plan for the conservation of Mediterranean Marine turtles
   An action plan was formulated in connection to an Darwin inistiative project between Dept. of Nature Conservation, University of Swez Cnanl in Arish and University of London. Several rangers attended training programms on Marine turtles in Greece, Cyprus and others.

   Several points were designated on the Med Coast to ***to activities of Marine.

c) Action plan for the conservation of Cetaceans in the Mediterranean Sea: None. No specialists are available.
d) Action plan for the conservation of Marine vegetation in the Mediterranean Sea : None. Three are several experts found in the subject, but funds are not available.

Activities related to the inventories (completed or ongoing) of sites using the standard date-entry form (SDF) for national inventoris of natural sites of conservation interest.

Complete inventories are being prepared within the activity of the National Biodiversity Unit on all protected areas through the CNM Plan including special protected areas. Also Med Wet data sheets are prepared for the interest of the Med Wet project, using special formats.

Collaborative activities undertaken within the framework of the implentation of the protocol and/or the Action Plans, especially at bilateral or sub-regional levels

Egypt is participating in a regional Med Wet Project including other five Mediterranean countries for five years 2000 – 2005.

INFORMATIONS RELEVANT DU « RAPPORT DU PAYS »
EUROPEAN COMMISSION

Cadre juridique régissant la conservation d'espèces et de sites[1].

- DIRECTIVE 79/409/CE du Conseil 2 Avril 1979 concernant la Conservation des Oiseaux sauvages (directive Oiseaux).

- DIRECTIVE 92/43/CEE du Conseil du 21 Mai concernant la conservation des habitats ainsi que de la faune et de la flore sauvages (directives Habitat).

Signature /ratification des accords internationaux pertinents.

- Bonn Convention, Berne, RAMSAR, Biodiversité
- ACCOBAMS, acte final signée en 1996.

Aires protégées marines et côtières.

La directive Habitat oblige les Etats membres de l'Union Européenne à proposer des sites pour la protection d'habitats ou d'habitats d'espèces d'intérêt communautaire. Ces sites constitueront à terme le réseau écologique Nature 2000.

La procédure de sélection et proposition de sites est définie par la directive elle-même. Aux effets d'analyser les propositions de sites à protéger, le territoire européen est divisé dans plusieurs « régions biogéographiques », dont la région méditerranéenne.

La liste des sites pour cette région n'est pas encore adoptée. Jusqu'à présent, le nombre de sites proposés à l'intérieur de la dite région contenant des habitats « marins ou côtiers », ainsi définis par l'annexe I de la directive est d'environ 800.

Espèces marines de faune et de flore

Les espèces marines de flore et faune (excluant les oiseaux) protégées par la directive habitats figurent dans ses annexes. En revanche, toutes les espèces d'oiseaux qui occurrent dans la nature doivent être protégées dans les termes de la directive Oiseaux.

Observation/études sur les espèces introduites dans le côtier méditerranéen[2]

La Commission Européenne a soutenu deux projets visant l'espèce *Caulerpa taxifolia* dans la Méditerranée. Le premier a servi à connaître l'évolution du fléau ainsi que pour établir les bases scientifiques et techniques pour son éradication (1992-1995). Le deuxième a visé la démonstration d'une stratégie pour contrôler la dissémination de cette espèce ainsi que pour expérimenter techniques d'éradication (1996-1999).

Leurs résultats constituent une source d'information fiable sur ce problème.

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[1] http://europa.eu.int/comm/environnement/nature/legis.htm

[2] Une étude globale très bonne sur l'état de l'environnement à la Méditerranée a été préparée par l'Agence Européenne de l'Environnement en collaboration avec l'UNEP. Vous trouverez la version pdf à : http://reports.eea.eu.int/ENVSERIES05/en

Conservation des Cétacés

Toutes les espèces de cétacés sont strictement protégées par la directive Habitats. Outre ceci, il est possible de proposer des sites visant la conservation du grand dauphin (*Tursiops truncatus*) et du marsouin (*Phocoena Phocoena*).

La Commission Européenne a reçu environ 50 propositions de sites dont la contribution à la conservation du grand dauphin est qualifiées au moins de « significative » (dans les termes de la Décision de la Commission 97/266/CE du 18 Décembre 1996, sur le format d'information pour les sites Natura 2000). En ce qui concerne le marsouin, il n'a été reçu qu'une proposition.

Conservation des tortues marines en Méditerranée.

Plusieurs projets LIFE, soutenus financièrement par la Communauté, ont visé l'espèce *Caretta caretta*, qui d'ailleurs, doit faire l'objet de mesures nationales de protection stricte en accord avec la directive Habitats. Ainsi, un projet sur l'implémentation de plans de gestion pour cette espèce dans la baie du sud de Kyparissia (Grèce) a commencé en 1998 et continue son cours. Les mesures urgentes de conservation pour la dite espèce dans les îles Lampedusa et Linosa (Italie), a été retenu en 1999.

Conservation du Phoque Moine

L'espèce est soumise à des mesures nationales strictes, y incluse la création de parcs marins.

La Commission Européenne a reçu environ 40 propositions de sites dont la contribution à la conservation de l'espèce est qualifiée au moins de « significative » (dans les termes de la Décision de la Commission mentionnée ci-dessus).

Egalement plusieurs projets dans le cadre du programme LIFE ont visé cette espèce par exemple, en GR un projet a été terminé en fin 1999. De plus, la DGENV a financé en 1998 la mise en réseau (échange d'expériences et de visites) de différents projets LIFE visant la conservation de l'espèce en PT, ES, GR.

La conservation d'espèces et habitats marins fait l'objet de projets LIFE assez fréquemment. Dans l'avenir, ce soutien sera normalement maintenu.

AVANCEMENTS RECENTS

- La commission Européenne est consciente que la protection de la biodiversité marine a besoin d'une stratégie intégrée pour faire face à la dégradation du milieu marin. Le développement d'une telle stratégie est une priorité pour l'avenir[3]. De même, la communication de la Commission sur l'aménagement intégré des zones côtières avait déjà prôné des approches plus large sur le sujet marin[4].

- En ce qui concerne la mise en œuvre des instruments existants, l'application effective de la directive Habitats en milieu marin (notamment le réseau Natura 2000), est aussi considérée une priorité.

- La réforme de la politique de pêche Commune devrait être mise à profit pour une meilleure intégration des sujets environnementaux[5]. Bien sûr, cette nouvelle politique sera d'application dans la Méditerranée. Les relations entre la pêche et la conservation de la nature en milieu marin avaient déjà été traitées à la Communication concernant la gestion halieutique et la conservation de la nature dans le milieu marin[6].

- Une communication contenant la proposition de la Commission la stratégie pour l'intégration des réquisits de protection environnementale à la politique de la pêche a été aussi adoptée récemment [7].

- Il est aussi tout à fait nécessaire de mentionner le plan d'action pour la biodiversité dans le secteur de la pêche adopté par la Commission Européenne[8].

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[3] Communication de la Commission relative au sixième programme d'action communautaire en faveur de l'environnement, COM (2001) 31, 24.1.01

[4] COM (2000) 547, 4.10.00

[5] le livre vert présentant les propositions de la Commission peut être obtenu à : http://europa.eu.int/comm/fisheries/greenpaper/green1_fr.htm

[6] COM (1999) 363, 14.7.99

[7] COM (2001) 143, 16.3.01

[8] Communication de la Commission relative aux plans d'action en faveur de la diversité biologique dans le domaine de la protection des ressources naturelles, de l'agriculture, de la pêche et de l'aide au développement et de la coopération économique, COM (2001) 162, 27.3.01.

MINISTERE DE
L'AMENAGEMENT DU TERRITOIRE
ET DE L'ENVIRONNEMENT

DIRECTION DE LA NATURE ET DES PAYSAGES
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Rapnat04001

PARIS, le 09 avril 2001

RAPPORT DE LA FRANCE SUR LES ACTIONS MENEES POUR LA CONSERVATION DES SITES ET DES ESPECES

1- CADRE INSTITUTIONNEL

Le vote des lois ainsi que la ratification des traités et accords internationaux sont assurés en France par un parlement composé de deux chambres: l'Assemblée nationale et le Sénat.

La protection de la nature et des paysages relève du ministère de l'aménagement du territoire et de l'environnement.

En son sein c'est la direction de la nature et des paysages qui assume notamment les attributions en matière de conservation et de réhabilitation du patrimoine naturel, des sites, des paysages, des milieux et de la diversité biologique (faune et flore sauvages et écosystèmes).

2- CADRE JURIDIQUE REGISSANT LA CONSERVATION DES ESPECES ET DES SITES

La loi du 2 mai 1930 permet de protéger par inscription ou classement les monuments naturels et les sites de caractère artistique, historique, scientifique, légendaire ou pittoresque.

Le premier texte de base est la loi du 10 juillet 1976 qui affirme que la protection des espaces naturels et des paysages, la préservation des espèces animales et végétales, le maintien des équilibres biologiques et la protection des ressources naturelles contre toutes les causes de dégradation sont d'intérêt général.

La loi du 3 janvier 1986 traite de l'aménagement, de la protection et de la mise en valeur du littoral.

La loi du 3 janvier 1992 sur l'eau vise, quant à elle, à préserver les écosystèmes aquatiques, les sites et les zones humides.

La loi sur la protection et la mise en valeur des paysages de 1993.

Une loi du 2 février 1995 est venue renforcer la protection de l'environnement notamment en organisant la transcription des directives communautaires Oiseaux et Habitats.

La loi d'orientation pour l'aménagement et le développement du territoire du 4 février 1995, a introduit la notion de directive territoriale d'aménagement qui permet notamment de fixer les principaux objectifs de l'Etat en matière de préservation des espaces naturels, des sites et des paysages.

On peut citer trois autres lois importantes: la loi du 27 juillet 1960, qui a établi le cadre légal pour la création des Parcs nationaux, celle du 10 juillet 1975 qui a créé le conservatoire de l'espace littoral et des rivages lacustres pour développer une politique de sauvegarde des habitats naturels côtiers et celle du 3 janvier 1986 sur la conservation et l'évolution du littoral et la loi "Montagne" de 1985.

3- RATIFICATION DES ACCORDS INTERNATIONAUX PERTINENTS

La France est partie à la plupart des conventions internationales: Barcelone (pour la protection de la mer Méditerranée contre la pollution et les 3 protocoles qui s'y rattachent), Ramsar (zones humides), Bonn (conservation des espèces migratrices appartenant à la faune sauvage), Berne (conservation de la vie sauvage et des milieux naturels de l'Europe), Rio (diversité biologique).

Le protocole relatif aux aires spécialement protégées de la Méditerranée et à la diversité biologique n'est pas encore ratifié mais le dossier est en cours.

Par ailleurs, la France a transcrit dans son droit interne les directives Oiseaux , Habitats, faune, flore et a adopté l'accord sur les cétacés.

Elle est aussi partie à la convention "Patrimoine mondial" de l'UNESCO.

4- LES AIRES PROTEGEES MARINES ET COTIERES (NOUVEAU DEVELOPPEMENT 1999, 2000, 2001)

Le littoral français s'étend sur environ 1700 Km de côte en Méditerranée. 123 aires protégées ont été inscrites à ce jour, qui ont été retenues selon différents niveaux de critères biologiques et esthétiques. 110 d'entre elles appartiennent aux espaces du Conservatoire de l'espace littoral et des rivages lacustres, 11 à des réserves naturelles, 1 à un parc national et la dernière à un parc naturel régional.

Les règlements qui s'y appliquent varient suivant leur appartenance.

Deux aires protégées sont en cours de finalisation:

- Le Parc Marin International des Bouches de Bonifacio, avec l'Italie; ce programme est soutenu par l'Union européenne,
- Le Sanctuaire pour la Conservation des Mammifères Marins; ce projet intéresse l'Italie, la principauté de Monaco et la France et

La nouveauté dans le domaine provient des expériences en cours en matière de directives territoriales d'aménagement. Depuis 1998, 5 directives sont expérimentées soit à l'embouchure de fleuves, Seine et Loire, soit dans des secteurs fortement urbanisés comme l'aire métropolitaine marseillaise, les Alpes maritimes (Nice), l'agglomération lyonnaise, soit encore dans des régions à risques, comme les Alpes du nord.

En plus des orientations fondamentales et des principaux objectifs de l'Etat en matière d'aménagement, des grandes infrastructures de transports, de la localisation des grands équipements, elles visent à garantir la préservation des espaces naturels , des sites et des paysages. Elles permettent notamment de veiller au respect des dispositions de la loi littoral dans ces secteurs sensibles où l'urbanisation représente un danger pour la préservation des espaces et des espèces.

5- LES ESPECES MARINES PROTEGEES DE FAUNE ET DE FLORE

Les textes législatifs sur la protection de la faune et de la flore sont compilés dans un document annexé au présent rapport. On peut citer quelques exemples d'espèces protégées sur tout le territoire et en tous temps.

Dans le domaine de la faune,

- Mollusques **gastéropodes** (*patella ferruginea*, patelle géante), de **bivalves** *(Pinna nobilis*, grande nacre, jambonneau hérissé), (*Pinna pernula*, jambonneau rude), (*Lithophaga lithophaga*, datte de mer),
- Crustacés (*Scyllarides latus*, grande cigale de mer),
- Echinodermes oursins (*Centrostephanus longispinus*, oursin diadème, oursin à longs piquants).

Dans le domaine de la flore, les espèces ci-après sont protégées en tous temps et sur le tout le territoire: Monocotylédones (*Cymodocea nodosa*, cymodocée, paille de mer), (*Posidonia oceanica*, pelote de mer, chiendent marin).

Il existe également des protections plus spécifiques concernant plusieurs espèces :

- Poissons : *Epinephelus marginatus* (Mérou brun) bénéficie d'une protection contre la chasse sous-marine par arrêté du Préfet de Région

- Monocotylédones : *Zostera noltii* (Zostère naine/ varech de Nolti) et *Zostera marina* (Zostère marine/varech des bords de mer) bénéficient également d'une protection légale pour la région Provence Alpes Côte d'Azur (Arrêté du 9 Mai 1994 – ENVN9430087A – relatif à la liste des espèces végétales protégées en région Provence-Alpes-Côte d'Azur).

6- MISE EN ŒUVRE DE STRATEGIE NATIONALE ET DE PLANS D'ACTION EN CE QUI CONCERNE LA ZONE COTIERE EN MEDITERRANNE

7- OBSERVATION/ETUDES SUR LES ESPECES INTRODUITES ENREGISTREES DANS LE DOMAINE COTIER MEDITERRANEEN

Le Ministère de l'Aménagement du Territoire et de l'Environnement coordonne et finance, depuis 1999, un grand programme pluridisciplinaire concernant l'espèce invasive *Caulerpa taxifolia* ; ce programme, d'une durée de trois années, associe huit équipes scientifiques. Un nouveau programme, plus large, « Invasions Biologiques » est appelé à renforcer cette initiative au cours de l'année 2001.

Des opérations ponctuelles de contrôle de la progression de Caulerpa taxifolia sont réalisées dans des espaces considérés comme « sanctuaires » pour leurs qualités biologiques et paysagères (Parc National de Port-Cros). Ces recherches systématiques et annuelles de Caulerpa taxifolia conduisent à une éradication manuelle par découpage du substrat meuble ou à l'utilisation de couvertures au cuivre sur substrats rocheux et profonds.

8- LISTE DES ESPECES ENDEMIQUES DE MEDITERRANNEE

9- LES ACTIVITES ENTREPRISES DANS LE CADRE DE LA MISE EN ŒUVRE DU:

a- Plan d'action pour la gestion du phoque moine en Méditerranée,

b- Plan d'action pour la conservation des tortues marines de Méditerranée,

Un réseau d'observateurs a été mis en place le long du littoral méditerranéen de la France avec un coordinateur régional, responsable du réseau. Un projet de centre de soin agréé est à l'étude. Une banque de données des marquages et des observations en Méditerranée française est implanté dans la banque de données du Service du Patrimoine Naturel du Muséum National d'Histoire Naturelle à Paris.

Dans le cadre du Plan d'Action, nous accordons la priorité pour promouvoir des actions visant à réduire les mortalités des individus adultes qui correspondent aux stades les plus sensibles au point de vue démographique. Par conséquence, il faut veiller particulièrement aux mortalités accidentelles causées par des engins de pêche.

c- Plan d'action pour la conservation des cétacés en Méditerranée,

La France est associé à Monaco et à l'Italie dans le cadre de la création d'un Sanctuaire pour la Conservation des Cétacés en mer Méditerranée. Ce sanctuaire qui a fait l'objet d'un accord tripartite , à Rome, le 25 Novembre 1999, couvre une surface de 87 500 km² dans le bassin tyrrhénéo-corso-provençal.

Les caractéristiques physiques et climatiques de ce bassin créent des conditions tout particulièrement favorables au développement de la production primaire permettant d'initier des chaines alimentaires complexes dont les cétacés constituent les maillons ultimes. Les populations, estimées à plusieurs dizaines de milliers sont constituées par 12 espèces différentes.

Si les cétacés sont particulièrement visés par les mesures de protection, il est indéniable que d'autres grands groupes zoologiques profitent de ces mesures tout au long de la chaîne trophique (oiseaux, grands céphalopodes, sélaciens, tortues marines,…)

d- Plan d'action pour la conservation de la végétation marine en Méditerranée (ou raisons en cas d'absence)

Compte tenu de l'adoption récente de ce Plan d'Action, un effort particulier est actuellement consenti pour sa mise œuvre, et plus particulièrement :

La réalisation d'inventaires floristiques, régulièrement mis à jour, et ce malgré une réduction dramatique des compétences dans ce domaine (désintérêt vis à vis de la taxonomie des instances scientifiques)

La réalisation de cartographies biocénotiques exhaustives du littoral méditerranéen, et plus particulièrement des herbiers de phanérogames marines (les deux tiers de ce littoral sont à ce jour cartographiés)

La mise en place et l'extension des « Réseaux de Surveillance Posidonies » en Région Provence Alpes Côte d'Azur et en Corse ; à terme 66 sites seront régulièrement suivis avec un double objectif (i) suivre l'évolution de ces herbiers (extension et vitalité) et (ii) les utiliser comme indicateurs de la qualité du milieu

10- ACTIVITES EN RELATION AVEC LES INVENTAIRES (achevés ou en cours) DE SITES, EN UTILISANT LE FORMAT STANDARD DE DONNNEES (FSD) POUR LES INVENTAIRES NATIONAUXDES ISTES NATURELS D'INTERET POUR LA CONSERVATION

11- ACTIVITES DE COLLABORATION ENTREPRISES DANS LE CADRE DE LA MISE EN ŒUVRE DU PROTOCOLES ET/OU DES PLANS D'ACTION, SPECIALEMENT AUX NIVEAUX NATIONAL ET SOUS-REGIONAL

CONCLUSION

D'importantes difficultés subsistent dans la protection des zones côtières et du milieu marin méditerranéen:

- La côte française est fortement urbanisée; aussi toute action de protection doit-elle s'appuyer sur une large concertation entre les collectivités locales, les élus et l'Etat. La concertation s'accompagne souvent de conflits avec les promoteurs immobiliers, ce qui retarde d'autant la mise en oeuvre d'actions de gestion concrète.

- Les spécialistes sont en nombre insuffisant pour réaliser les inventaires nécessaires du fait d'un manque de postes d'emplois publics ouverts dans ce domaine et de crédits d'études.

- Le développement d'infrastructures routières, l'urbanisation, la pollution tellurique, le développement de certaines activités sportives (scooters des mers) ou touristiques (whale watching) sont autant de sujets qui mobilisent les services soucieux de la conservation harmonieuse de la Méditerranée

FIFTH MEETING OF NATIONAL FOCAL POINTS FOR SPA
(Valencia, 23-26/4/01)

REPORT OF THE HELLENIC REPUBLIC

SPA Focal Point: Section of Nature Management, Environmental Planning Division, General Directorate of Environment, Ministry of Environment, Physical Planning and Public Works

Main contributions to this report were made by Thalia Lazaridou(Greek Biotope – Wetland Center), Mom (Hellenic Society for the study and protection of the monk seal), ARCHELON (Sea Turtle Protection Society of Greece), WWF- Greece

INSTITUTIONAL FRAMEWORK

The overall responsibility for the coordination of implementation of environmental policies lies with the General Directorate of the Environment in the Ministry of Environment, Physical Planning and Public Works. In the implementation of the SPA Protocol competence lies jointly with the Ministry of Environment - General Directorate for Environment, the Ministry of Agriculture -General Directorate of Forests, General Directorate of Agriculture and General Directorate of Fisheries and the Ministry of Merchant Marine – Port authorities (species conservation- establishment and management of marine/coastal protected areas). Environmental authorities at the Regional, Prefecture and Municipality levels contribute at the enforcement of national laws and regulations.

LEGAL FRAMEWORK FOR THE CONSERVATION OF SPECIES AND SITES

- A new Law, (L.2742/99 «Physical Planning and sustainable development», Articles 15-17), issued in 1999, has introduced provisions for the administration and management of protected areas. Obligatory for National Parks, but to be also used for other categories of protected areas if suitable, is the establishment of management bodies which will be run by a Council (7-11 members) to include representatives of the Ministries of Environment and Agriculture, other relevant to the area ministries, representatives of local and regional authorities, specialists and representatives of environmental NGOs (which possess previous experience, activities and infrastructure within this geographical area and are represented nationally).

The older existing provisions are listed below:

- Law 1650/86 «For the protection of the environment», Articles 18-22 (Protection of nature and landscape), 31, par. 9 (modification of existing provisions)
- Joint Ministerial Decision 33318/3028/1998 «Establishment of measures and procedures for the conservation of natural habitats, and of wild fauna and flora»
- Ministerial Decision 414985/1985 «Management measures for wild birds»
- Joint Ministerial Decision 69269/5387/1990 «Categories of projects and activities with regard to their environmental impacts, Environmental impact studies, Special Environmental Studies»
- Presidential Decree 67/1971 « Procedures for the conduct of research and measures for the conservation of protected species of fauna and flora»

RELEVANT INTERNATIONAL AGREEMENTS

Conventions Ratified: Paris, Ramsar, Barcelona , Bern, Bonn, Washington, Rio (Biodiversity)
Conventions Signed, under the process of ratification: Barcelona (Rev. 1995), European Convention for landscape
Agreements and Protocols ratified: SPA, Eurasian Migratory Birds
Agreements and Protocols Signed, under the process of ratification: ACCOBAMS,
SPA (rev. 1995)

PROGRESS IN MARINE AND COASTAL PROTECTED AREAS

1. As ten years of management of the National Marine Park of Alonissos- Northern Sporades (NMPANS) have been completed in 2000, a short report with facts has been compiled by MOm (Hellenic Society for the Study and Protection of the Monk Seal), who have been engaged by an agreement with the Ministry of Environment to support several operations of the Marine Park during this period.
The positive respond of the monk seal population to the management measures was documented by its observed reproduction rates during this period (see Action Plan for Monk Seal below). The local society and fishermen have supported the operation of the park, a fact documented by the very few occasions of offending the regulations that were observed during this period. The main recommendations of the report concern the need for the establishment of a permanent Management Institution and the potential for optimizing the procedures for collection of fines and penalties.

2. The National Marine Park of Zakynthos (NMPZ) and its Management Institution were established by a Presidential Decree issued in December 22, 1999 (O.J. 906/D). The Marine Park covers 1420 ha of land, and 8920 ha of marine area and its aim is twofold : (1) the conservation of : nesting habitat of *Caretta caretta*, monk seal habitats, habitats of migratory bird species, endemic plants habitats, sea grass meadows, fish stocks and (2) the sustainable development of activities such as environmental awareness and education, tourism and recreation, and those related to the maintenance of traditional uses and the protection of physical and cultural landscape.

Management objectives and regulations for each of its internal zones are contained in the same Decree and a Periferal Zone to the Marine Park, of 3120 ha, has been designated encompassing existing settlements and specifying land uses that ensure the viability of the Marine Park.
The Management Institution of the Marine Park, its responsibilities and legal status were established by the same Decree and its Governing Council was set up by a Decision of the Minister of Environment, Physical Planning and Public Works, on 20/7/2000 (revised 30/01/01). Members of the Council appointed are the representatives of the Ministry of

Environment, of the respective Region, of the local authorities and the Prefecture as well as of an NGO with longstanding presence in the area (ARCHELON- The Sea turtle protection Society and WWF- Greece have a joint representation).
Safeguarding for the enforcement of regulations, management of nesting beaches, monitoring of the loggerhead nesting activity, operation of information stations, targeted awareness campaigns and systematic presentations to visitors were carried out throughout this period, in collaboration with ARCHELON- The Sea turtle protection Society.
3. The National Park of Schinias, in the vicinity of Athens metropolitan area, was established by a Presidential Decree, issued on July 3rd, 2000, (OJ 395/D). The National Park covers 1500 ha in total, 15 % of which are marine and its aim is the protection, conservation, management and restoration of nature and landscape in the terrestrial and marine area of Schinias- Marathonas.
Within the National Park there is distinction of 5 areas of nature protection, designed for the conservation of a coastal wetland, of typical Mediterranean vegetation on surrounding hills, of the coastal forest of *Pinus pinea* and *Pinus halepensis*, of a freshwater spring and of the sea grass meadows in the marine part of the Park, the Bay of Marathon. In addition to those, there are also designations of Zones for environmental education, research, sports, recreation, housing and agriculture.
Management responsibilities for the Park have been given to the existing Environmental Agency for Athens, until the establishment of a Management Institution for the Park, foreseen in the coming year.

PROTECTED MARINE AND COASTAL SPECIES OF FAUNA AND FLORA
see next paragraph

NATIONAL BIODIVERSITY STRATEGY/ ACTION PLANS
1. The existing draft of the National Biodiversity Strategy includes several sections relevant to the SPA protocol, namely those concerning Protected Areas, Fisheries, Tourism. The text has been elaborated by the Co-ordinating Unit for the Implementation of the CBD in Greece, based in the University of Athens, under the guidance of a Committee of representatives of respective national authorities. The existing draft is open for comments from different sectors and is expected to be finalized at the end of the year.
2. In parallel to this project, all obligations of the country arising from International conventions and agreements and the European Communities Directives and Regulations were taken into account in the compilation of the National Master Plan for the Natural Environment, elaborated in 1999 by the Ministry of Environment. The Master Plan deals with the planning of activities for the next 6 years and contains three Action Plans:
The Action Plan for the National Network of Protected Areas deals with the legal and administrative considerations for the establishment and management of protected areas, the organization and operation of their Management Bodies and the overall Operation of the National System of administration and management of protected areas. The proposals include the most critical habitats of all endangered and protected species as well as protected habitat types.
The Action Plan for the conservation of species of fauna and flora deals with endangered and protected species conservation in a horizontal approach, mainly outside protected areas.
The Action Plan for Critical Issues of the management of the natural environment deals with the conservation of biodiversity and landscape outside protected areas and the protection, restoration and sustainable use of natural resources. Specific attention is paid to the protection, management and restoration needs of the coastal and island ecosystems and landscapes.
OBSERVATION /STUDIES ON ALIEN SPECIES IN THE MEDITERRANEAN
At this point in time, information has been available for Marine Macrophytes (macroalgae and seagrasses) and is given below. Any further information on other categories will be sent at a later stage.
Six macrophytes can be considered as probably introduced species to the Greek coasts from the 61 referred to in the Mediterranean Sea . The chlorophyte *Caulerpa racemosa* (Forskal) J. Agardh, the rhodophyte *Acanthophora najadiformis* (Delile) Papenfuss and the seagrass *Halophila stipulacea* (Forskal) Ascherson were introduced after the opening of Suez Canal, in the Aegean coasts. The Chlorophyte *Codium fragile* (Suringar) Hariot and the rhodophytes *Asparagopsis armata* Harvey, and *Womersleyella setacea* (Hollenberg) R. Norris (=*Polysiphonia setacea* Hollenberg) were introduced via different routes (i.e. aquaculture, transportation on ship hulls) first in western Mediterranean coasts and later on in the Greek coastline.
The species *Caulerpa racemosa* is considered to have the most important expansion along the Aegean coasts and occupies different habitats. Moreover, the seagrass *Halophila stipulacea*, was found to have a considerable expansion from the southern to the central Aegean coasts.
(Lazaridou Thalia and S. Haritonidis, 1999. Invasive species in the E. Mediterranean Sea. 7th Congress of Hellenic Botanical Society, Alexandroupoli, 1-4/10/1998)

LIST OF MEDITERRANEAN ENDEMIC SPECIES
A list of Mediterranean endemic macroalgal species encountered along the Greek coastline is attached at the end of this report (2 pages). Any further information will be sent when made available.

ACTION PLAN FOR THE MANAGEMENT OF THE MEDITERRANEAN MONK SEAL.
Activities undertaken were based on the National Strategy for the Protection of the Mediterranean monk seal (Archipelagos & MOm, 1996) and were carried out within the National Action Plan for the Conservation of the Species, mainly by MOm and WWF Greece (for Zakynthos), in collaboration with the Ministry of the Environment and the other responsible authorities.
Reduction in Adult Mortality
The operation of MOm's Rescue and Information Network throughout Greece has maintained and further promoted a good working relationship with fishermen and authorities, thus contributing to the collection of information on the species and the rescue of wounded animals and in parallel altering fishermen's attitude towards the monk seal.

Establishment of a Network of Marine Reserves

The effective operation of the National Marine Park of Alonissos Northern Sporades included guarding by a team already established in previous years and monitoring activities on a regular basis. During the reproductive period of the year 2000, 12 monk seal pups were recorded. This number compared with the mean reproductive activity of the previous years (6 pups per year) provides evidence of the positive impact of NMPANS to the monk seal population of the area. Concerning awareness activities in the area, three information centers operated throughout the summer period. The Research Centre in Gerakas was re-organized as the basis of management activities within the Park in the following years.

In the framework of the LIFE-Nature Program «The Mediterranean Monk Seal in Greece: Conservation in Action» Specific Environmental Studies for the establishment of two Special Areas of Conservation on the islands of Kimolos-Polyaigos and Northern Karpathos-Saria, which as considered as areas of primary importance for the conservation of the Mediterranean monk seal in the Aegean Sea. These studies, elaborated by MOm, contain a detailed zoning system, specific regulations and management proposals and were submitted to the Greek Ministry of the Environment in December of 1999.

In the framework of the same project the elaboration of a Specific Environmental Study for the establishment of a Special Area of Conservation on the West and Northeastern coast of Zakynthos was conducted by WWF-Greece. This area was also monitored for the evaluation of the monk seal habitat, the species population rising to 17 individuals approximately, human activities and development trends have been recorded and interactions of seals and fishermen have been studied.

Research, Data Collection and Rehabilitation.

The monitoring of the monk seal population in the wider area of the NMPANS was continued by Mom. In addition, during the period 1997-1999 and in the framework of the LIFE-Nature programme «The Mediterranean Monk Seal in Greece: Conservation in Action» (contract no B4/3200/96/500) surveys and monitoring of the monk seal population and its habitat were conducted in the islands of Milos-Kimolos-Antimilos-Polyaigos, Karpathos-Kasos and Samos-Fourni-Ikaria by Mom. Furthermore, in the year 2000, the same NGO surveyed the coast of the NATURA 2000 sites on the islands of Tinos and Andros with the support of the Prefecture of Cyclades.

The West and Northeastern coasts of Zakynthos were monitored by WWF – Greece for the evaluation of the monk seal population and habitat, human activities and development trends have been recorded and interactions of seals and fishermen have been studied.

Data on the status of the monk seal and its habitat as well as to seal-fisheries interactions through the continuous operation of the RINT by MOm, a network of observers throughout the country that constantly provide data in the above fields. Based on the operation of this network for the period 1999-April 2000, the RINT responded in cases of seals reported dead and performed 16 necropsies.

The operation of the Seal Treatment Rescue and Rehabilitation Centre on the island of Alonisos continued by MOm and 2 monk orphan monk seal pups were transferred to this unit . A new rehabilitation unit was constructed in the Research Centre in Gerakas, where the STRC will be transferred.

Information Programmes

Six information centers on the islands of Alonissos, Skopelos, Milos and Karpathos were operated by MOm that contributed considerably to the sensitisation of locals and visitors. Environmental education programmes for school children were carried out in Athens and on the islands of Alonissos, Milos-Kimolos-Antimilos-Polyaigos, Karpathos-Kasos and Samos-Fourni-Ikaria. Furthermore, informative material (leaflets, stickers, posters etc) was produced and disseminated throughout Greece and especially in areas of specific interest for the monk seal. Lasty, MOm's periodical publication "Seal Stories" was distributed to more than 4.000 people and numerous presentations were made through the mass media.

WWF – Greece has operated an information center on Zakynthos, and has made public presentations on the subject at a local level.

ACTION PLAN FOR THE CONSERVATION OF MARINE TURTLES

LEGISLATION

The major nesting sites in Greece have been included in the national list proposed for the NATURA 2000 European network: Zakynthos, Bay of Kyparissia, Rethymnon, Bay of Lakonikos and Bay of Chania.

Three other nesting sites not classified as “major” nesting sites are under specific legal protection status: Messara Bay (proposed NATURA site, GR 4310004), Kotychi Lagoon area (Ramsar site) and Mounda beach on Kephalonia included in land planning study.

On 1 December 1999, the National Marine Park of Zakynthos (NMPZ) was legally established. It is the first National Park in the Mediterranean for sea turtles. To date the Management Agency Board has convened 12 times, has acquired premises, permanent staff and is proceeding with wardening and the elaboration of compensation schemes for affected landowners.

PROTECTION AND MANAGEMENT OF CRITICAL HABITATS

A management plan for the nesting beaches on Crete (Rethymnon, Chania, Messara Bay) has been completed by ARCHELON (Sea Turtle Protection Society) and is being updated and implemented in collaboration with national and local authorities. A management plan was completed in 2000 for Lakonikos Bay and is currently being implemented by the same Organisation.

On 1 March 2000, the Ministry of Environment issued a circular to all competent authorities regarding the operation of watersports, the use of beach furniture, and photo pollution from buildings and street lights on the nesting beaches in

Greece.
On average 2,500 nests are protected against human interference, predation, sea inundation through nest translocation or *in situ* screening/caging on all major nesting sites (Zakynthos, bay of Kyparissia, Bay of Lakonikos, Crete) totalling 75 km in length.
Close co-operation with local authorities has been established in almost all major nesting sites to promote sea turtle conservation.

REDUCING MORTALITY AT SEA AND ELIMINATING LOCAL CONSUMPTION AND USE
A pilot project to assess incidental catch in Lakonikos Bay was completed in 2000. It established that the area is a foraging ground for green turtles (*Chelonia mydas*). A similar project is underway in Western Peloponnesus and in the Bay of Amvrakikos.
Over 280 turtles have been admitted to the Sea Turtle Rescue Centre, since 1994, of which 64 only in 2000. About 60% of admitted turtles have been released after treatment.
A Mediterranean project (Spain, France, Italy and Greece) to assess interaction between turtles and fishing gear was completed in 2000.
Active participation of local Port Authorities in reporting strandings has increased in the last two years. Actions to regulate speedboats off certain nesting beaches have been taken.

INFORMATION, EDUCATION AND TRAINING
Through 11 seasonal information stations, two permanent information centres, 850 slide shows in hotels, regular beach patrols, over 150,000 visitors are directly informed about the sea turtles annually by ARCHELON. Over 400 volunteers from all over the world are trained and participate in the conservation projects. Every year over 10,000 school children participate in environmental education activities.

SCIENTIFIC RESEARCH AND MONITORING
Genetic analysis of populations, satellite and radio tracking projects are underway by ARCHELON. Tagging programmes are carried out yearly on all major nesting sites.
Systematic monitoring of all major nesting beaches (75 km in total) in a standardised way is carried out yearly, by ARCHELON.

ACTION PLAN FOR THE CONSERVATION OF CETACEANS
In December 2000, the Ministry of Merchant Marine- Port Authorities has issued a new circular to all Port Police Stations with regard to data collection on cetacean sightings and strandings and has initiated a relevant data base. Currently, permission to perform non lethal research, monitoring and handling of stranded animals is given by the Ministry of Agriculture and several research groups are active in a non coordinated way in this field, including educational activities of the public and fishermen.

ACTION PLAN FOR THE CONSERVATION OF MARINE VEGETATION
Several sites of the NATURA 2000 network in Greece include coastal areas with important features of marine vegetation. All projects likely to affect the integrity of this type of habitats are thoroughly screened, through the legal provisions of environmental permission.
A marine and coastal habitat-mapping project has been carried out in 67 sites, spread throughout the country, in the frame of an overall habitat mapping program in sites of conservation interest, by the Ministry of Environment. The project was undertaken in 1999 by a consulting firm in collaboration with the main Marine Research Institutions of Greece and has proceeded in the phyto- sociological analysis of about 1000 releves. The first results of this exercise have led to the identification of 21 vegetation associations listed in Appendix B of the SDF, and all data have been stored in a relevant Data base. A further qualitative and quantitative evaluation of the findings will be available after the project is completed, end of 2001.

NATIONAL INVENTORIES OF NATURAL SITES OF CONSERVATION INTEREST.

The national Database currently in operation does not provide for the separate elaboration of data for the marine and coastal areas, as many of the sites identified so far, present conservation interest both in their terrestrial and marine parts. However, several of the information fields contained in the SDFs are completed in the 113 sites that have a significant marine component.

COLLABORATION AT BILATERAL OR SUB REGIONAL LEVELS

In the frame of a European network for *Monachus monachus*, funded by the European Commission, exchange visits have taken place between Madeira and Greece, Greece and Spain (the University of Barcelona team, working in Mauritania), Madeira and Spain.
The Greek Ministry of Environment has proceeded in funding a joint project for the technical exchange of experience for the conservation of the monk seal between a Greek and a Turkish NGO, under the guidelines of DAC/ OECD, which is underway.

STATE OF ISRAEL

MINISTRY OF THE ENVIRONMENT

Country Report for the Fifth Meeting of National Focal Points for SPA

(Valencia, 23-26 April, 2001)

Country - Israel

Authors of the report: Dr. Eliezer Frankenberg, Dr. Reuven Ortal, Mr. David Zakai, Mr. Zeev Kuller (Nature and National Parks Protection Authority).

Brief description of the institutional framework: The Israel Ministry of the Environment is responsible for all aspects of the Barcelona Convention including its Protocols. The management and responsibility for protected areas and natural assets, including natural and cultural heritage sites is on the Israel Nature and National Parks Protection Authority (NNPPA). This Authority operates under the National Parks, Nature Reserves and Memorial Sites law of 1998, under the Minister of the Environment. This authority is therefore responsible for the protection of biodiversity and of natural and cultural sites. The implementation of the SPA protocol and the protection of the Mediterranean biodiversity is on the Nature and Parks Protection Authority.

Brief description of the legal framework governing the conservation of species and sites: The main law is the National Parks, Nature Reserves, Memorial Sites and National Sites Law, 1998. In this law National parks are areas meant for “the public enjoyment of nature or for the preservation of areas of historic, archeological, or architectural importance.” Nature Reserves are areas that, following consultation, the Minister of the Interior may declare an area of scientific or educational interest. A nature reserve is “an area in which animals, plants, inanimate objects, soil, caves, water and landscape are protected from changes in their appearance, biological makeup, and natural development.” Among the responsibilities of the Nature and National Parks Protection Authority are “to initiate and plan the establishment of nature reserves, to manage and develop the reserves and to protect natural assets...”. A “protected natural asset,” as defined by this Law, means “anything or class of things in nature, whether animal, vegetable or mineral, whose preservation, in the opinion of the Minister, is of value.” The Minister may declare any natural asset to be a protected natural asset throughout Israel or any specific part of it. A person may not damage, destroy, pick, uproot, poison or otherwise change a protected natural asset except with the permission of the Director of the Nature and National Parks Protection Authority.

The second is the Wild Animals Protection Law, 1955. A protected wild animal, as defined by this Law, is any wild animal not designated by the Minister of Agriculture as a "game animal" or a "pest". Hunting protected animals is prohibited. The Minister of Agriculture is charged with the implementation of the law, and is authorized to make regulations as to "the protection and preservation of wild animals, the encouragement or prevention of their propagation, and their rescue from fires or other disasters of nature". He may also regulate *inter alia*, the procedure for the destruction of pests, taxidermy, and the use of zoos and farms for the keeping and raising of wild animals.

Status of signature/ratification of the relevant international agreements: Israel has ratified the Barcelona Convention and its protocols. Furthermore, Israel is in the process of ratifying the SPA and Biodiversity Protocol.

Other related conventions ratified by Israel are CITES, CMS, RAMSAR, CBD, UNCCD, UNFCCC, Vienna Convention and Protocols, and Basel.

Marine and coastal protected areas (new developments): The present list of proposed and declared nature reserves and national parks includes 14 marine reserves and 20 coastal reserves and 14 national parks. Change of status for marine sites: Yam Dor Habnim (marine) Nature reserve, deposited before declaration (16 Sept 1999. – 5.192 sq km). Change of status for coastal sites: Holot Palmahim (coastal) Nature Reserve. Officially confirmed for submission (26 June 1999; 8.332 sq km). Holot Ziqim (coastal) Nature Reserve. Officially confirmed for submission (26 June 1999; 8.332 sq km).

Protected marine and coastal species of fauna and flora: A new list of protected natural assets (to substitute the recent one) is under legal procedures.

Implementation of national biodiversity strategy and action plans: The outline for the national biodiversity strategy is presented in the first national report to the CBD. No special progress has been made in the implementation of the strategy, so far.

Observations/studies about alien species recorded in the Mediterranean coastal zone: Prof. B. Galil (Israel Oceanographic & Limnological Research and Nature and Parks Authority, Israel – Board of Directors), has published a comprehensive review _ "A sea under siege – alien species in the Mediterranean" (Biological invasions 2: 177-186, 2000). In this document she report that, "more than 300 Erythrian species, principally molluscs, fish, decapod crustaceans, polycheates and algae – have become established in the eastern Mediterranean, **primarily along the Levantine coast**". In this article, other sources of invaders are also mentioned.

List of country and/or Mediterranean endemic species: It is still too early to list the marine endemic species of the Levantine coast, mainly due to the political situation.

Activities:

a. Action plan for Monk seal: There is no Monk seal population in Israel.

b. Action plan for marine turtles: From Zeev Kuller. 1999. Current Status and Conservation of Marine Turtles on the Mediterranean Coast of Israel. Marine Turtle Newsletter 86:3-5, the following was reported - Both green turtles and loggerhead turtles nest in small numbers on the 190 km Mediterranean coast of Israel. A national management programme was prepared by Meir and Kuller and has been implemented since 1993. The main threat to turtle nests is the intensive traffic of four wheel drive vehicles on the beaches, which is especially heavy on weekends. Other threats are predation by foxes and inundation by seawater during summer storms. It is probable that urbanization and infrastructure development along the coastal plain are a threat to the young turtles emerging from the sand, being disoriented by terrestrial light sources. Heavy road traffic on the roads near the coast, as well as human activity on the beach at night, may disturb nesting female turtles. Legal protection of marine turtles and their habitats in Israel is making progress. The recognition of the need to protect Israel's natural and landscape

resources first led to the enactment of the National Parks and Nature Reserves Law in 1963. During the nesting season, Rangers from the Nature and National Parks Protection Authority survey the entire coast excluding urban areas and some inaccessible sections, each morning. Field skills have been developed by a combination of participation in RAC/SPA programme conducted at the Lara Reserve in Cyprus and local training during field work, based on the manual on marine turtle conservation in the Mediterranean. All nests discovered during the survey are excavated and eggs are translocated to the closest of two hatcheries either at Bezet in Western Galilee, or at Atlit on the Carmel coast. The hatcheries are protected against human activity by a simple fence and explanatory signs. Each nest is protected against predation with a cylinder of wire netting. Hatchlings are released immediately after emergence, or on the following night, preferably at the original nesting beach. In those cases where the clutch was laid at a site unsuitable for future nesting, hatchlings are released at coastal nature reserves. Hatchlings are released backed by a V shaped screen made of a thick, opaque cloth, open to the sea. This enclosure facilitates the presentation of the release process to the public whilst avoiding the disorientation of hatchlings by terrestrial light sources. To our knowledge, based on anecdotal evidence collected from fishermen, and data on stranded carcasses (20 green turtles and 17 loggerhead turtles; 1993 - 1998), the incidental catch of marine turtles along the Israeli coast is not high. In most cases, we were not able to define the cause of death because of the advanced state of decay of the carcasses. In addition to baseline monitoring and conservation measures, project staff are also involved in collaborative academic studies on temperature dependent sex determination and the molecular profile of Mediterranean loggerhead turtles. All baseline data collected in the project can be made available to any researcher on the subject. Awareness and education programmes are considered important. The media in Israel informs the public of important events concerning the marine turtles. This includes news regarding the first nest in the season, first hatching, or the release of rehabilitated turtles. Public awareness is increasing. The public frequently attends hatchling releases, but since the number of nests is so low, the number of people involved does not exceed several hundred each season. On such occasions, a ranger gives a brief presentation regarding the biology of marine turtles, the need for protecting them and the aims of the project. One of the educational programmes of our centre on Mount Carmel includes a study on marine turtles designed for school children. In this study, children follow the physical conditions in an artificial egg chamber, collect data on the translocated nests in the hatchery and attend the hatchling release. At the end of the study, they present a short report, emphasizing the threats to marine turtles on our coast and discussing means for their protection. The small nesting sea turtle population of Israel is a relic of a much larger population.

c. Action plan for Cetaceans: David Zakai reports that long-term monitoring of the Cetaceans of the Israeli Mediterranean coast, is undertaken mainly by the Israeli Marine Mammal Research and Assistance Center (IMMRAC) of Haifa University. This monitoring is done with the agreement and control of the Nature and Parks Authority, and help of the coastal NNPPA rangers. This monitoring includes mainly the monitoring of some tens of dolphins living in the Israeli territorial water (Bottlenose dolphin, Striped dolphin and Common dolphin), and other 5 cetacean species known so far from the Israeli coast (informed by Dan Kerem and Oz Goffman, IMMRAC). Throughout the past year, IMMRAC has carried out half-day boat surveys of coastal waters, concentrating on the central and far north sections of the Israeli Mediterranean coastline. The surveys at this early stage did not include systematic transects, but were rather aimed at points with a high probability of animal encounters, often in the vicinity of working trawlers. The main aim of the surveys

was to gain experience in approaching animals at sea, for purposes of photo-identification and biopsy sampling. The majority of the excursions yielded encounters, mainly with small pods of female bottlenose dolphins (*Tursiops truncatus)*. A few multiple sightings of distinctly marked individuals in the same area at intervals of several months suggest that a degree of territoriality exists even along our featureless coastline. The surveys will continue with the aim of establishing a photo-identification catalog (close-ups of dorsal fin profiles) of local coastal populations. The surveys were made possible by the donation of a 6 m, semi-inflatable (fiberglass bottom) Zodiac boat with an 80 hp outboard motor, from Tnuva and the Society for the Protection of Nature in Israel (SPNI), through their 'Born to Nature' project. The boat has an advanced inboard steering wheel, a 3.5 m clear working space in the front and was chosen to withstand the rough conditions of our coastal waters. It is operated by IMMRAC's volunteers for both research and salvage. Insurance donated by the Israeli Phoenix Co and fuel by the Alon Petrol Co. On going research includes: Freshly beached animals continue to be a source of information in the search for a correlation between age-normalized heavy metal tissue contamination and pathological findings at autopsy. Age is determined from teeth sections. It was revealed that age distribution of beached bottlenose dolphins was similar to that reported in other parts of the world. There was a preponderance of very young animals. The oldest animal (actually a skeleton brought up from the 30 m deep sea floor) was 39 years old. Preliminary results of nuclear DNA analysis on tissue samples collected by IMMRAC staff from a Red Sea bottlenose dolphin (*Tursiops aduncus*) and several Mediterranean bottlenoses with a spotted pattern reminiscent of the former, showed no evidence of possible gene exchange through the Suez Canal.

d. Action plan for marine vegetation: Marine macroalgea: a. An annotated species list is under preparation, due to efforts of identification of the Mediterranean coastal communities. This project has been published recently: b. A five-year monitoring program of algal communities is being performed (by Dr. B. Lundberg and Dr. R. Ortal NNPPA). First results were presented.

SDF: Standard Data Entry Form for three marine reserves is under preparation (to be submitted as a SPAMI after they receive an official status).

Collaborative activities: Special efforts have been made to promote the legal status of Rosh Haniqra Marine Reserve as a nature reserve on the Israeli-Lebanese border and presumed part of future trans-boundary marine reserve.

National Report

ITALY

Giulio Relini NFP – University of Genova and the Ministry of the Environment

Institutional Framework

The Ministry of the Environment is the body with main responsibility for Nature and Biodiversity protection and conservation. The “Servizio per la Difesa del Mare” Directorate has been given the task of protecting the marine environment while the “Servizio Conservazione della Natura” Directorate is responsible for other types of environment. There is a new body “Servizio per la protezione internazionale dell’Ambiente”. The Ministry of Foreign Affairs is involved in all international agreements.
Regional authorities (some regions in Italy have autonomous status) can protect some local coastal zones, including areas in the sea.
Biological resources and biodiversity management is also carried out by the Ministry of Agricultural and Forestry Policy and in particular by the Fishery and Aquaculture Directorate.

Legal Framework governing the conservation of species and sites (main legal instruments)

The main Italian laws are those that ratify the 1992 Rio Convention (Law 124/84) and the E.C. Habitat Directive 43/92 (DPR 357/97) which are both concerned with species and site conservation. In addition, the main laws for protected areas are Laws 394/91 and 448/76 (Ramsar 1971). Regarding species the laws of ratification of international agreements and conventions are Law 157/92 (Mammals and Birds related to E.C. 43/92; E.C. 409/79, Paris 50), 81/78 (Paris, 1950), 503/81 (Bern 79), 42/83 (Bonn, 79), 874/1975 (Washington-CITES, 1973).
The main laws on protected marine areas are no. 979/82 and no. 394/91 (the law that provides the framework for all protected areas in Italy) and 426/98.
Regarding marine species the main laws are 175/99 (ASPIM Barcelona 1995), 503/1981 (Bern 1979).

Status of signature/ratification of relevant international agreements

Italy has ratified and adopted into its legislation all the above-mentioned agreements, conventions, etc., most of them relating (though some only in part) to the marine environment.
In particular, the ASPIM protocol was ratified by Law 175 (25/05/1999, G.U. (Official Journal) no. 140 suppl. ord. 17/06/1999)

Italy, represented by the Liguria Region, participates in the RAMOGE agreement on the marine environment between Marseilles and La Spezia.
Italy has joined the International Whale Commission and the ICCAT and is an active member of the GFCM-FAO. The ACCOBAMS protocol is ready to be signed.
The setting up of a Cetacean Sanctuary in the Sardo-Liguro-Corso-Provençal Basin has recently been reactivated and will be proposed for inclusion in the ASPIM list.

Marine and coastal protected areas

Marine Parks. Laws 979/82 and 394/91 provided for the setting up of 46 marine parks in the Italian seas. Three more have since been added: Torre del Cerrano (Law 344/97), the Cetacean Sanctuary (Law 426/98) and the Maddalena – Capo Murro di Porco peninsula (DL. 8.03.2001); 15 have been established (Isola di Ustica, 1987; Miramare, 1987; Isole

Tremiti, 1989; Capo Rizzuto, 1992; Torre Guaceto, 1992; Isole Egadi, 1992; Isole Ciclopi, 1990; Porto Cesareo, 1998; Penisola del Sinis Isola di Mal di Ventre, 1998; Punta Campanella, 1998; Tavolara-Punta Coda Cavallo, 1998; Cinque Terre, 1998; Ventotene e S. Stefano, 1998; Golfo di Portofino, 1999; Capo Carbonara, 1998). A new area was established in 2000: Secche di Tor Paterno (Latium) D.M 29/11/2000 (G.U. no. 16, 20/01/2001).
With regard to wetlands, 103 main sites were selected, 47 of which correspond to the Ramsar Convention and 68 are coastal with at least partially marine or brackish environments. There are also some coastal and marine areas which are protected and managed by NGOs and eight biological protection zones (Zone di Tutela Biologica, Article 98 of Law 963/1965) and twelve “artificial reefs” for protection and restocking.

Protected marine species of fauna and flora

Marine species that are protected come under different agreements and conventions ratified by Italy. More in general, the protected animals (Vertebrates) are: 93 out of 118 mammals (of which 16 are marine); 467 species of birds out of 473 on the Italian check list; all 58 Reptiles (5 of which are marine) and 38 Amphibians; 39 out of 489 bony fish (20 marine), 7 out of 74 Selachians (all marine species), 4 out of 5 Agnatha (of which 3 are also marine).
Few marine invertebrates are protected: 14 out of 479 Porifera on the Italian check list, 7 out of 458 Cnidaria, 1 out of 304 Bryzoa, 16 out of 1090 Gasteropods and 316 Bivalves, 8 out of 2,142 Crustaceans and 4 out of 118 Echinoderms. Some non-marine invertebrates are protected species: 1 out of 1144 Anellids, 38 out of 37,315 Insects, 5 Molluscs and 2 Crustaceans.
In addition to the list of protected species a check list of Italian flora is also being compiled. Among marine flora 5 species are Phanerogams (Monocotyledones - of which 4 are protected) and 978 are macroalgae (of which 12 are protected).
Table 1 (enclosure 1) lists all protected marine species. All species referred to in Annexes II and III of the ASPIM are recorded, including freshwater species or species not yet recorded in Italy.

Implementation of the national biodiversity strategy and action plans with regard to the Mediterranean coastal zone

Preparation of a national plan is in progress. Special national plans are being prepared for Selachians, Cetaceans, Monk Seal and Sea Turtles, in coordination with ICRAM and the Ministry of the Environment Servizio Difesa Mare).
As part of collaboration schemes between the Acquario di Genova (the Genoa Aquarium), ICRAM and DIP.TE.RIS (Univ. Genoa), studies and experiments are being carried out to reproduce and breed artificially three protected species in Annexe II of the ASPIM: *Patella ferruginea* Gmelin, *Hippocampus hippocampus* L., *Hippocampus ramulosus* Leach. The idea is to define available know how and to pass it on to the managers of marine parks who wish to restock local populations with local specimens bred in marine park aquaria. This procedure is recommended as a way of avoiding genetic contamination and the spread of diseases and parasites. The research is funded by ICRAM.
An important role is played by the Acquario di Genova in the dissemination of information about problems of biodiversity and conservation needs to a large public.
Concern about GMO (Genetically Modified Organisms) is growing in Italy.
Finally, there is a national plan following EC recommendations to reduce fishing efforts and in particular the fishing fleet; this probably will have a positive influence on marine biodiversity conservation.

Studies on alien species recorded in the Mediterranean coastal zone
Updating of relevant inventories

Italian authors have contributed to the CIESM volumes on non-native species in the Mediterranean that deal with Fish (91), Molluscs (126) and Decapod Crustaceans (57). (The number in brackets refers to the number of species described for each taxonomic group.)

Inside the Italian Society for Marine Biology (SIBM) a working group chaired by Prof. Anna Occhipinti Ambrogi has been set up with the aim of studying the problem of marine allochthonous species in Italy and collaborating with the ICES Working Group on Introductions and Transfers of Marine Organisms (WGITMO) ICES/IOC/IMO Study Group on Ballast and other Ship Vectors (SGBOSV) at present chaired by S. Gollasch.

The Ministry of the Environment “Servizio Difesa Mare” has funded a study that was carried out by the SIBM with the following aims:

1) to update knowledge on marine allochthonous species in Italy
2) to prepare identification sheets for 30 main species
3) to bring together present legislation on the introduction of species
4) to identify the nature of the problem of ballast water in Italy
5) to study the benthos of hard substrata in three harbours: Genoa, Salerno and Palermo.

Harbor structures were surveyed by scuba divers and/or underwater video cameras.

Benthos was sampled at ten stations (3 replicates per station in summer and in winter) and examined in the laboratory to obtain a description of the community and to investigate the possible presence of non-indigenous species.

The idea in future is to follow these target stations not only looking for alien species but also to promote biodiversity and climate change studies.

The list of allochthonous species recorded in Italy is in the enclosure 2. The invasion of two species of *Caulerpa* is investigated at different sites.

The University of Genoa is studying the spread of *Caulerpa taxifolia* and *C. racemosa* along the Ligurian coast. In particular, changes in the fish and benthos community and interaction with fishing gear are being investigated.

List of Italian or Mediterranean endemic species

In the check list of Italian Fauna (57,344 species) endemic species are recorded for each taxon; for marine species this identification is very difficult. For example, among the 430 fin fish species only two marine or brackish species are considered Italian endemisms: the Adriatic sturgeon *Acipenser naccarii* Bonaparte 1836 and the small goby *Knipowitschia panizzae* (Verga, 1841), and one is considered strongly endangered: the sturgeon *Huso huso* (Linnaeus, 1758).

The recent paper by Quignard and Tomasini (2000) gives a list of endemic fish in the Mediterranean (enclosure 3).

A check list of Italian Flora (exept marine macroalgae and Phanerogams) is in progress. A list of Mediterranean marine macroalgae and seagrasses endemisms has been prepared by Prof. G. Giaccone and given to the RAC/SPA.

Activities undertaken to implement Action Plans

On behalf of the Ministry of the Environment and with the collaboration of General Directorate for Fishery (Ministry for Agriculture and Forest Policy), the SIBM, the Centro Studi Cetacei and other organizations, the ICRAM has prepared a three-year Italian Action Plan for the conservation and management of :Cetaceans, Monk Seal, Marine Turtles, Sharks.

In particular, the last action plan, which is not for the moment officially supported by the RAC/SPA, is very important and of extreme urgency. It is based on the IPPOA-SHARK

plan of the FAO. Some species of Mediterranean selachians are highly endangered.
At present there is no national action plan for marine vegetation, though the mapping of Posidonia beds all around Italy is ending, for most of the Italian regions maps are ready. The spread of allochthonous algae, in particular *C. racemosa* and *C. taxifolia*, is being monitored by the SIBM. Italy actively participated in the Ajaccio Symposium on Marine Vegetation.
An important contribution to our knowledge of the status of Cetaceans and Marine Turtles has been made by the Centro Studi Cetacei, which publishes an yearly report on stranded, rammed or accidentally caught Cetaceans along the coast of Italy (the thirteenth report published in 2000 reports data from 1998). The first report was on sea turtles that were stranded or incidentally caught during the year 1998.
A tagging programme of turtles is in progress. Better coordination at international level would be useful to avoid overlapping and confusion between different tagging projects in the Mediterranean Sea.
A cross-collaboration scheme was carried out between ICRAM and RAC/SPA and ANPE, Tunisia (Agence Protection de l'Environnement) in July 2000 to locate, map and document all monk seal coastal habitats in the Archipelago of La Galite, Tunisia. The future intention is to develop and apply a non-invasive method of monitoring monk seal presence in the coastal habitats identified in the Archipelago.
A documented monk seal sighting in the MPA of Capo Carbonara (south-eastern Sardinia) in August 2000 triggered a series of intervention schemes organized under the management of the MPA including a programme of educational awareness, the assessment of suitable monk seal coastal habitats in south-eastern Sardinia and a programme of non-invasive monitoring of possible coastal sites.

Site inventories (completed or ongoing) using the Standard Data-Entry Form (SDF) for national inventories of natural sites of conservation interest

In this context two activities have been carried out.
The DIP.TE.RIS (Dipartimento per lo Studio del Territorio e delle sue Risorse) of Genoa University was asked by the RAMOGE to study three small islands (Palmaria, Tino and Tinetto, near La Spezia on the eastern Ligurian riviera) and to use the Standard Data-Entry Form for the description of marine habitat around the islands. The final report was sent some weeks ago to the RAMOGE with comments on some of the difficulties encountered during the filling of sheets.
ICRAM has recently asked the SIBM to prepare, as soon as possible, a manual for the identification of species and habitats listed in the three annexes to ASPIM. For each species and habitat a factsheet will be prepared with drawings and colour photos, as well as descriptions of the main characteristics to enable identification.
We believe that this manual is an absolutely necessary tool to use SDF.

Collaborative activities undertaken as part of the implementation of the Protocol and/or Action Plans, especially at bilateral or sub-regional levels

Agreements and collaborative schemes are in progress involving France, Monaco and Italy to promote the Cetacean Sanctuary in the Corso-Ligurian Provençal basin. An additional reason for the Sanctuary is the recent discovery that the Mediterranean fin whale (*Balaenoptera phisalus* L.) is born in the northern Tyrrhenian and Ligurian Seas (Orsi Relini, 2000).
A second collaborative scheme is underway between France and Italy to promote the Bocche di Bonifacio international marine park (Sardinia and Corsica).

COUNTRY REPORT
FIFTH MEETING OF NATIONAL FOCAL POINTS FOR SPA
LEBANON

Lara SAMAHA
CBD Focal Point – Nature Conservation Service Ministry of Environment

INSTITUTIONAL FRAMEWORK

After several years of total lack of control imposed by the war situation in the country, the government of Lebanon has realised the importance of linking the environment to the overall development process. During the last few years, the Lebanese society has taken serious steps and given more attention to the environmental issues, accordingly many initiatives were launched to save the natural patrimony and promote protection and proper management of natural resources.

Before the institution of the Ministry of Environment, the Ministry of Agriculture in charge of the preparation and implementation of all the laws and legislation related to the natural resources.

After its institution in 1993, the Ministry of Environment took over the preparation and implementation of legislation on many issues related to the nature resources and become the main body responsible for biodiversity protection and conservation as well as the establishment and management of Nature Reserves. In the mean time, the Ministry of Agriculture is still in charge of many other aspects.

LEGAL FRAMEWORK GOVERNING THE CONSERVATION OF SPECIES AND SITES

Decree 121 – 12/3/1992: The declaration by law of Palm Islands Nature Reserve
Decree 708 – 12/11/1998: The declaration by law of Type Coast Nature Reserve

A proposed framework law that identifies the ways of establishement and management of nature reserves in a sustainable manner was prepared by the Ministry of Environment and submitted to the Council of Ministers for approval in order to be transmitted to the parliament for endorsement.

Ministerial Decision issued by the Minister of Agriculture banning the fishing of whales, Monk seals and Marine turtles (Dec 125/1 date: 23/9/1999).

Ministerial Decision regarding National Standards for Environment Quality was issued by the Minister of Environment in January 2001 (Dec 8/1), the Decision defined the Environmental Limit Values (ELV) for wastewater discharged into the sea.

Many other decisions regulating fishing were by the Ministry of Agriculture.

STATUS OF SIGNATURE / RATIFICATION OF RELEVANT INTERNATIONAL AGRREMENTS

Lebanon has ratified and adopted in its legislation the following Conventions:

Convention on Biological Diversity (Law n°:360 date: 1/8/1994)
Convention on wetlands of International Importance (RAMSAR Convention) (Law n°:23 date: 1/3/1999)
Barcelona Convention on the Protection of the Mediterranean Sea Against Pollution (Decree n°126 date: 30/6/1977)
Protocol Concerning Mediterranean Specially Protected Areas (Decree n°126 date: 27/12/1994).

MARINE AND COASTAL PROTECTED AREAS

Tyre Coast Nature Reserve (Decree 708 – 12/11/1998)
Palm Islands Nature Reserve (Decree 121 – 12/3/1992)

There is no new establishment of marine and coastal protected areas since 1998.

Three sites were recognised as Ramsar sites, two of them are coastal sites : Tyre Coast Nature Reserve and Ras el Chaqaa.

The Ministry of Environment is in the process of declaring Palm islands Nature Reserve as a fourth Ramsar site.

PROTECTED MARINE AND COASTAL SPECIES OF FAUNA AND FLORA

According to the laws of establishing Nature Reserves, all marine coastal species within these reserves are protected.

The Ministerial Decision issued by the Ministry of Agriculture protects the whales, Monk seals and Marine turtles and bans their fishing (Dec 125/1 date: 23/9/1999).

IMPLEMENTATION OF NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS WITH REGARD TO THE MEDITERRANEAN COASTAL ZONE

Lebanon has prepared a “National Biodiversity Strategy and Action Plan” in 1998 in order to fulfill the requirement of article 6 of the Convention on Biological Diversity.

In the context of the implementation of the strategy in the marine and coastal ecosystems, a project is being executed at the present and two other projects funded by international organisations will be launched soon.

Darwin project in coastal vegetation survey and management for Lebanon is executed by the Royal Botanic Gardens in kew/UK and the American University of Beirut since May 1999 and will last until March 2002.

Specific objectives of the project include:

1) A survey of coastal vegetation areas, the most threatened habitat in Lebanon
2) An inventory of coastal species, identifying threatened endangered plant species and habitats, which would include an initial culturally and economically important plat species.
3) Identification of important areas for plant conservation
4) Training in botanical inventory, plant identification, and herbarium management
5) Training in recovery planning for three selected species and initiation of planting projects with coastal resorts
6) The establishment of plant biodiversity as a teaching and research component within Lebanese universities.

A project on Coastal Areas Management Programme (CAMP) will be launched in May 2001. The project is funded by the Mediterranean Action Plan (MAP) and will be executed by the Lebanese Ministry of Environment. The project will execute the following activities in three sites in South Lebanon:

1) A data Collection about marine species
2) Assessment of the coast in order to select appropriate sites to be protected.

A project funded by the FFEM (Fonds Français pour l’Environnement Mondial) for the management of the Lebanese Wetlands including tyre Coast Nature Reserve will be launched in

the coming few months and will be executed by the Lebanese Ministry of Environment.

OBSERVATION/STUDIS ABOUT ALIEN SPECIES RECORDED IN THE MEDITERRANEAN COASTAL ZONE

New observations (since 1988) of marine algae in the Lebanese sea by some scientists have recorded the presence of three alien algae species: *Caulerpa racemosa, Caulerpa mexicana* (originating from the indopacific ocean) these two species don't represent any threat to the local species and a third species *Stypopodium zonal*, wich is considered to be our indigenous marine species.

LIST OF COUNTRY AND /OR MEDITERRANEAN ENDEMIC SPECIES

1. **List of endemic species in Tyre Coast Nature Reserve:**

Endemic plant species for the country (only in Lebanon):

Allium carmeli
Amaranthus graecizans silvestris
Euphorbia berythea
Eupatorium cannabinum syriacum
Launaea tenuiloba
Picris amalecitana
Crepis aculeata
Crepis aspera
Ranunculus cornutus
Papaver syriacum
Fumaria judaica
Enarthrocarpus arcuatus
Maresia nana
Trigonella spinosa
Trigonella cylindracea
Trifolium dichroanthum
Trifolium nigrescens petrisavii
Trifolium xerocephalum

Mammals species that are wholly or partially restricted to the Middle East region:

Erinaceus europaeus concolor
Rhinolophus euryale judaicus
Pipistrellus Kuhli ikhawanius
Canis aureus syriacus
Vulpus vulpus palestina
Vormela peregusna syriava
Spalax leucodon ehrenbergi
Acomys dimidiatus
Meriones tristrami tristrami

2. **List of endemic species in Palm Islands Nature Reserve**

Mammals species that are mainly of wholy restricted to the Middle East region:

Chiroptera
Rhinolophus euryale judaicus
Myotis blythi omari
Myotis nattereri hoveli
Pipistrellus kuhlu ikhawanius

Endemic plant species

Minuartia thymifolia syriaca
Melissa inodora
Stachys annua ammophila

Plant species that are wholly or partially restricted to the East Mediterranean Region :

Arisarum vulgare veslingii
Aristolochia parvifolia
Minuarti mesgitana
Fumaria gaillardotii
Papaver syriacum
Frankenia hispida
Anagallis arvensis phaenicea
Limonium sierberi
Heliotropium lasiocarpum
Lamium moschatum

Capparis spinosa
Enarthrococarpus arcuatus
Ononis reclinata mollis
Campanula stellaris
Crepis sancta
Sonchus asper glaucescens

ACTIVITIES UNDERTAKEN IN THE FRAMEWORK OF THE IMPLEMENTATION OF:

Action plan for the conservation of Mediterranean Monk Seal and Cetaceans:

An Ad Hoc Committee of specialists was established by the Ministry of Environment in 23/2/2000 to follow-up the issues related to the implementation of the SPA Protocol.

Accordingly, the National Center for Marine Studies (being a representative of the above mentioned committee) issued a circular in March 2000 to all the Security Forces present at the Lebanese shores and to the media, local people and fishermen requesting them to inform immediately the National Center in case they find any of the marine mammals (Whales, Monk seals, Dolphins) on the shore or in the water and to fill a questionnaire that was prepared by the place where it was observed and the date. This questionnaire will help the National Center to carry out the necessary scientific studies about these marine mammals and to take necessary measures to protect them in collaboration with the Ministry of Environment.

The Ministry of Environment, on the other hand, sent letters in this regard in May 2000 to the Ministry of Defence, the Ministry of Agriculture and the Ministry of transport.

No observations were recorded until now. However, the local T.V. stations have filmed dolphins found by some fishermen in Saida (south Lebanon) and Tripoli (North Lebanon) in January & February 2000. Copies of these films were sent to the concerned experts in France for further identification.

Action plan for the Conservation of Mediterranean Marine Turtles:

Awareness campaigns about the importance of the marine turtles are being conducted for schools, local communities and all stakeholders. These activities are organised within the framework of the protected areas project executed by the Ministry of Environment.

The Ministry of Environment has published articles in the local newspapers about the importance of the marine turtles and about the nesting sites of the green turtles that were discovered recently and for the first time on the Lebanese shores.

ACTIVITIES RELATED TO THE INVENTORIES OF SITES USING STANDARD DATA-ENTRY FORM (SDF)

These activities were not executed yet.

COLLABORATIVE ACTIVITIES UNDERTAKEN WITHIN THE FRAMEWORK OF THE IMPLEMENTATION OF THE PROTOCOL

Lebanon is a part of a regional project for the Development of Marine and Coastal Protected Areas in the Mediterranean Region within the framework of the European Union's SMAP programme. The project will undertaken a pilot action aiming to elaborate and initiate the implementation of the management plan for Palm Islands Nature Reserve.

Palm Islands Nature Reserve has received a grant of 5000 US $ from the UNESCO to execute a project aiming at assessing the impact of managing Palm Islands Nature Reserve on the flora, the birds, the marine turtles, the fishes and on fresh water.

COUNTRY REPORT AT THE FIFTH MEETING OF NATIONAL FOCAL POINTS FOR SPA

(Valencia, 23-26 April 2001)

Country: Malta
Author of the report: Alfred E Baldacchino

Brief description of the institutional framework:

The environment Protection Department was established by Parliament in virtue of Act V of 1991 – An Act to Protect the Environment. It now forms part of the brief of the Minister for the Environement.

Since its establishment, the Environment Protection Department has been responsible for the publication of diverse regulations aimed at protecting many local species of flora and fauna. For example, all marine mammals recorded in Maltese territorial waters are now protected, as are al Maltese reptiles and amphibians as well as a number of terrestrial mammals and a number of scientifically important plants and birds.

In order to complement the enactment of these regulatory measures, the Environment Protection Department has also embarked on educational projects aimed at increasing public awareness of the need for better appreciation and conservation of Malta's natural heritage Posters, booklets and books were published campaigns launched and seminars organised. A number of protected areas, so important from the educational point of view, were established. The environment Protection Department has also actively encouraged non-governmental environmental organisations and extended material help to them when this was required for the attainment of important objectives concerning the conservation of the environment.

Brief description of the legal framework governing the conservation of species and sites :

The protection of species and sites can be achieved through two ways :

i. either through primary legislation, i.e. legislation passed directly through parliament; or
ii. subsidiary legislation. Most of the protected species and sites are covered by subsidiary legislation, through the empowering clause in the Environment Protection Act, Act V of 1992, under which a number of legal notices protecting sites and species were published.

Reference to published legislation:

Primary legislation
1. Environment Protection Act 1991. Act V of 1991.
2. Filfla Nature Reserve Act, 1988. Act XV of 1988.

Secondary legislation
1. Fungus Rock (Il-Gebla tal-General) Nature Reserve Regulations, 1992. L.N. 22 of 1992.
2. Selmunett Islands (St. Paul's Islands) Nature Reserve Regulations, 1993. LN. 25 if 1993.
3. Reptiles (Protection) Regulations, 1992. L.N. 76 of 1992.
4. Marine Mammals (Protection) Regulations, 1992 LN. 77 of 1992 (as amended)
5. Flora and Fauna Protection Regulations, 1993. 49 of 1993. (as amended)
6. Trade in Species of Fauna and Flora Regulations 1992. L.N. 19 of 1992 (as amended).

Status of signature/ratification of the relevant international agreements:

The various international agreement regarding the protection of sites and species to which Malta is a party are:
a) *Ramsar* – Convention of Wetlands of International Importance. Acceded on 19th August 1988.
b) *CITES – Convention on International Trade in endangered Species of wild fauna and flora*. Acceded on 17th April 1989
c) *Bern* – Convention on the Conservation of European Wildlife and Natural Habitats was acceded to by Malta on the 26th November, 1993
d) *Special protected areas of Biological Diversity and Mediterranean Importance*. Ratification on 22nd October, 1999.
e) *BONN* – Convention for the Conservation of Migratory Species acceded by Malta on the 22nd October 1999.
f) *ACCOBAMS* – Agreement on the Conservation of Cetaceans of the Baltic Sea, the Atlantic and the Mediterranean Sea – acceded by Malta on 22nd October 1999.
g) *BATS* – Agreement on the Conservation of European Bats – accede by Malta on the 22nd October 1999.
h) *RIO* – Biological Diversity Convention – ratified by Malta in December 2000.

Marine and coastal protected areas (new development 1999, 2000, 2001)

Protected marine and coastal species of fauna and flora:

REPTILIA		
Dermochelys coriacea	leatherback turtle	Fekruna sewda
Caretta caretta	Loggerhead turtle	Fekruna komuni
Chelonia mydas	Green turtle	Fekruna hadra
CETACEA		
Balaenoptera acutorostrata	Minke whale	
Balaenoptera borealis	Sei whale	
Balaenoptera physalus	Fin whale	
Delphinus delphis	Delfin	
Globicelphala melas	Long-fined pilot whale	
Grampus griseus	Risso's dolphin	
Kigia simus	Dwarf sperm whale	
Megaptera novaeangliiae	Humpback whale	
Mesoplodon densirostris	Blainville's beaked whale	
Orcinus orca	Killer whale	
Physter macrocephalus	Sperm whale	
Pseudorca crassidens	False killer whale	
Sousa chinensis	Indo-pacific humpback dolphin	
Stenella coeruleobla	Striped dolphin	
Steno bredanensis	Rough toothed dolphin	
Tursiops truncatus	Bottlenose dolphin	
Ziphius cavirostris	Cuvier's beaked whale	
Phocoena phocoena	Common porpoise	
PINNIPEDIA		
Monachus monachus	Mediterranean Monk Seal	
FUCHOPHYTA		
Cystoseira amentacea s.l.	Rainbow Blade-weed	Cistosejra kahla
Cystpseira mediterranean	Sea-Fir	Cistosejra
Cystoseira sponosa s.l.	Sea Fir	Cistosejra
Cystoseira zosteroides	Sea-Fir	Cistosejra
RHODOPHYTA		
Goniolithon byssoides	Stone- weed	Litofillum
Lithophyllum lichenoides	Stone-weed	Litofillum
PORIFERA		
Petrobiona massiliana	Sponge	Sponza iebsa
CNIDARIA		
Antipathes spp.	Black coral	Qroll Iswed
Astoides calycularis	Star-coral	Qroll-tad-dell
Cladocora caespitosa	Stone coral/white Coral	Qroll abjad
Corallium rubrum	Red Coral	Qroll ahmar
MOLLUSCA		
Charonia rubicunda	Knobbed triton-shell	Bronja tal-fond
Charonia tritonis	Variegated triton-shell	Bronja tal-midhna
Dendropoma petraeum	Vermetid snail	Bebbuxu tal-blat
Erosaria spurca	Spotted Cowrie	Bahbuha ttigrata
Gibbula nivosa	Maltese Top-shell	Gibbnula ta' Malta
Lithophaga lithophaga	Date mussel	Tamra
Luria lurida	Borwn Cowrie	Bahbuba tal-ghajnejn
Mitra zonata	Fusiform mitre	Sigarru
Pholas dactylus	Common piddock	Tamra bajda
Pinna nobilis	Noble-pen-shell	Nakkra tal-ghajnejn
Ranella olearia	Oil Vessel triton	Bronja
Schilderia achatidea	Agate fowrie	Bahbuha
Tonna galea	Giant tun	Tina tal-bahar
Zonaria pyrum	Pear Cowrie	Bahbuha Hamra

ECHINODERMATA		
Centrostephanus longispinus	Needle-spined sea-urchin	Rizza tax-Xewk Twal
Ophidiaster ophidianus	Violet starfish	Salib il-bahar hamra
ELASMOBRANCHII		
Carcharodon carcharias	Great White Shark	Kelb il-bahar
Cetorhinus maximus	Basking shark	Pixxitonnu
Mobula mobular	Devil Ray	Raja tal-qrun
ACTINOPTERYGII		
Alphanius fasiatus	Maltese Killifish	Buzzaqq
Hippocampus hippocampus	Shiort-nosed sea horse	Ziemel tal-bahar
Hippocampus ramulosus	Long-nosed sea horse	Ziemel tal-bahar

Implementation of national biodiversity strategy and action plans with regards to the Mediterranean coastal zone:

Observation / studies about alien species strategy in the Mediterranean coastal zone:

One day seminar held and proceedings published.

List of country and/or Mediterranean endemic species (if available for the country)

As per attached list.

Activities undertaken in the framework for the implementation of:

1. Action Plan for the Management of the Mediterranean Monk Seal

   Legally protected
   Educational poster depicting monk seal
   Very rare species does not breed in the Maltese Islands.

2. Action Plans for the conservation of Mediterranean marine turtles:

   Legally protected
   A code of practice for marine turtles accidentally caught is being drawn up.
   Education poster depicting the three species of marine turtles recorded in the Maltese territorial waters.

3. Action Plan for the Conservation of Cetaceans in the Mediterranean Sea

   Legally protected
   A seminar on cetacean stranding has been organised and the proceedings were published
   A protocol for cetacean stranding has been drawn up.

4. Action Plan for the conservation of Marine Vegetation in the Mediterranean Sea

   A one day seminar on marine life has been organised
   Poster published
   Proceedings will be published
   A number of species have been protected.

Activities related to the inventories (competed or ongoing) of sites using the Standard Data-Entry Form (SDF) for national inventories of natural sites of conservation interest

Preparations are under way for undertaking such activities.

Collaborative activities undertaken within the framework of the implementation of the Protocol and/or Action Plans, especially at bilateral or sub-regional levels.

National seminar on public awardees of the marine environment
A number of species were legally protected
A poster depicting protected species was published
Proceedings and papers of the seminar to be published in the future
A state of the environment report has been published.

Endemic marine species to the Maltese Islands

Gibbula nivosa The Maltese top shell is at present the only endemic marine species of the Maltese islands however it is quite rare since live specimens have not been found for some years now (live young specimens last found in 1981 – Sant pers. Comm.). Although this may be due to lack of knowledge on its biology.

List of Mediterranean marine species, which are present in the Maltese Islands

Lithophyllum lichenoides
In the country it is quite rare ans patchily distributed (in the form of small cushions) found in Ghar Lapse (Malta) located in the South west of Malta and Wlendi (Gozo) (Schembri, 1994). However, in Ghar Lapsi as confirmed by C. Mifsud (Pers. Comm.) only small cushions of this species are present.

Posidonia oceanica Present quite abundantly in Malta where reach dephts of even 43-44 mts (spare meadows).

Cystoseira
Cystoseira have a high endemism out of the 20 endemic species, which are present in the Mediterranean (Giaccone 1991) the species present in the Maltese Islands are (Mifsud 1995 and 2000) (see below Fucophyceae):
Cystoseira spinosa, Cystoseira zosteroides, Cystoseira amentacea, Cystoseria brachycarpa, Cystoseira barbata, Cystoseira schiffneri, Cystoseira crinita, Cystoseira sussanensis (identification – Giaccone)*, Cystoseira barbatula, Cystoseira squarrosa, Cystoseira dubia, Cystoseira corniculata.*

Floristic List

Rhodophyta

1. *Acrodiscus vidovichii*
2. *acrosorium venulosum*
3. *aglaothamnion tenuissimum*
4. *Alsidium helminthochroton*
5. *Anothrichium tenue*
6. *Ceramium bertholdii*
7. *Ceramium giacconei*
8. *Chondria boryana*
9. *Chondria mairei*
10. *Chylocladia pelagosae*
11. *Contarinia peyssonneliaeformis*
12. *Contarinia squamariae*
13. *Cryptonemia tunaeformis*
14. *Erythrocystis montagnei*
15. *Feldamannophycus rayssiae*
16. *Gastroclonium clavatum*
17. *Gelidium spinosum*
18. *Halodictyon mirabile*
19. *Laurencia minuta spp. Scammaccae*
20. *Lithphyllum byssoides*
21. *Lithphyllum frondosum*
22. *Lithophyllum minerveae*
23. *Lithophyllum racemus*
24. *Lomentaria chlocladiella*
25. *Lomentaria clavaeformis*
26. *Mesophyllum alternans*
27. *Peyssonnelia bornetti*
28. *Peyssonnelia crispata*
29. *Peyssonnelia rosa-marina*
30. *Peyssonnelia squamaria*
31. *Poysiphonia banyulensis*
32. *Poysiphona dichotoma*
33. *Rhodymenia ligulata*
34. *Rpdriguezella pinnata*
35. *Spermothamnion flabellatum*
36. *Sporolithon ptychoides*

Fucophceae

37. *Cladosiphon cylindrcus*
38. *Cystoseira amentacea*
39. *Cystoseira barbata*
40. *Cystoseira barbatula*
41. *Cystoseira brachycarpa*
42. *Cystoseira crinita*
43. *Cystoseira dubia*
44. *Cystoseira elegans*
45. *Cystoseira jabukae*
46. *Cystoseira schiffneri*
47. *Cystoseira spinosa s.l.*
48. *Cystoseira squarrosa*
49. *Cystoseira zosteroides*
50. *Dictyota mediterranea*
51. *Discosporangium mesarthocapum*
52. *Nemacystus flexuosus*

Chloropyceae

53. Bryopsis corymbosa
54. Bryospis muscosa
55. Microdictyon tenuius

Of the fauna only a few selected familiar species are given since for exempla Mediterranean molluscs present in Malta would be an endless list.

Gorfonians
Euniocella singularis
Cladocora caespitosa
Astroides calycularis

Molluscs
Haliotis lamellosa
Luria lurida
Chiton olivaceus
Fasciolaria liganaria
Buccinulum corneum
Discodoris atromaculata
Pinna nobilis

Crustacea
Dardanus arrosor

Bryozoans
Myriapora truncata
Electra posidoniae

Crinoids
Antedon mediterranea

Echinoidea
Psammechinus microtuberculatus

PRINCIPAUTÉ DE MONACO

Rapport National
sur la Conservation des sites naturels et des espèces

1. Cadre institutionnel:

En Principauté, les questions internationales touchant à l'environnement sont traitées par une entité chargée de la Coopération Internationale Environnement - Développement. Au niveau national, la protection de la Biodiversité est placée sous l'autorité du Département des Travaux Publics et Affaires Sociales et sa mise en œuvre dépend de la Direction de l'Environnement, de l'Urbanisme et de la Construction.

2. Cadre juridique.

Les ressources naturelles maritimes font partie du domaine public de l'Etat. La protection de la faune et de la flore marines est prévue par l'Ordonnance Souveraine du 2 Juillet 1908 telle que modifiée par les Ordonnances ultérieures (en 1978, 1986, 1992 et 1993). Ce texte régit notamment les réserves marines, les espèces marines protégées et les engins et pratiques de pêche prohibée.

L'Ordonnance Souveraine du 15 février 1993 amendant l'Ordonnance du 2 juillet 1908 ajoute de nouvelles dispositions sur les filets "maillants dérivants" ou "chaluts pélagiques" dont l'usage, la tentative et la complicité d'usage sont prohibés". Sont aussi réglementés l'abandon ou la perte des engins de pêche avec obligation de le signaler ou d'en signaler la présence au Service de la Marine, et de les récupérer rapidement.

Depuis 1998, un Code de la Mer a été publié. Son Livre II, Titre III couvre la protection de la Biodiversité. Pour le mettre en œuvre, des textes d'application sont nécessaires. Ceux destinés à la protection de la biodiversité sont en cours de réalisation.

Une Loi cadre pour l'Environnement est en cours de préparation. Il est prévu qu'elle couvre les domaines terrestre et marin.

3. Statut des signatures/ratifications des accords internationaux pertinents.

La Principauté de Monaco est Partie à la plupart des Conventions internationales relatives à la protection de la flore et de la faune sauvage et de ses habitats naturels dont la liste se trouve en annexe.

Elle a adopté les amendements à la Convention de Barcelone et les amendements à ses Protocoles et ratifié le nouveau Protocole pour les Aires Spécialement Protégées et la Biodiversité en Méditerranée.

Sur le plan sous-régional, la Principauté abrite le Secrétariat de l'Accord RAMOGE entre la France, l'Italie et Monaco. Au-delà de son objet initial, la pollution marine, cet Accord se préoccupe des modalités de protection des sites et des espèces et s'intéresse également aux diverses zones recelant un patrimoine important pour la gestion de la biodiversité régionale.

La Principauté a signé et ratifié l'Accord sur la Conservation des Cétacés de la mer Noire, de la Méditerranée et des eaux Atlantiques Adjacentes (ACCOBAMS) qui entrera en vigueur le 1er juin 2001. Elle en est le dépositaire et abrite son Secrétariat intérimaire.

4. Les aires protégées marines et côtières (nouveau développement 1999, 2000, 2001).

Le **Sanctuaire franco-italo-monégasque**, établi par un Accord tripartite entre les trois Gouvernements signé, à Rome, le 25 novembre 1999, couvre 87 000 km² dans le bassin tyrrhénéo-corso-provençal, incluant les eaux littorales et le domaine pélagique de la zone.
Le texte de l'Accord est déposé en Principauté de Monaco.

C'est dans ce vaste domaine que les Cétacés, objet principal de la protection de cette aire, développent toute leur diversité. Totalement pélagiques pour certains, liés au talus continental ou aux profonds canyons de la zone pour d'autres, ils représentent 12 espèces différentes et des populations allant de plusieurs dizaines de milliers d'individus, pour certains dauphins, à un millier

d'individus, pour le rorqual commun (espèce emblématique de la zone).

Si les Cétacés sont particulièrement visés par les mesures de protection il est indéniable que d'autres grands groupes zoologiques profitent des mesures de conservation tout au long de la chaîne trophique. Ces espèces seront l'objet d'une attention particulière des chercheurs et il est vraisemblable que pour d'autres espèces ou groupes d'espèces remarquables (oiseaux, grands céphalopodes et sélaciens pélagiques, …) le Sanctuaire présentera une opportunité pour la mise en œuvre d'autres mesures de conservation.

L'Accord portant création de la zone, vise la coordination entre les trois pays pour la mise en œuvre des mesures concertées destinées à atténuer les menaces qui pèsent sur les Cétacés et à rechercher la collaboration des pays tiers méditerranéens ou extérieurs.

L'Accord vise explicitement la présentation commune du Sanctuaire à l'inscription sur la liste des ASPIM. Cette présentation est particulièrement motivée par l'absence de Zone Économique Exclusive en Méditerranée ne permettant pas aux États riverains de remplir facilement leurs obligations de conservation des ressources marines. Cette inscription apportera une tangible contribution aux efforts décidés en commun par les trois signataires de l'Accord.

Les aires protégées au niveau national.

Hormis les Réserves marines du Larvotto et du Tombant des Spélughes qui ont été créés bien avant 1999 (respectivement 1978 et 1986), dans le cadre des actions de conservation pour la biodiversité de l'Accord RAMOGE, une liste de zones méritant protection ont été identifiées; parmi elles, le Rocher Saint Nicolas de la Principauté, caractéristique du peuplement coralligène.

5. Les espèces (faune et flore) marines et côtières protégées.

Au niveau international, la Principauté est Partie aux Conventions de Berne, Bonn et Barcelone.
Au niveau national, des Ordonnances souveraines protègent deux espèces de poissons (Mérou et Corb) et toutes les espèces de Cétacés.
Bien que la flore marine soit en attente d'un texte spécifique de protection, la zone protégée du Larvotto aboutit au même résultat car il inclut la totalité de l'unique herbier de la Principauté.

6. Mise en œuvre de la stratégie nationale pour la biodiversité et des plans d'action pertinents pour la biodiversité et des plans d'action pertinents pour la zone côtière méditerranéenne.

Une stratégie nationale fondée sur les inventaires du milieu marin et du milieu terrestre a été élaborée et devrait servir de cadre aux actions des services administratifs.
Un ouvrage de sensibilisation accompagné d'un CD ROM sur la « diversité biologique et paysagère de la Principauté de Monaco et de son bassin versant » destiné tant au grand public qu'aux naturalistes a été publié récemment. Cet ouvrage couvre essentiellement le domaine terrestre et vise « l'explication » du paysage local.

7. Observations/études sur les espèces non indigènes signalées dans la zone côtière méditerranéenne.

Le littoral monégasque contient un peuplement, par endroit, très dense, de *Caulerpa taxifolia.*
Un inventaire détaillé de la flore marine a mis en évidence la présence d'autres algues exotiques qui, cependant, n'ont pas un caractère invasif.
Un programme d'observation sur le développement de *Caulerpa taxifolia* et la présence éventuelle de *Caulerpa racemosa,* est en place depuis plusieurs années, et prévoit une campagne cette année.
Une cartographie détaillée des formations sédimentaires et des biocénos benthiques a été publiée en collaboration avec l'IFREMER (échelle 1/7500).Elle couvre tout le littoral de la Principauté et la partie du littoral français compris entre Monaco et la frontière italienne. Les populations végétales, dont la *Caulerpa taxifolia*, y sont clairement représentés.

8. Liste des espèces endémiques.

Dans le domaine marin, en 1992, un inventaire cartographique avait été établi.
Il faisait suite à des travaux de cartographie des formations superficielles (au sonar latéral), tous deux devant servir de base aux études d'impact préalables à tous travaux de construction sur le

littoral.
L'inventaire cartographique a permis de quantifier la présence d'habitats connus pour abriter des espèces sensibles et importantes pour leur conservation.
Sur la base de ce travail, il a été décidé de consacrer le programme d'inventaire annuel à un ou deux groupes taxonomiques selon les disponibilités des spécialistes en la matière.

Les inventaires réalisés en Principauté ont été les suivants :

septembre 1996 à février 1998 : inventaire de la macro flore marine
mars à octobre 1997 : inventaire de la faune Ichtyologique
septembre 1998 à mars 1999 : inventaire des Cnidaires et Echinodermes
juin à septembre 1999 : inventaire des Spongiaires

Diverses observations comprises entre 1997 et 1999 ont donné lieu à un recensement des espèces patrimoniales.
Un recensement des espèces déterminantes de Mollusques, Crustacés, Bryozoaires et Ascidies a été réalisé de juin à septembre 1999.
Dans tous les groupes, des espèces significatives ont été inventoriées. Ces espèces font plus particulièrement l'objet de deux Conventions :

- celle de Barcelone dont le Protocole sur la diversité biologique liste, dans les annexes dites de « Monaco », les espèces à protéger et celles dont l'exploitation doit être réglementée, et
- la Convention de Berne, amendée en 1996 sur proposition de la Principauté afin d'y inclure les espèces de la Convention de Barcelone.

Cet amendement avait pour objectif de faire bénéficier à ces espèces des mesures juridiques particulièrement contraignantes de la Convention de Berne.

Espèces endémiques du pays ou de la Méditerranée:
A l'issue de ces inventaires, une liste d'espèces patrimoniales a été réalisée. (cf. annexes)
Les espèces inventoriées ont été comparées à celle inscrites dans les annexes du Protocole relatif aux aires spécialement protégées et à la diversité biologique en Méditerranée (Protocole ASPIM). (cf. annexes).
Il n'y a pas d'espèce endémique à l'échelle de la Principauté.
Les espèces endémiques de Méditerranée, présentes en Principauté, ont été identifiées uniquement pour les Cnidaires, les Echinodermes et les Poissons. (cf annexes)
Dans le cas des macrophytes, les résultats de l'inventaire n'ont pas été exploités en ce sens. (hormis la Posidonie).

9. Activités dans le cadre de la mise oeuvre des Plans d'action.

a) Plan d'action pour la Conservation des Cétacés en mer Méditerranée :

Législation :

- La Principauté de Monaco est Partie à l'Accord ACCOBAMS et à l'Accord relatif à la création, en méditerranée, d'un Sanctuaire pour les mammifères marins.

Sa législation nationale protège les mammifères marins des captures, de la chasse, du harcelement. En cas de prise accidentelle, ces animaux devront être immédiatement relachés dans des conditions propres à assurer leur survie.
L'usage, la tentative et la complicité d'usage sont prohibés. Sont aussi réglementés l'abandon ou la perte des engins de pêche avec obligation d'en signaler la présence et de les récupérer rapidement.

Gestion :

- Dans le cadre de la mise œuvre du Sanctuaire, un groupe de scientifiques appartenant aux 3 pays signataires de l'Accord a élaboré un avant programme d'actions de conservation.

En début d'année, un questionnaire sur les activités de recherche en mer dans l'aire géographique du Sanctuaire a été distribué par les 3 pays ; la compilation des réponses permettra d'élaborer un inventaire de ces activités.
Un second questionnaire relatif aux activités de Whale watching est en cours de préparation ainsi qu'un code de conduite visant cette activité.

Les 3 pays ont joint leurs efforts pour présenter la candidature du Sanctuaire à la liste des ASPIM.

Sensibilisation/éducation :

- Des activités de sensibilisation sont menées dans le cadre du Musée Océanographique au travers de prises de vues sur la biodiversité pélagique, réalisées au large de la Pricipauté.
- Dans le cadre de la préparation à la première réunion des Parties à l'ACCOBAMS, la Principauté de Monaco s'est rapprochée d'experts en cétologie de Méditerranée et de mer Noire pour l'élaboration de documents scientifiques. Parmi ses documents, un Protocole commun Méditerranée mer Noire sur les mécanismes à mettre en œuvre en cas d'échouage de cétacés et une stratégie de gestion des données d'observations seront établie en étroite collaboration avec le CAR/ASP.

b) Plan d'action sur la végétation marine :

- Un inventaire des macrophytes a été réalisé en 1998.

L'herbier de Posidonie est protégé au travers de son inclusion dans une zone bénéficiant de protection totale.

- Des actions de sensibilisation sont menées par l'Assiociation pour la Protection de la Nature, ONG monégasque chargée de la gestion de cette aire protégée.
- Dans le cadre des activités RAMOGE, la Principauté participe à une action d'harmonisation de la cartogarphie des herbiers de la zone concernée et à l'élargissement d'un réseau existant déjà en France.

Au sein de ce même Accord, un partenariat de mise en œuvre du plan d'action pour la conservation de la végétation marine a été instauré avec le Centre des ASP.

c) Plans d'action sur la conservation des phoques moines et des tortues marines :

Ces deux espèces ne concernent pas les actions nationales mais font partie des préoccupations internationale de la Principauté.

10. Activités d'inventaires de sites utilisant le Format Standard des Données (FSD) pour les inventaires nationaux des sites naturels d'intérêt pour la conservation.

La Principauté a réalisé les inventaires des groupes taxonomiques principaux avant la mise en œuvre du FSD ; mais au travers des travaux réalisés dans le cadre de l'Accord RAMOGE, elle a participé à la finalisation de cet outil.

11. Activités de collaboration entreprises dans le cade de la mise en œuvre du Protocole et/ou des plans d'action, spécialement aux niveaux national et sous-régional.

(Voir supra points 5, 9b, 10)

- Dans le cadre de ses programmes de coopération bilatérale, la Principauté de Monaco en collaboration avec le CAR/ASP, a apporté un soutien financier et son expertise à la réalisation d'un programme de collecte de données sur les biotopes marins du Parc national de Mljet en Croatie.

Ce parc comporte une partie marine composée de deux lacs isolés de la mer Adriatique environnante qui abritent une flore et une faune Méditerranéenne très peu étudiée où des espèces endémiques ont été décrites.

Cette étude, qui devrait s'étendre sur un an, est réalisée par l'Institut Océanographique de Dubrovnik.

Elle a pour principaux objectifs :

- l'analyse des paramètres physico-chimiques de la partie marine du Parc National,
- la réalisation d'un inventaire des espèces présentes sur le site,
- la mise en œuvre d'un programme pour la conservation de ce site.

- La Principauté de Monaco a mis à disposition du CAR/ASP pendant les années 1999 et 2000 un jeune diplômé monégasque (DESS gestion de la Planète) : M. Frédéric PLATINI.

Pendant ces deux années, il a contribué aux activités du Centre dans la mise en œuvre du Protocole ASPIM.

MC. Van Klaveren
Chef de Division du Patrimoine Naturel
de la Principauté de Monaco

Slovenia

ROBERT TURK, NFP FOR SPA, REGIONAL INSTITUTE FOR THE CONSERVATION OF NATURAL AND CULTURAL HERITAGE PIRAN

INSTITUTIONAL FRAMEWORK

The follow up and the implementation of the Protocol on Specially Protected Areas and Biological Diversity in the Mediterranean is entrusted to the Regional Institute for the Conservation of Natural and Cultural Heritage Piran from 1994. According to an agreement between the Ministry of Environment and the Institute from March 2001, a special position is foreseen for the NFP for SPA with summer 2001. The new arrangement would allow greater efficiency in performing the tasks needed for a better implementation of the SPA Protocol and its Action Plans.

At the moment the Action Plans are carried out by the Institute in collaboration with the Piran Aquarium for the Mediterranean marine turtles and with the Adriatic Project, an NGO for the Cetaceans. There is no formal arrangement for the follow up of the Marine vegetation Action Plan however it is supposed to be entrusted to the Marine Biological Station..

LEGAL FRAMEWORK

Following the guidelines of the Rio Convention on Biodiversity and taking into account the need for efficient implementation mechanisms for nature protection, the Slovenian parliament adopted in June 1999 the Nature Conservation Act (Uff. Boll. No. 56/1999) that replaced and upgraded the Natural And Cultural Heritage Act. The Nature Conservation Act thus among other issues includes provisions on:
- biodiversity conservation (plant and animal species, genetic material, ecosystems),
- the protection of valuable natural features,
- nature protection guidelines which have to be taken into account in physical planning, the use of a natural asset and the protection of cultural heritage,
- permits for activities affecting nature and nature protection consents.

All protected areas and areas declared by the previous law as simply natural heritage, are in the Nature Conservation Act gathered under the term *valuable natural features*. Concerning their protection the Nature Conservation Act defines:
- the acquisition of status (national or local importance),
- measures for the protection of valuable natural features (substitute state action, contract on protection, contract of stewardship, protection, temporary protection, restrictions of activities or use, restoration, right of pre-emption, restrictions on legal transactions, expropriation, property right restrictions and compensation, compensation for damage caused by animals of protected species),
- protected areas and their management (natural monuments, strict nature reserves, nature reserves, national, regional and landscape parks),
- minerals and fossils (definition and ownership, protection, finds, exploration, export),
- endangered plant and animal species (determination of endangerment, measures of protection).

One of the most important tools provided by the Nature Conservation Act is the obligatory acquisition and inclusion of nature protection guidelines in physical plans and documents and plans for the use of a natural asset. The inclusion and especially the consideration of the nature protection guidelines is the condition for issuing the nature protection consent to further activities based on the above-mentioned plans and documents.

SIGNATURE / RATIFICATION OF THE RELEVANT INTERNATIONAL AGREEMENTS

The Protocol Concerning Mediterranean Specially Protected Areas was ratified by the former Yugoslav Parliament in 1985. The act on succession of the Barcelona Convention and its Protocols was adopted by the Slovene Parliament in 1993. Slovenia has signed the final act on the adoption of the three Annexes to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean. In 1999 the Slovene Parliament ratified two important conventions – Bern and CITES.

The new Barcelona convention and the amendments to its Protocols are supposed to be ratified before summer 2001

MARINE AND COASTAL PROTECTED AREAS

The situation concerning marine and coastal protected areas is much the same as it was at the time of the Fourth Focal Points meeting. According to that, the protected areas are the following: Se ovlje salt-works landscape park, Ramsar site from 1993 (coastal - 864 ha), Cape Madona natural monument (marine - 12,8 ha), Strunjan Nature reserve (marine and coastal - 160 ha), Štjua lagoon (coastal - 15,3 ha), Debeli rti natural monument (marine and coastal - 24,3 ha). There is however a major change from the legal point of view. With the new Nature Conservation Act national importance is granted to all the marine and coastal protected areas. According to that, a new governmental decree is supposed to replace the existing municipal ones in the year 2002. With the new position for the NFP for SPA the activities for proper management of protected areas will be intensified.

PROTECTED MARINE SPECIES OF FAUNA AND FLORA

There are no major changes regarding protected marine species of fauna and flora comparing to what was reported at the fourth NFP meeting. The decree on endangered marine animal species that was adopted in 1993 is still in force. As reported previously it includes numerous animal marine species, among them also species listed in the Annexes II and III of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean.

A new governmental decree on protected plant species is foreseen in the near future. The decree will include also marine species listed in the Annexes to the SPA Protocol.

IMPLEMENTATION OF NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS WITH REGARD TO THE MEDITERRANEAN COASTAL ZONE

The coastal zone is properly included in the draft of the National biodiversity strategy and its Action Plans. The Strategy and its Action plans are supposed to be finalised by the end of the year 2001. Beside that we should mention that the sea will be

included in the state physical plan as one of the ecological important areas, which will be granted – according to the new Nature Protection Act – specially protection measures.

OBSERVATIONS / STUDIES ABOUT ALIEN SPECIES RECORDED IN THE MEDITERRANEAN COASTAL ZONE

There were no specific studies or observations, with alien species as target, in the Slovenian sea. There are however, data that will be presented together with the results of a five-year project on biodiversity in the Slovenian sea and coastal area, started in 1998.

Activities undertaken in the framework of the implementation of different Action Plans

Marine Turtles

Activities were up to now limited to gathering information's on turtles caught by fishermen, their tagging and release. The activities are carried out by the Piran Aquarium in collaboration with the Regional Institute for the Conservation of Natural and Cultural Heritage. The results of the last five years will be presented at the First Mediterranean Symposium on Marine Turtles.

Cetaceans

A successful awareness campaign was carried out in the year 2000 thanks to the financial support of the Regional Activity Centre for SPA. The activities included among other general information leaflets, information leaflets for yacht owners, newspaper articles and lectures in elementary and high schools.

Marine vegetation

There were up to now no activities concerning the Marine Vegetation Action Plan with the exception of a general overview of the vegetation in the Slovenian sea, presented at the first Mediterranean Symposium on marine vegetation in Ajaccio in autumn 2000.

The activities, undertaken within the framework of the action plans are not yet satisfactory, especially concerning the Marine vegetation Action Plan. The lack of activities is almost entirely due to the reorganisation of the field of nature protection in the last three years. The new arrangement about the SPA post at the Regional Institute for Natural and Cultural Heritage Conservation will greatly improve the possibilities of adequate actions concerning the Protocol and its Action Plans. The same goes for one of the most important tasks of the new Protocol that is the inventories of natural sites of conservation interest. Although most of the data are available, the work with inventories has not started yet.

In ending the report I would like to point our extremely good experience of collaboration with the Regional Activity Centre for Specially Protected Areas and thank them for the financial support that allowed us to carry out two important projects: the awareness campaign on the conservation of Cetaceans and the assessment of the status of the marine and coastal species listed in the Annexes to the new SPA Protocol.

**5th MEETING OF NATIONAL FOCAL POINTS
FOR SPECIALLY PROTECTED AREAS (MEDITERRANEAN ACTION PLAN) Valencia, 23-26 April 2001**

COUNTRY: **SPAIN**

AUTHOR OF THE REPORT:Mr. JAVIER PANTOJA
Directorate-General for Conservation of Nature. Ministry of Environment

BRIEF DESCRIPTION OF THE INSTITUTIONAL FRAMEWORK

The 1978 Spanish Constitution established a decentralised political and administrative structure within the Spanish Kingdom, and adopted a division of the Spanish territory into 17 Autonomous Regions and 2 Autonomous Cities. Aside from its other responsibilities, the Central Administration is also responsible for the national basic jurisdiction, including environmental laws, the adaptation of European jurisdiction and the fulfilment of international commitments, whereas the Autonomous Administrations can develop their own regulations, establish further protection measures and are also responsible for the management of natural resources.

Central Government
The Ministry of Environment was established in May 1996, and it brought together several departments that had previously been distributed throughout different Ministries. In relation with the conservation of species and habitats, the responsible institution is the Deputy Directorate-General for Conservation of Biodiversity, within the Directorate-General for Conservation of Nature. There is an autonomous institution called "National Parks" within this Ministry which cooperate with Regional Governments in National Parks management. Attached to this Ministry there is an "Advisory Council for the Environment", that includes representatives from the Autonomous and Central Governments, research institutions, trade unions and social stakeholders.

Regional Governments
The institutional organisation of the Autonomous Regions is not equitable. There is usually a Regional Ministry or Department, unified to various different degrees, that takes over most of the responsibilities that are related to the environment and nature preservation (Department of Environment, Agriculture, Territorial Policy…). The "Sectorial Conference of Environment" is the main agency for the inter-administration co-ordination and the unified action of Autonomous and Central Governments. There is also a "National Commission of Nature Protection" (established in 1989) that arranges coordination in the aforementioned matters within that Sectorial Conference.

BRIEF DESCRIPTION OF THE LEGAL FRAMEWORK GOVERNING THE CONSERVATION OF SPECIES AND SITES

The Law 4/1989 on "Preservation of Natural Areas and the Wild Flora and Fauna" defines the basic jurisdictional framework for the whole Spain in the sphere of nature preservation and natural resources management, as well as the distribution scheme of responsibilities between Central and Autonomous Governments. Many Autonomous Regions have developed the basic jurisdiction of the State or have adapted European Regulations directly, to the point of establishing measures that are even more protective than the National or European standards, and there is already a considerable body of territorial regulations on protected areas, recovery of species and natural resources management.

On the other hand, in 1995 a Royal Decree transferred to the Spanish legislation the European Habitats Directive 92/43/EEC. In 1999, The Spanish Official Journal published the ratification of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean.

It is important to highlight the fact that the 1995 Criminal Code establishes environmental crime patterns, including crimes against natural resources and the environment and crimes related to protection of flora and fauna.

List of main legal instruments about conservation of species and habitats

Law 4/1989, of 27 March, Preservation of Natural Areas and Wild Flora and Fauna. (BOE n. 74, 28/03/1989).
Law 40/1997 and Law 41/1997, of 5 November, reform of Law 4/1989 (BOE n. 266, 06//11/1997).
Royal Decree 1997/1995, of 7 December, measures settle down to contribute to protect biodiversity by means of conservation of natural habitats and wild fauna and flora (BOE n. 310, 28/12/1995 and BOE n. 129, 28/05/1996).
Royal Decree 1193/1998, of 12 June, reform of Royal Decree 1997/1995 (BOE n. 151, 25/06/1998).
Royal Decree 439/1990, of 30 March, the National Catalogue of Threatened Species is regulated (BOE n. 82, 05/04/1990).
Order of 9 July 1998, modification of the National Catalogue of Threatened Species (BOE n. 172, 20/07/1998

and BOE n. 191, 11/08/1998).

Order of 9 June 1999, modification of the National Catalogue of Threatened Species (BOE n. 148, 22/06/1999).

Order of 10 March 2000, modification of the National Catalogue of Threatened Species (BOE n, 72, 24/03/2000 and BOE n. 96, 21/04/2000).

STATUS OF SIGNATURE/RATIFICATION OF THE RELEVANT INTERNATIONAL AGREEMENTS (listed in order of date of ratification or acceptation):

1971 Convention of Open Seas, on fisheries and preservation of wildlife resources in open seas.
1975 Paris Convention, on the protection of Universal Patrimony.
1976 Barcelona Convention, related to the protection of the Marine Environment and the Coastal Region of the Mediterranean.
1982 Ramsar Convention, related to internationally important wetlands, specifically regarding waterfowl habitats.
1985 Bonn Convention, related to the preservation of wildlife migratory species.
1986 Washington Convention, related to International Trade of Wild Flora and Fauna Endangered Species (CITES).
1986 Bern Convention, related to Preservation of wildlife and natural environment in Europe.
1993 Convention on Biological Diversity.
1998 OSPAR Convention, related to the protection of the marine environment of the north-east Atlantic.
1998 Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Barcelona Convention).
1999 Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), Bonn Convention.
1999 Annex V, on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area (OSPAR Convention).

MARINE AND COASTAL PROTECTED AREAS (new development 1999, 2000, 2001)

The Directive 92/43/EEC about Habitats is the European Union's most direct contribution to the nature conservation, and, in particular, the Natura 2000 Network, which is one of its most advanced instruments to protect numerous marine and coastal areas. A list of 67 coastal and marine "Sites of Community Interest" in the Mediterranean Sea has been proposed to the European Commission to be declared as "Special Areas of Conservation", with a marine area of 360.000 Hectares.

In addition, thought they have not been considered in a strict point of view as protected areas, the Ministry of Agriculture, Food and Fisheries and Regional Governments has established since 1982 thirteen "Marine Reserves for Fisheries" created under the protection of fishing legislation, in the Mediterranean Sea. There are four new Marine Reserves for Fisheries from 1999 to 2001: one in Catalunya (Masía Blanca) and three in Balearic Islands (Norte de Menorca, S'Arenal-Cabo Regana and Freus de Ibiza y Formentera), with a total area of 21.163,5 Hectares.

PROTECTED MARINE AND COASTAL SPECIES OF FAUNA AND FLORA

Based on Law 4/1989, next marine species and populations are included in the National Catalogue of Threatened Species, depending of categories:

IN DANGER OF EXTINCTION
INVERTEBRATES
Patella candei candei, Palinurus echinatus, Patella ferruginea.
VERTEBRATES
Mammals: *Monachus monachus, Eubalaena glacialis.*

SENSITIVE TO CHANGE OF HABITAT
INVERTEBRATES
Asterina pancerii.
VERTEBRATES
Mammals: *Megaptera novaeangliae* (populations of Mediterranean Sea and peninsular Atlantic Ocean).

VULNERABLE
INVERTEBRATES
Pinna nobilis, Charonia lampas lampas, Dendropoma petraeum, Astroides calycularis.
VERTEBRATES
Fishes: *Chilomycterus atringa.*
Mammals: *Globicephala macrorhynchus* (population of Canary Islands), *Balaenoptera physalus, Balaenoptera musculus, Balaenoptera borealis, Balaenoptera acutorostrata, Physeter macrocephalus, Tursiops truncatus, Delphinus delphis* (population of Mediterranean Sea), *Phocoena phocoena.*

SPECIES AND POPULATIONS OF SPECIAL INTEREST

INVERTEBRATES
Centrostephanus longispinus.
VERTEBRATES
Reptiles: *Dermochelys coriacea, Caretta caretta, Chelonia mydas, Eretmochelys imbricata.*
Mammals: *Globicephala macrorhynchus* (populations of Mediterranean Sea and peninsular Atlantic Ocean), *Megaptera novaeangliae* (population of Canary Islands), *Kogia breviceps, Orcinus orca, Globicephala melas, Grampus griseus*, *Delphinus delphis* (population of Atlantic Ocean), *Stenella coeruleoalba.*

The Regional Authorities will carry out Conservation's Plans for each species according to Law 4/1989. Nowadays, the Ministry of Environment and Regional Governments are working on reviewing the Catalogue of marine flora and invertebrates threatened taxa.

IMPLEMENTATION OF NATIONAL BIODIVERSITY STRATEGY AND ACTION PLANS WITH REGARD TO THE MEDITERRANEAN COASTAL ZONE

The *Spanish Strategy for the Conservation and Sustainable Use of Biological Diversity* was presented in March 1999. Regional Governments are free to implement the National Strategy directly or to draw up their own strategies designed to address local needs. It is to be hoped that the National Strategy will contribute to stimulate the process and to minimise the current gaps existing between some autonomous regions in regards to others in the rate of progress being made on environmental issues.

Plans for Sustainable Development in Productive Sectors

The Spanish Strategy aims to be the base on the one action plans must be built on. These action plans must carry out the principles and objectives of the Convention on Biological Diversity in different social sectors. For this purpose, it indicates those sectors whose performances have a negative repercussion in biodiversity conservation. For these sectors, plans should be draft to collect the concrete measures to be implemented in order to minimize or eliminate those negative impacts. These sectors are agriculture, forestry, fishing and acuiculture, game and fisheries, energy, tourism, industry, land use planning, transport, hydrological policy, public health and trade. Drafts for all them are available at this moment, and it is intended to submit them in the future to a public participation process to arise the definitive plans. This process will be implemented beginning with tourism, agriculture and transport sectors.

OBSERVATION/STUDIES ABOUT ALIEN SPECIES RECORDED IN THE MEDITERRANEAN COASTAL ZONE

The Directorate-General for Fisheries of the Balearic Regional Government has been implementing a programme that targets *Caulerpa taxifolia.* The basic aims are to control the known stands and keep the coastline under surveillance in order, as far as possible, to detect new stands of this and other species of exotic algae along the Balearic Island coasts. Accepting that it would be impossible to achieve total eradication, the basic aim of the eradication efforts changed to slowing down the alga's progress towards the outer part of the coves. On the other hand, the Authorities of Comunidad Valenciana maintains a net of surveillance along the whole coast of Valencia, Alicante and Castellón, in order to eradicate some population of the *Caulerpa* species that could appear in a future.

LIST OF COUNTRY AND/OR MEDITERRANEAN ENDEMIC SPECIES (IF AVAILABLE FOR THE COUNTRY)

Red Books contain a lot of information about conservation status of many species, but more information is needed about some taxonomic groups like marine invertebrates to establish a list of Spanish or Mediterranean endemic species.

ACTIVITIES UNDERTAKEN IN THE FRAMEWORK OF THE IMPLEMENTATION OF:

a) ACTION PLAN FOR THE MANAGEMENT OF THE MEDITERRANEAN MONK SEAL

Monk Seal is extinct since 50s in Spanish waters, although there are references, mainly in Chafarinas Islands, coming from north-African populations. Nowadays, there are some potential habitats for a possible recolonization (Archipiélago de Cabrera N.P., Columbretes Islands Nat. Reserve and Alborán Island). The greatest number of Marine Reserves for Fisheries and marine Sites of Community Importance will increase the quality of habitat available for the species. Spanish efforts are directed towards Atlantic populations.

b) ACTION PLAN FOR THE CONSERVATION OF MEDITERRANEAN MARINE TURTLES

In Spain there is a recovery centers network, supported by Regional Authorities and NGOs, where marine turtles are taken in, treaten and returned to the sea. Also these places carry out an important work in awareness information.

The Ministry of Environment and Regional Governments are carrying out a programme on co-ordination of marked marine turtles in Spanish coasts. A plan aimed at working together and developing a standard mark and methodology accepted for all investigation groups working in this issue.

c) ACTION PLAN FOR THE CONSERVATION OF CETACEANS IN THE MEDITERRANEAN SEA

The Spanish Cetacean Society, with the support of the Ministry of Environment, has carried out a database on Recovery Centers, research Institutions and activities about marine turtles and cetaceans in Spain, as well as some protocols to coordinate and harmonize the collection of data about these species. During this meeting, it will be presented by the University of Valencia the Spanish proposal for the creation and maintenance of a database of cetaceans strandings of the whole Mediterranean, with the support of the Ministry of Environment.

An important project to identify Areas of Special Interest for cetaceans in Spanish Mediterranean coasts is also being carried out by Universities of Barcelona, Valencia and Madrid, with technical and economic support of the Ministry of Environment. It will be concluded next year.

Nowadays is in progress a project on conservation of bottlenose dolphin (*Tursiops truncatus*) that is studying the populations of the species and its interaction with fishing resources, and will take steps to ensure the conservation of Spanish populations.

The impact generated by fast ferries on populations of cetaceans in the Strait of Gibraltar and Canary Islands has also been studied, concerning collisions with ships and “deafness” of species due to the maritime traffic. On the other hand, National and Regional Authorities are working jointly on a legislation establishing measures for conservation of cetaceans that will approve an Ethic Code to regulate the activities that could cause them problems or nuisances, specially the whale-watching tourism.

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

Ministry of Environment and Regional Governments are working on surveillance and eradication of colonies of invasive species like *Caulerpa taxifolia*, as well as on the inclusion in the National Catalogue of Threatened Species of several species and populations, in order to elaborate Conservation Plans for these species*. Posidonia oceanica* meadows are including in Natura 2000 network.

ACTIVITIES RELATED TO THE INVENTORIES (COMPLETED OR ONGOING) OF SITES USING THE STANDARD DATA-ENTRY FORM (SDF) FOR NATIONAL INVENTORIES OF NATURAL SITES OF CONSERVATION INTEREST

The National Inventories of Cetacean Species and Habitats of the European Directive 92/43/EEC have been carried out. The Atlas of Habitats (the rest of the Spanish habitats not included in the European Directive 92/43/EEC), Atlas of Amphibious and Reptiles and the Inventory of Birds and Mammals will be drawn up at an early date. The Ministry of Environment is working now (with Regional Governments) in finalisation of Natura 2000 Network (National inventory of natural sites for European Union) using the Natura 2000 Form. Using those Atlas and Natura 2000 Form, Authorities will fill in the SDF for National Inventory in a future date.

COLLABORATIVE ACTIVITIES UNDERTAKEN WITHIN THE FRAMEWORK OF THE IMPLEMENTATION OF THE PROTOCOL AND/OR THE ACTION PLANS, ESPECIALLY AT BILATERAL OR SUB-REGIONAL LEVELS

No activities have been realized until now in the framework of the implementation of the Protocol in a regional or internation level. However, in the next future, an important cooperation program will be implemented for the Mediterranean basin by the Ministry of Foreign Affairs, giving new opportunities for future cooperation with other countries.

Syrian Arab Republic
Biological Diversity and Protected Areas Department
Natural Resources Management
Ministry of State for Environmental Affairs

Institutional framework:

Throughout the past 15 years Syria has paid increasing attention to Environmental issues, so that, Syria began formulating the national environmental institutions responsible for Environmental Affairs, in coordination and cooperation with other National Ministries, institutions, and organizations.
These institutions are:

1- Supreme Council for Environmental Safety

The Council is the highest national authority on environmental matters in general. It is headed by the Prime Minister and composed of 12 Ministers representing those Government Ministries with environmental concerns.

2- General Commission for Environmental Affairs

In 1991, a Presidential Decree established the General Commission for Environmental Affairs (GCEA), which is responsible for coordination among the different Ministries in all matters concerning the environment. The GCEA is under the direction of the Minister of State for Environmental Affairs and has the mandate to:
One) Define environmental problems and propose solutions,
Two) Prepare draft legislation for the protection of the environment,
Three) Raise public awareness,
Four) Monitor environmental problems,
Five) Review international agreements and
Six) Provide recommendations to Government

3- Ministry of State for Environmental Affairs

The Ministry of State for Environmental Affairs (MSE) is the lead Ministry in the Government on all matters relating to the Environment and is in charge of policy formulation, inter-sectoral coordination and regulatory and research functions.

National Biodiversity and Protected Areas Unit (NBU):
NBU situated in the MSE, was established in 1996 to take responsibility for the Issues related the Biodiversity and as the National focal points of the Biodiversity convention.
The mains activities were:
1- Preparation of the Biodiversity Country Study.
2- Preparation of the National Biodiversity Strategy and Action Plan.

The NBU is expected to play an important role in the development of a comprehensive system of protected areas in Syria.

The other institutions in Syria which have undertaken duties and responsibilities for the protection of aquatic life are:

1- Ministry of Agriculture and Agrarian Reform (MAAR)
2- Ministry of Irrigation
3- Ministry of Interior and Ministry of Local Administration
4- Ministry of Planning
5- Ministry of Trade

Legal framework:

The main laws related to marine protection are:
1- Presidential Law No.30(1964): protection , regulation the fishing of the aquatic species in marine waters.
2- Presidential Decree (1991): established the General Commission for Environmental Affairs (GCEA).
3- Ministerial Decree No. 1552(1989): About the expanding spaces of fishing nets.
4- Ministerial Decision No.460 (1965): Regulating fishing in the sea.
5- Presidential Law No. 10 (1974): Combat of oil pollution in the sea.
6- Presidential Decree No.2445 (1971): Establishment the directorate of combat water pollution (sea, lakes, rivers,..).

Status of signature / ratification of the relevant international agreement:

In the past few years, the Syrian government has taken a number of important steps towards the conservation of biodiversity and its sustainable use. It has also entered into and is implementing a number of agreements on environmental and biodiversity issues such as:

Agreements / Protocols	Signed	Ratified
Convention on Biological Diversity	+	+
RAMSAR Convention on Wetlands	+	+
Convention on Combating Desertification	+	+
World Heritage Convention for Cultural and Natural Sites	+	+
Convention on the Protection of the Mediterranean sea Against Pollution (Barcelona, 1976)	+	+

Nowadays the National Biodiversity Unit (NBU) coordinates with the national institutions and prepare to involve in next listed Agreements, Conventions and Action Plans:

Agreements / Protocols
Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1973)
Convention on Migratory Species of Wild Animals (CMS) (Bonn 1979)
Convention on Protection of Migratory Birds (Bern 1979)
Agreement on the conservation of cetaceans of black sea,

Mediterranean sea and contiguous Atlantic area (ACCOBAMS)
African – Eurasian Migratory Water Bird Agreement (AEWA)

Action Plans

Management of the Mediterranean Monk Seal
Conservation of the Mediterranean Marine Turtles
Conservation of Cetaceans in the Mediterranean Sea
Conservation of Marine Vegetation in the Mediterranean Sea

Marine and coastal protected areas:

List of Legislated marine and coastal Protected Areas:

Name	Type	Legal Situation
Um – Altoyour	Coastal - Marine	Ministerial Decree No 15 / T dated 13/ 5/ 1999
Almanara	Marine	Ministerial Decree No 23 / T dated 19 / 7 / 2000

List of Proposal marine and coastal Protected Areas:

Name	Type	The site
Syrian Spongia	Marine	Arwad Island
Alnamel Island	Marine	North of Tartos
Jone Jabla	Marine	South of Lattakia

Implementation of national biodiversity strategy and action plan with regard to the Mediterranean coastal zones:

Through 1999 – 2000 the Biodiversity Unit have prepared the national Strategy and Action Plan and submitted it to the Supreme Council for Environmental Safety for the ratification.

The main objective for the marine strategy is to Conserve and Manage Marine Biodiversity.

The most important points related of the conservation of marine Biodiversity in national Strategy for the short and long terms were:

1- Prepare project proposals for the management of all legislated marine protected areas such as Um Al-Toyour.
2- Begin the process of legislating all the suggested marine protected areas to provide an adequate coverage of the remaining marine ecosystems.
3- Promote cooperation between Syrian Government Ministries, Agencies and various community-based organizations in developing marine life management policies that would guarantee the continued existence of wild flora and fauna along the Syrian shore of the Mediterranean Sea.

4- Modernize and apply the Law No.30 of 1964 that protects aquatic species, decrees that regulate fishing in marine waters, and all the relevant instructions of the Ministries of Agriculture and Environment.
5- Control in an effective manner all sources of pollution and actively penalize all violators.

6- Establish a system of marine protected areas consist of legislated and proposed areas.
7- Build sewage treatment stations to treat the liquid waste generated by coastal cities before dumping it into the sea.
8- Propagate marine species that are threatened and promote fish farming.

List of country endemic species:

Unfortunately, The studies related to endemic species are little, but we present a list of some threatened or endangered marine specie, which had mentioned in Syrian studies):

Marine fishes :
Mullus surmuletus
Caranx crysos
Umbrina cirrosa
Dicentrarchus labrax
Dicentrarchus punctatus
Epinephelus aeneus

Marine Mammals:
Phoca vitulina
Monachus monachus

Reptiles:
Caretta caretta
Chelonia mydas

Marine Plants:
Posidonia oceanica
Zostera marina
Cymodocea nodosa

Spongia:
Spongia officinalis
Hippospongia communis

Mollusca:
Dendropom petraeum

Crustaceae:
Ocypode cursor

One of the NBU's action plan activities through 2001 – 2002 is the establishment of a comprehensive Data–Base for the biodiversity components including marine Fauna and Flora.

Tunisie

Rapport National
Sur la conservation des sites et des espèces

Selma ZAIANE GHALIA

I. CADRE INSTITUTIONNEL

Suite à la création du Ministère de l'Environnement et de l'Aménagement du Territoire en 1991, qui a réuni sous sa tutelle divers départements (DGAT, ONAS, ANPE), des institutions spécialisées ont été crées pour son renforcement : l'APAL (Agence de Protection et d'Aménagement du Littoral en 1995) et le CITET (Centre International des Technologies de l'Environnement en 1996). En 1998, l'ANER (Agence Nationale des Energies Renouvelables) a été rattaché au MEAT. Ce ministère est principalement chargé de l'élaboration de la politique nationale en matière d'environnement, et de la coordination entre les différentes structures et parties concernées. Le Ministère de l'Agriculture, est le premier partenaire en matière de protection du patrimoine naturel chargé des questions techniques, de la gestion directe des sites, et de la conservation des espèces (Direction Générale des Forêts, Conseil Supérieur de la Chasse, Direction Générale de la Pêche).

II. CADRE JURIDIQUE

Au niveau national, l'évolution de l'important dispositif institutionnel relatif à la protection de l'environnement mis en place, traduit l'importance accordée par la Tunisie à cette question ainsi que son intégration dans ses politiques de développement. L'évolution des structures du MEAT s'est faite en parallèle avec des apports substantiels au niveau juridique, que ce soit par des amendements des textes existants ou par l'élaboration de nouveaux textes. On peut citer la refonte du code de l'urbanisme par la promulgation d'une loi sur le code de l'aménagement du territoire et de l'urbanisme en 1994. Ce code intègre notamment la dimension environnementale dans la politique de l'aménagement du territoire. Concernant les aires protégées en générale, la législation de base est celle contenue dans le Code Forestier. Les articles 218 à 222 définissent les parcs nationaux, les réserves naturelles et les forêts récréatives, les conditions de leur création, les limitations de droits d'utilisation des ressources dans ces zones, les mesures de protection, etc.
La création d'un parc national a lieu par décret présidentiel, suivi d'un arrêté de réglementation signé par le ministère de tutelle. La gestion est confiée aux services compétents relevants du Ministère de l'Agriculture.
L'arrêté du Ministère de l'Agriculture (28/09/95, art. 9 maintenu par la modification de l'arrêté en date du 10/08/99) délimite les espaces maritimes des zones de pêche, de même qu'il interdit la capture du phoque moine et des cétacés et la pêche des tortues marines dans les eaux territoriales ainsi que leur commerce et leur détention. Par ailleurs, il y a eu création au sein du Ministère de l'Agriculture d'une commission consultative chargée entre autre de délimiter les zones et les périodes autorisées à la pêche. Cette commission détermine par suite les espèces à sauvegarder ainsi que leurs habitats (loi n°99-74 du 26/07/1999, art. 7).
La stratégie nationale de la biodiversité mise en place par la Tunisie, comporte un volet particulier concernant le milieu marin, la création de parcs nationaux et la mise en oeuvre d'actions de préservation d'espèces en voie de disparition. Dans ce cadre, un nouveau texte juridique est en cours d'élaboration (prévue fin 2001).

III. SIGNATURE ET RATIFICATION DES PRINCIPAUX ACCORDS INTERNATIONAUX

Sur le plan international, la Tunisie est signataire de la plupart des conventions relatives à la protection de la biodiversité (Détails en annexe.). Au niveau régional, la Tunisie participe d'une

manière active à la mise en œuvre de la Convention de Barcelone, de ses protocoles et des différents plans d'actions du PAM.

IV. SITUATION DES AIRES MARINES ET COTIERES

La Tunisie a déjà traduit plusieurs directives et recommandations internationales dans la réglementation tunisienne. Bien qu'il n'y ait pas encore une loi spécifique aux aires protégées marines et côtières, plusieurs sites bénéficient déjà d'une protection de fait, de même que plusieurs espèces sont indirectement protégées par la réglementation des activités économiques comme l'exercice de la chasse (arrêté annuel de la chasse) et celui de la pêche.
Par ailleurs, une étude concernant directement la réalisation de cinq parcs marins (archipel de la Galite, îles de Zembra et Zembretta, îles Kuriat, Cap Négro-Cap Serrat et la partie Nord Est de l'archipel des Kerkennah) est en cours. Parallèlement, une vingtaine d'études relatives à la mise en place de schémas de gestion de zones sensibles littorales, ont été lancées. Leur objectif étant de mettre en place un programme de suivi de l'évolution des écosystèmes concernés et d'en ériger certains en aires spécialement protégées (parc ou réserve).
Concernant plus ponctuellement les sites de la Galite et de Zembra, deux études sont en cours (projet Life avec une ONG locale couvrant les écosystèmes de trois îles et, le projet FFEM qui rentre dans le cadre plus large de l'étude d'une stratégie de mise en place d'aires marines et côtières protégées).

V. ESPECES MARINES ET COTIERES PROTEGEES EN FAUNE ET FLORE

Une étude pour la création d'aires marines protégées est en cours de réalisation. L'objectif est de définir des systèmes de protection de la biodiversité marine. Trois sites pilotes ont été définis, les golfs de Tunis, Hammamet et Gabès. Parmi les systèmes de protection, la mise en place de récifs artificiels empêchant la pêche par les chalutiers et ne permettant qu'une pêche traditionnelle, est prise en considération. Une telle expérience ayant déjà été réalisée en 1993 au large de l'île de Djerba.

VI. STRATEGIE NATIONALE POUR LA BIODIVERSITE ET PLANS D'ACTIONS POUR LA MEDITERRANNEE

Dans le cadre de la mise en application de la stratégie nationale de la biodiversité, un projet relatif à la protection des ressources marines et côtières a démarré en 2001. Il aboutira notamment à la mise en place d'un système de gestion intégré du milieu marin et côtier du golf de Gabès. Sachant que ce site est d'une importance biologique importante, tant au niveau national qu'au niveau régional (rappelant que le Golf de Gabès constitue un site d'hivernage pour diverses espèces méditerranéenne, principalement la tortue marine et les oiseaux marins). D'autres éléments d'informations complémentaires sont fournis dans le cadre du suivi des différents protocoles.

VII. OBSERVATIONS D'ESPECES NON-INDIGENES SIGNALEES DANS LA ZONE COTIERE MEDITERRANEENNE

Diverses actions de sensibilisation et d'information du public et des pêcheurs ont eu lieu au sujet de la Caulerpa taxifolia depuis 1997. En 2000, suite à une observation effectuée par un pêcheur, une zone de présence de la taxifolia a été identifiée au environ du port de pêche de Sousse. Depuis, un comité de suivi à été instauré auprès de l'INSTM.

VIII. LISTE DES ESPECES ENDEMIQUES DE LA TUNISIE

L'étude nationale sur la biodiversité a établi une liste des espèces faunistique et floristique de la Tunisie, comprenant tous les milieux naturels. Dans ce cadre, un inventaire des connaissances relatives à la diversité biologique marine et lagunaire a été réalisé avec le concours du CAR/ASP et des recommandations ont été présentées.

IX. PRINCIPALES ACTIONS ENTREPRISES DANS LE CADRE DES PLANS D'ACTIONS

a. Plan d'Action pour la Gestion du Phoque Moine en Méditerranée

Une étude a été réalisée autour de l'archipel de la Galite pour identifier les sites potentiels de présence du phoque moine, en juillet 2000. Ce travail a été effectué dans le cadre d'une collaboration entre l'ANPE, l'ICRAM, et le CAR/ASP. La prospection effectuée a permis d'identifier et de cartographier 16 grottes dont 7 offrent des conditions idéales pour abriter le phoque moine et pour développer un programme de suivi à long-terme, qui sera mis en place prochainement.

b. Plan d'Action pour la Conservation des Tortues Marines de Méditerranée

Une étude sur la conservation des îles Kuriat, principale site de nidification des tortues marines en Tunisie, a été élaborée en 1999. Le camp scientifique établit depuis 1996 sur l'île Kuriat, a été renforcé en 2000 pour le suivi et l'amélioration des connaissances des paramètres biologiques de la nidification des tortues marines. Un plan de gestion des îles Kuriat est en cours de préparation dans le cadre des zones classées zones sensibles (APAL).
Dans le cadre de la stratégie nationale de biodiversité, un centre de niveau régional de soins et d'études pour les tortues marines est en cours de mise en place à Monastir, en face des îles Kuriat, pour apporter secours aux tortues marines capturées accidentellement.
Pour les besoins de ce centre, cinq experts tunisiens ont été formés sur les techniques de soins aux tortues marines, dans la station zoologique de Naples 'Anton Dohrn'.
Des activités de sensibilisation du public à la protection des tortues marines sont réalisées annuellement pendant la saison estivale par le MEAT, en collaboration avec des ONG. Dans ce cadre, divers supports de sensibilisation ont été produits, comme l'exemple récent du dépliant éducatif produit par l'ATPNE (Association Tunisienne pour la Protection de la Nature et de l'Environnement) en collaboration avec la SPANA (Association Anglaise pour la Protection des Animaux).

c. Plan d'Action pour la Conservation des Cétacés en Mer Méditerranée

Un expert tunisien a participé à l'atelier méditerranéen organisé à Montpellier sur le suivi scientifique des échouages de cétacés.
Une étude nationale pour la création d'un réseau d'échouage est en cours de préparation.
L'INSTM va mené une campagne de prospection pour les cétacés en collaboration avec RIMMO.

d. Plan d'Action pour la Conservation de la Végétation Marine en Mer Méditerranée

Une mission d'étude a été organisée aux îles Kerkennah pour la cartographie des herbiers de posidonie et d'autres formations végétales d'importance écologique.
Un projet pilote de culture in situ du corail est réalisé à Zembra depuis 1999 par l'INSTM avec la collaboration de Monaco, suivant l'expérience réalisée par cette dernière.

X. ACTIVITES D'INVENTAIRES DE SITES

L'étude de l'inventaire des herbiers à Kerkennah a été une première occasion d'utilisation du système FSD. Toutefois, d'autres projets sont en cours de préparation.

XI. COLLABORATIONS ENTREPRISENT DANS LE CADRE DE LA MISE EN OEUVRE DU PROTOCOLE ET / OU DES PLANS D'ACTIONS

ANNEXE

Etat des conventions internationales en matière de conservation des ressources naturelles et de protection de l'environnement.

Convention/ Protocoles	Adoption	Ratification	Loi
Convention relative aux zones humides d'importance internationale (Ramsar)	1971	1980	80-09 du 03/03/1980
Convention relative à la protection du patrimoine mondial culturel et naturel (Paris)	1972	1974	74-89 du 11/12/1974
CITES : Convention relative au commerce international des espèces de faune et de flore menacées d'extinction (Washington)	1973	1974	74-12 du 11/05/1974
Convention africaine pour la conservation de la nature et des ressources naturelles (Alger)	1975	1976	76/91 du 04/11/1976
Convention pour la protection de la Mer Méditerranée contre la pollution (Barcelone)	1976	1977	77-29 du 25/05/1977
Convention pour la conservation des espèces migratrices de la faune sauvage (Bonn)	1979	1986	86-63 du 16/07/1986
Convention relative à la conservation de la vie sauvage et des milieux naturels d'Europe (Berne)	1979	1995	95-75 du 07/08/1995
Protocole relatif aux Aires Spécialement Protégées de la Méditerranée (ASPIM) (Genève)	1982	1983	83-44 du 22/04/1983
Convention sur la Biodiversité (New York, Rio) Alghero	1992 1995	1993 1993	93-45 du 03/05/1993
Convention des Nations Unies sur la lutte contre la désertification dans les pays gravement touchés par la sécheresse et/ou la désertification, en particulier en Afrique	1994	1995	95-52 du 19/06/1995
Protocole relatif à la protection de la mer Méditerranée contre la pollution résultant de l'exploration et de l'exploitation du plateau continental, du fond de la mer et de son sous-sol (Madrid)	1994	1998	98-15 du 23/02/1998
Amendements à la Convention pour la protection de la mer Méditerranée contre la pollution et amendements au Protocole relatif à la prévention de la pollution par les immersions effectuées par les navires et aéronefs (Barcelone)	1995	1998	
(Protocole relatif aux aires spécialement protégées et à la diversité biologique en méditerranée (Barcelone)	1995-96	1998	
Amendement au Protocole relatif à la protection de la mer Méditerranée contre la pollution provenant des sources situées à terre (Syracuse)	1996	1998	
Protocole relatif à la prévention de la pollution de la mer Méditerranée par les mouvements transfrontaliers de déchets dangereux (Izmir)	1996	1998	
ACCOBAMS: Accord sur la conservation des cétacés de la mer Noire, de Méditerranée et de la zone atlantique adjacente (Monaco)	1996	En cours	

The Authority for the Protection of Special Areas in Turkey

In Turkey various institutions, ministries, and organizations have undertaken duties and responsibilities for the protection of natural sites and the species.
Ministry of Environment (MOE) creates policies, planning and coordination for the environmental protection, management activities which are carried out by some other institutions and ministries.
Ministry of Forestry (MOF), through the General Directorate of National Parks and Wildlife is the principal institutions responsible for management of the protected areas.
Ministry of Agriculture and Rural Affairs mainly aims the conservation of plant and animal species and their genetic diversity.
Ministry of Culture (MOC) is responsible for the protection of areas of national and international historical and cultural significance, classified as “historically”, “archeologically”, “culturally” and “natural” significant sites.
Also, APSA under Ministry of Environment is presently responsible for nature conservation and protection of environmental values in areas declared “Specially Protected Areas” by the Cabinet of Ministers. APSA was established in 1989 by the Decree Having the Force of Law (number of decision: 383/KHK). 13 Regions in Turkey were declared by joint Cabinet of Ministers Decision, as Specially Protected Areas (SPAs). While nine of them are located at the coastal region of Turkey, four are in the inland Anatolia. The Specially Protected Areas are unique regions with historical, natural, and cultural values based on national and international criteria. These areas have been so declared pursuant to article 9 of the Turkish Law of Environment and the addendum protocol to the Barcelona Convention; “Protocol Concerning Protected Areas in the Mediterranean” to ensure conservation and sustainable use for the generations.
In view of all these principles, the basis for the long-term implementation should be: “Protection Before Deterioration, Utilization by Conservation and Protection by Improvement”.
Within the legislation of Turkey, there are numerous laws, when are related directly or indirectly to the nature protection.
The main nature protection laws are:
-The Environment Law (Code no: 2872, 1983) and its regulation
-The National Parks Law (Code no: 2873, 1983)
-Law for the Protection of Cultural and Natural Assets (Code no: 2863, 1983)
-The Water Products Law and its regulations
-The Forest Law (Code no: 6896, 1956; 2896, 1983;3302, 1986)
-The Coast Law
-The Hunting Law
Also, “Central Hunting Commission”, constituted under the Hunting Law and “The Water Products Circular” constituted under the Water Products Law, which are met and published annually, have principles to protect the threatened species and their habitat. For the protection of habitats; “Specially Protected Areas (SPAs)” which the requirement for the establishment and declaration of an SPA are stated under Environment Law; “**National Park**” , “**Nature Park**” , “**Nature Reserve**”, and “**National Monuments**” described in National Park Law; “**Game Reserve**” and “**Captive Breeding Areas**” within the terrestrial ecosystems described in Hunting Law; “**Natural and Cultural Assets**” status described in Laws for the Protection of Cultural and Natural Assets give responsibilities for protecting the natural environment
In addition to the national legislation, Turkey is a party to several international conventions such as
-Convention on Protection of Birds
-Convention on Protection of Worlds’ Cultural and Natural Heritage
-Barcelona Convention
-Ramsar Convention
-Washington Convention
-Convention on Biological Diversity
-Convention on Combat to Desertification
-Bern Convention
-CITES Convention

Up to know 13 Specially Protected Areas have been established in Turkey. The Last SPA, Salt Lake SPA, in inner Anatolia, was declared by Cabinet of Ministers Decision in 2 December 2000 . There are also 32 National Parks, 12 Nature Parks, 33 Nature Protection Areas and 54 Monuments in Turkey.

And also the decision of the establishment of a Marine Underwater Park in Gökçeada was published in the Official Gazette in 21 February 1999. This initiative has been undertaken by the collaboration of Ministry of Agriculture and Rural Affairs Marine Research Foundation.

Approximately 3000 species have been identified in Turkey's sea. Marine vegetation species from different division (Magnoliophyta, chlorophyta, Phaeophyta) have been widely observed along the Turkish coast of Mediterranean.

Administrator Committee of EMERALD Network in Turkey, Akyata an Lagoon, Beyda lar , Delta of Gediz , Ilgaz Mountains National Park, Manyas Lake, K z lliman Region in çel Province, Transition zones from Middle Taurus Mountains to Inner Anatolia, Salt Lake and its surroundings, Göksu Delta in çel Province were declared as "Areas of Specially Conservation Interest for Europe" and related studies with their geographical, biological and ecological information were started. Two areas of them, Salt Lake and Göksu Delta, are specially protected areas.

There are about 20 species of mammals in Turkish Sea and dolphins and less than 50 live seals (*Monachus monachus*) on the coasts of Turkey. As well as three marine turtle species (*Caretta caretta, Chelonia mydas and Trionyx triunguis*) have been observed along the Turkish coast of Mediterranean.

Strictly protected marine species of flora and fauna expressed in the Fishing Regulation Circulary of the Ministry of Agriculture and Rural Affairs are;

Posidonia oceanica, Zostera noltii, all species *of Porifera, Hippocampus hippocampus, Salmo trutta labrax, Delphis delphis, Caretta caretta, Chelonia mydas, Trionyx triunguis, Monachus monachus, Acipenser struio, Huso huso, Sciaena umbra, Corallium rubrum, Gerardia savaglia, Pinna nobili,* and all the endangered or threatened species which are living in Turkish marine environment and listed in the Appendix I and II of Bern have been protected.

According to the commitments of the Biological Diversity Convention, all the Parties have to prepare their national Biodiversity Strategy and Action Plans in order to secure sustainable development, national objectives and policies related to environment need to be determined along with all other plans and policies. With this regard, an initiative began in early 1985 to prepare a "National Environmental Action Plan (NEAP)" under the coordination of the State Planning of Turkey and the Ankara Office of the World Bank.

As a result of these activities, the National Biodiversity Strategy and Action Plan has been completed in 1997. The Strategy presents a vision for Turkey of:

A society that lives and developes as part of nature, values the diversity of life, takes no more than can be replenished and leaves to future generations a world, rich in biodiversity.

In support of this vision, the Strategy also presents a series of guiding principles that provide a foundation for implementing its strategic actions.

The strategy's four goals are:

i)conserve biodiversity and use biological resources in a sustainable manner;

ii) improve an understanding of ecosystems and increase our resources management capability;

iii)promote an understanding of the need to conserve biodiversity and use biological resources in a sustainable manner;

iv) maintain or develop incentives and legislation that supports the conservation of biodiversity and the sustainable manner and share equitably the benefits that arise from the utilization of genetic resources.

Proposed mechanism for implementing the Turkish Biodiversity Strategy include:

a)initiating priority actions integrated with ongoing activities;

b)reporting on policies, activities and plans aimed at implementing the strategy;

c) coordinating the implementation of national and international elements of the strategy;

d)ensuring that there are mechanisms in place to encourage full participation in the implementation of the strategy; and

e)reporting on the status of biodiversity.

Successful implementation of the Strategy will be largely determined by the degree to which all parts of Turkish society adopt its vision and principles, and contribute to achieving its goals.
The Ministry of Environment has been carrying out a research project in collaboration with Dokuz Eylül University, Institute of Marine Sciences & Technology about Caulerpa species in Mediterranean. And In each province of Mediterranean region of Turkey public awareness programs have been performing by participating scuba-diving clubs, fishermen, ship owners, tourism sector people and other related agencies and people.
In Datça-Bozburun SPA, The Biological Diversity Research and Preparing Ecological Management Plans project which was initiated in August 2000 will be finished in October 2001. Water Resources (surface and underground water) Management Plan Project has been carrying out For 14 mounts. And SAD-AFAG, carrying out the long-term “Foça Pilot Project” since 1993, received a new grant from the WWF Across the Water Program in Summer 2000 to bolster conservation efforts of local NGOs, Datça Volunteers for Nature Conservation (DVNC) in Datça-Peninsulas.
In Belek SPA, An research project have been performing on the Bird species of Belek SPA in collaboration with Bo azkent Municipality and Akdeniz University Biology Department. This project will be completed at the end of this year. APSA has also been carrying out some etudes in terms of geological and geotechnical structure, hydrological potential and water budget for making decisions for planning protection measures.
In Patara SPA, An afforestation project covering 75 ha in the eastern part of the E en River was initiated in the collaboration with the Ministry of Forestry in the beginning of 1997 to stabilize throughout the dunes at the back of the beach. Along this line; marine turtle monitoring program has been carried out during the breeding season to determine the nest places and to eliminate harmful factors such as natural and anthropogenic adverse effects on Patara beach in 1999 and 2000. On the other hand, sanitary landfill construction will be completed at the end of the 2001. Illegal buildings in Patara region have been breaking down in collaboration with local authorities and gendarme department.
Fethiye –Göcek SPA: The Research Project for the Population Sea Turtles on the Fethiye Beaches between 12 June until 16 September in 2000 was prepared by the 9 Eylül University, Buca Education Faculty. Based on the results of this project 348 landings for Caretta caretta were counted. 110 of them results by nesting. Results of this project and that of former years nesting density are not different. All these results pointed that Fethiye beaches is an important breeding place for Caretta caretta. And also some suggestions were given for the sea turtles conservations in Fethiye-Göcek SPA. The project of the Biological Diversity and Ecosystem relations in and Around Kocagöl District in Fethiye-Göcek SPA was prepared in 1998 by Akdeniz University.
Ideal goals of the Göksu Delta SPA Ecological Management Plan, completed in 1998, have been performing by APSA. Two bird species of Göksu Delta SPA, *Phalacrocorax pygmeus*, *Pelecanus crispus*, was mentioned in Annex II of the Protocol concerning Specially Protected Areas and Bilogical Diversity in Mediterranean as endangered or threatened species. Delta’s beaches are very important habitat for following reptiles such as *Caretta caretta*, *Chelonia mydas*, *Trionyx triunguis* and for fallowing mammalia such as *Delphinus delphinus*, *Monachus monachus*, (In Protocol concerning Specially Protected Areas and Bilogical Diversity in Mediterranean (Annex II)) *Globicenphala mellaena Lutra lutra Meles meles* and *Mustela nivalis*
Köyce iz-Dalyan SPA: In This SPA, to prevent pollution of Lake Köyce iz, APSA in collaboration with the German Finance Organization Kreditanstalt Für Widerаufbau (Kfw) is implementing sewage treatment plant and waste-water treatment infrastructure project. Project will be finished at the middle of 2002. Based on the results of breeding birds of Köyce iz-Dalyan SPA Project, 1991, undertaken by R. Kinzelbagh 206 bird species were observed in the study field. Pelecanus crispus (Dalmatian pelican), *Phalacrocorax aristotelis* (Shag), (*Phalacrocorax pygmeus* (pygmy cormorant) and *Sterna sandvicensis* (sandwich tern) observed by this research are mentioned in Annex II Of Protocol concerning Specially Protected Areas and Biological Diversity in Mediterranean.
Foça SPA has been selected as the pilot project area for the conservation of Mediterranean Monk Seal by National Monk Seal Committee of Turkey in coordination with the Ministry of Environment. The heavy marine use and human activities such as sailing, anchoring, entering into the caves, fishing, hunting, camping, picnics and swimming were not allowed near the major

habitats; Marine protected areas for Mediterranean Monk Seal were determined and conservation measures were putted into effect in terms of the Water products Circular and Planning decisions for Foça SPA.
Of 17 sites in Turkey classified as important for *Monachus monachus* by Ministry of Environment, SAD-AFAG, METU-IMS and TUDAV (Turkish Marine Research Foundation), five are likely to become "Monk Seal Conservation areas" (MSPAs). The 5 accepted areas are:

- Area 5 (covering Gökçeada and Bozcaada Islands, Baba br., and the mainland vicinity near Çanakkale
- Areas 6&7 (no. 6 between Izmir and Aliaga, incorporating the Foça SPA, and No. 7, the Karaburun peninsula.
- Arae 8 (covering the coastal zone between Çe me and Kusadas).
- Arae 10 (Bodrum peninsula, between Güvercinlik and Bodrum).
- Arae 16 (incorporating the 5 recently –announced SIT (Ministry of Culture) protected zones in the Cilician basin, between Gazipasa and Tasucu)

"Central Hunting Commission), constituted under the Hunting Law and "The Water Products Circular" constituted under the Water Products Law have principles to protect the threatened species and their habitats.
In addition, a Committee of Ministers Decision, concerning the program of monitoring, implementation and coordination, has been given and the 26. item measures to be taken is related to environment section, specifying a program to be started for the conservation of population of marine turtles and providing long term control of harmful environmental effects; convenient with the protection of 17 important area of marine turtles according to this decree 1990. In this context, in 1990 a "Marine Turtle Monitoring-Evaluation Commision" was formed under the coordination of Ministry of Environment and related Ministries, universities and NGOs. For the evaluation and effectiveness, in the year 2000, this Committee has divided into three sub-committees namely; "Scientific", "Local" and "National" Committees.

In last two years (1999-2000) Marine turtles monitoring project was repeated in the collaboration with APSA and Hacettepe University. Based on the result of marine turtle monitoring project ratio of nests with hatchling is 44.20% in Dalyan and is 60.76% in Patara. Field studies on the sea turtles were conducted between 01 May 2000 and 05 Sept. 2000 on Patara beach. 2 of 165 landings belongs to *Chelonia mydas.* According to the available information in the literature it is the first recorded case that *Chelonia mydas* landen on the shores of Patara beaches.
In Belek SPA during the breeding season in 1999, 612 *Caretta caretta,* nests were determined in 29.5 km long beach. These results indicated that Belek region is the second biggest nesting area for the sea turtles in Mediterranean after Zakynthos Island of Greece.
In all SPA beaches used by turtles APSA has lunched a beach management strategy for protection of nesting beaches where entrance to the beach between dawn and dusk, and motor-vehicle traffic were banned and recreational activities were strictly regulated and controlled during the day time. Visitors are kept informed by means of leaflets hand-out and signposts informing on how to behave on a nesting beach during the reproduction season. Public meetings and training programs for fishers, people working in tourism sector, environmental educators (certificated by APSA) and students have been carried out for the conservation of sea turtles and their habitats. And the protection of nesting programs will be carried out in 2001 breeding season as well for all sea turtles habitats in SPAs.

In last 2 years, environmental education activities were repeated in the collaboration with universities, research institutions and NGOs to protect flora and fauna and their habitats. In 1999 an environmental education seminar was organized for Secondary school teachers from all SPAs in Belek SPA. At the end of the seminar the teachers, joined whole activities of seminar, were certificated as a environmental educators. In 2000, APSA organized a seminar for each one of the SPAs about "the Local Authorities Problems on Nature Conservations and Their Solutions". In March of 2001, Göksu Delta SPA, integrated pest management education program was performed for farmers (especially, citrus farmers and rice field farmers) from Göksu Delta SPA. Specially Protected Areas Borders of Köyce iz-Dalyan and Fethiye-Göcek SPA were enhanced and new borders endorsed by publishing in the Official Gazette in 14 April 2000.

ANNEX IV: RECOMMENDATIONS OF THE MEETING

RECOMMENDATIONS OF THE MEETING

Technical aspects related to the drawing up of the List of Specially Protected Areas of Mediterranean Importance (SPAMIs)

1. To invite RAC/SPA to prepare a "drafting aid" for the presentation reports and to include an explanation of the procedures for inclusion on the list of SPAMIs.

2. To invite the focal points to use the draft grid for the objective evaluation of proposals for inclusion on the list of SPAMIs on a pilot basis for the first proposals for inclusion on the list of SPAMIs, with the aim of further refining the tool later.

Action Plan for the Management of the Mediterranean Monk Seal

3. To invite RAC/SPA to set up, in the immediate future, an emergency group of specialists to draw up an emergency plan, with concrete actions and a timetable.

4. To invite the Contracting Parties to adopt the following draft recommendations submitted by the working group:

- More information needs to be collected on the number of individuals surviving in each Mediterranean country so as to produce estimates on the viability of each surviving nucleus. Such data must be exchanged between countries ad between countries and RAC/SPA so as to provide a general view on the conservation status of the population in the Mediterranean.

- Sources of funding must be identified for the execution of the above data collection. For all items of the action plan that have to be fulfilled by the countries, the identification of funds remains the principal obstacle in carrying out the activities. Special support is needed for developing countries that cannot proceed with such activities due to financial constraints.

- The best experience of awareness programs geared toward the local population must be promoted by multi lateral and bilateral cooperation.

- The RAC/SPA Secretariat is requested to establish a web page with a description of all programs and any useful information concerning Mediterranean monk seal, for better communication between decision-makers.

- Meetings are more successful in achieving such goals for the local population.

- Instruments and measures for the *in-situ* conservation of the monk seal, involving awareness programs directed at the local population, need to be identified and adapted to each country based on the social and economic conditions.

- Every country should formulate in the immediate future a national action plan for the protection of the monk seal based on the actions listed in the regional action plan formulated by MAP.

- The need for cooperation with other conventions (CMS and Bern Convention) is considered important considering the imminent formulation of an Action Plan for the conservation of the Mediterranean monk seal in the Atlantic, under the auspices of the Bonn Convention. Equally, the need for cooperation with FAO and GFCM concerning measures in the Mediterranean for the conservation of monk seal interacting with fisheries is also considered important.

Action Plan for the Conservation of Mediterranean Marine Turtles

5. To recommend to the Contracting Parties to promote national networks of experts, in order to reinforce the Mediterranean network. Co-ordination with FAO and GFCM must be reinforced for measures concerning the protection of marine turtles in the Mediterranean interacting with fisheries.

6. To invite RAC/SPA to improve the standardization of tagging methods and to centralize the information resulting from different tagging programs within a database administered by RAC/SPA.

7. To recommended to the Contracting Parties to provide no further funding for tagging programs that did not conform to the established norm.

8. To invite RAC/SPA to extend the directory of marine turtle specialists to include organizations and/or laboratories.

9. To invite RAC/SPA to:

   (a) Elaborate a project, to be submitted for European Commission financing, to identify important habitats for marine turtles.

   (b) Create a web site to group all the available resources for the conservation of Mediterranean marine turtles.

10. To ask RAC/SPA to invite a representative of the CITES Secretariat to attend future meetings within the framework of strengthening cooperation with other conventions.

11. To recommend to the Contracting Parties to take note of Guidelines to design legislation and regulations relative to the conservation and management of marine turtle populations and their habitats and to take them into account to elaborate or upgrade the existing relevant legislation and its implementation.

Action Plan for the Conservation of Cetaceans in the Mediterranean Sea

12. To invite RAC/SPA to create a Mediterranean database on cetacean stranding.

13. To ask RAC/SPA to assist the Parties in elaborating and implementing national action plans for the conservation of cetaceans, including the networks for monitoring strandings and for training.

14. To invite RAC/SPA to inform the next meeting of Contracting Parties about the provisions of the Memorandum of Cooperation to be signed between RAC/SPA and the Secretariat of ACCOBAMS, as approved by the fifth meeting of national focal points.

Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea

15. To invite RAC/SPA to promote the monitoring of the health of meadows and to disseminate the referent techniques through technical manuals and trainings.

16. To transmit to the next meeting of Contracting Parties the document Draft Guidelines for Impact Assessment on Seagrass Meadows as amended by Working Group 1 (Annex X).

17. To recommend to the Contracting Parties to grant the status of "Action Plan Associate" to the following institutions: GIS Posidonie (France); ICRAM (Italy); INSTM (Tunisia); the Secretariat of the RAMOGE Agreement; the University of Corte in Corsica (France) and the World Seagrass Association.

Development of protected areas

18. To invite RAC/SPA to compile a list of areas, which countries had identified as candidates for SPAMIs, but for which the selection criteria required under the Protocol, could not be completely met, pending the provision of assistance to the country concerned.

Data collection (including inventories and databases)

19. To invite RAC/SPA to computerise the SDF.

20. To invite RAC/SPA to elaborate long-term training courses on the use of the SDF and to assist countries in its application.

SAP BIO Project

21. To invite RAC/SPA, in the elaboration of the SAP BIO project, to take into account the countries national action plans, already developed for the CBD.

Coordination with other organizations

22. To invite RAC/SPA to contact the Secretariats of the Bern and Bonn Conventions with a view to reinforce the collaborative link between RAC/SPA and those organisations by signing a MOU with each of them.

Other activities

Introduction and re-introduction of species

23. To invite RAC/SPA to prepare the elements of a draft action plan on introduced and invasive species with clear objectives and a timetable. The revision and the amendment of the document Draft guidelines for introduction of marine species and invasive species in the Mediterranean sea (UNEP(DEC)/MED WG.177/6) will be carried out within the framework of this action plan.

Mediterranean initiative on taxonomy

24. To invite the contracting Parties to adopt the following recommendations of Working Group 3 on the Mediterranean initiative on taxonomy:

- Invite the Contracting Parties to attach greater importance to taxonomy and to strive to increase the number of specialists in Mediterranean taxonomy.

- Compile an inventory of taxonomy specialists in Mediterranean countries for those taxons that are important for the implementation of the SPA Protocol.

- Prepare an inventory of laboratories with marine taxonomic competence, the capacities at their disposal, and their possibility of taking on students for training in taxonomy. The inventory should also encompass specialized scientific societies (e.g. societies for herpetology, ichthyology, etc.).

- Identify the urgent needs of countries in the field of taxonomy.

- Launch programmes to train taxonomists and to provide study grants and other means to encourage students to specialize in taxonomy. In this way, the bilateral cooperation mechanisms could be put to use.

- Given the important role of reference collections in taxonomic work, it is important to carry out a study on the situation of reference collections of Mediterranean marine species. This study should lead to a program for their development, continuance and networking as tools to support taxonomic work.

- Promote the organization of thematic workshops on taxonomy to allow exchanges between Mediterranean taxonomists.

- Elaborate and update guides for the identification of marine species.

- The implementation of the above recommendations should be integrated into a Mediterranean strategy, which must take account of other initiatives, particularly the Global Taxonomy Initiative undertaken within the framework of the CBD.

Programme-Budget of RAC/SPA for 2002-2003

25. To invite RAC/SPA to place its databases on the Internet, and make available GIS data.

26. To invite RAC/SPA to include the new Mediterranean database of cetacean strandings in the list of activities of the Centre.

27. To invite RAC/SPA to prepare the elements of a draft action plan for the conservation of avian species of the Mediterranean.

28. To invite RAC/SPA to prepare the elements of a draft action plan for the conservation of Mediterranean species of cartilaginous fish.

29. To invite the Contracting Parties to adopt the proposed activities of RAC/SPA for the biennium 2002-2003, as amended and agreed by the focal points.

Any other matters

Issues of trade in *Lithophaga lithophaga*

30. To invite RAC/SPA to investigate the matter, also drawing upon advice from environmental legal experts, and to report on the subject to the focal points at their next meeting.

Proposal to change the name of the Centre

31. To invite RAC/SPA to further investigate the question of a change in the name and logo of RAC/SPA and report to the focal points.

ANNEX V

FORMAT FOR THE REPORTS OF THE MEETINGS OF THE NATIONAL FOCAL POINTS FOR SPAs

ANNEX V
FORMAT FOR THE REPORTS OF THE MEETINGS OF THE NATIONAL FOCAL POINTS FOR SPAs

Introduction

Participation

Opening of the Meeting

Rules of Procedure

Election of Officers

Adoption of the Agenda and organization of work

Conservation of natural sites and species in the Mediterranean countries

Progress and development of activities

This section of the report will reflect the main discussions of the meeting relative to RAC/SPA's activities. It will be structured to reflect the different items of the agenda relating to this subject.

Programme and budget for the biennium XXXX-XXXX

Other matters

Adoption of the report of the Meeting

Closure of the Meeting

Annex I

List of participants

Annex II

Agenda of the Meeting

Annex III [1]

Status of the implementation of the SPA Protocol

This annex will comprise two sections:

- A synthesis (10 pages maximum) of the reports presented by the delegations, setting out the main achievements and the gaps.

- The texts of the reports presented by the delegations under the agenda item relative to the conservation of natural sites and species in the Mediterranean countries[2].

Annexe IV

Recommendations of the Meeting

Possible further annexes

[1] This section of the report will be elaborated after the meeting.
[2] The focal points are to submit to RAC/SPA, two months before each meeting of focal points for SPAs, a report on the implementation of the Protocol, containing the information set out in the attached appendix. RAC/SPA will compile these reports into a working document of the meeting of focal points. The contents of that working document will form annex III of the reports of the meetings of focal points.

Appendix

Proposed Format for the Country Reports of the Meetings of National Focal Points for SPA

The format detailed below is proposed to the National Focal Points for SPA for the drawing up of the country reports.

The requested information should be presented in a synthetic form, and the report, as a whole, should not exceed four (4) pages (about 2000 words).

The delegations are invited to present the national reports in English or French, with a copy in electronic format.

- Country

- Author(s) of the report

- Brief description of the institutional framework

- Brief description of the legal framework governing the conservation of species and sites (please list the main legal instruments)

- Status of signature/ratification of the relevant international agreements

- Marine and coastal protected areas (new developments since the last meeting of the focal points for SPAs)

- Protected marine and coastal species of fauna and flora

- Implementation of the national biodiversity strategy and action plans with regard to the Mediterranean marine and coastal zone

- Observation/studies about alien species recorded in the Mediterranean marine and coastal zone

- List of country and/or Mediterranean endemic species (if available for the country)

- Activities undertaken in the framework of the implementation of:
    a. Action Plan for the Management of the Mediterranean Monk Seal

b. Action Plan for the Conservation of Mediterranean Marine Turtles
c. Action Plan for the Conservation of Cetaceans in the Mediterranean Sea
d. Action Plan for the Conservation of Marine Vegetation in the Mediterranean Sea

(if there is no action, please state the reasons)

- Activities related to the inventories (completed or ongoing) of sites using the Standard Data-Entry Form (SDF) for national inventories of natural sites of conservation interest

- Collaborative activities undertaken within the framework of the implementation of the Protocol and/or the Action Plans, especially at bilateral or sub-regional levels

- Status of implementation of the recommendations of earlier meetings of the focal points for SPAs and of the Contracting Parties.

ANNEX VI

DRAFT ANNOTATED FORMAT FOR THE PRESENTATION REPORTS FOR THE AREAS PROPOSED FOR INCLUSION IN THE SPAMI LIST

OBJECTIVE

The objective of this Annotated Format is to guide the Contracting Parties in producing reports of comparable contents, including the information necessary for the adequate evaluation of the conformity of the proposed site with the criteria set out in the Protocol and in its Annex I (Common criteria for the choice of protected marine and coastal areas that could be included in the SPAMI List).

CONTENTS

The presentation report shall include the following main information on: (i) identification of the proposed protected area (ii) site description (iii) its Mediterranean importance (iv) the activities in and around the area and their impacts (v) legal status (vi) management measures (vii) human and financial resources available for the management and the protection of the site.

SUBMISSION OF REPORTS

The reports should be submitted to the RAC/SPA two months before the meeting of National Focal Points for SPA in English or in French.

Dossiers should be compiled on A4 paper (210 mm x 297 mm), with maps and plans annexed on paper with a maximum size of an A3 paper (297 mm x 420 mm). Contracting Parties are also encouraged to submit the full text of the proposal in electronic form.

The requested annexes should be submitted on paper and, if possible, also in electronic form. They are the following:

- Copies of legal texts
- Copies of planning and management documents
- Maps: administrative boundaries, zoning, land tenure, land use, and distribution of habitats and species, as appropriate
- Existing inventories of plant and fauna species
- Photographs, slides, films/videos, CD-ROMs
- List of publications and copies of the main ones concerning the site

N.B.: All the following sections have to be in the report submitted, even those sections or elements that do not apply to the proposed area. Where that is the case, please put “not applicable to the proposed area”.

1. AREA IDENTIFICATION

1.1. COUNTRY/COUNTRIES (in the case of transboundary areas)

1.2. ADMINISTRATIVE PROVINCE OR REGION

1.3. NAME OF THE AREA

1.4. GEOGRAPHIC LOCATION

Describe its geographical boundaries, e.g. rivers, roads, geographical or administrative boundaries (do not describe the co-ordinates here; please make a separate annex with a map and a description of geographical co-ordinates as stated in the legal declaration of the area).

1.5. SURFACE OF THE AREA (total)

(in national unit)	(in ha)

1.6. LENGTH OF THE MAIN COAST (Km)

2. EXECUTIVE SUMMARY (maximum 3 pages)

Supply a summary of the information contained in sections 3 to 9.

3. SITE DESCRIPTION

3.1. TYPOLOGY OF THE SITE

3.1.1. Terrestrial surface, excluding wetlands (ha):		
3.1.2. Wetland surface (ha):		
3.1.3. Marine surface (Sq. Km):	Marine internal waters	
	Territorial sea	
	High sea	

3.2. MAIN PHYSICAL FEATURES

3.2.1. Geology/Geomorphology

Give a brief description of: (i) geological aspects (lithologic and tectonics); (ii) processes of sedimentation and erosion observable in the area; (iii) coastal geomorphology and (iv) island system. Indicate bibliographical sources.

3.2.2. Other interesting physical features: Such as hydrodynamics, volcanic formations, caves, underwater formations, etc.

3.2.3. Length of beaches (in Km), including islands:

a) Length of sandy beaches:

b) Length of pebble or stony beaches:

c) Length, height and depth of active sand-dunes:

3.3. FRESHWATER INPUTS

3.3.1. Mean annual precipitation (in mm)

3.3.2. Main water courses (permanent and seasonal)

3.3.3. Estuarine areas: Existence and brief description

3.3.4. Freshwater springs: Existence and brief description, including marine offsprings

3.4. BIOLOGICAL FEATURES (B2, Annex I)

3.4.1. Habitats: A brief description of dominant marine and terrestrial habitats, on the basis of the habitat classifications adopted within the framework of MAP (and their coverage in ha)

3.4.2. List of regionally important species (flora and fauna) (B-2a, Annex I)

List here ONLY those species protected by international agreements, particularly those marine species included in Annex II of the Protocol, which are present in the area. Any other species may be listed if it is clearly considered of regional importance given its high representation in the area. Display the species list under the headings Marine Plants, Terrestrial Plants, Marine Invertebrates, Fish, Amphibians and Reptiles, Birds, and Mammals. For each species state:

a) its relative abundance as Common (C), Uncommon (U) or Occasional (O),
b) Its global status as rare (r), endemic (e) and/or threatened (t), and
c) its status as an important resident population (R), or important for its breeding (B), feeding (F), wintering (W) or migratory passage (M)

SPECIES	**Rel. Abundance (C) (U) (O)**	**Global STATUS (r) (e) (t)**	**Local STATUS (R) (B) (F) (W) (M)**
Examples: BIRDS *Pelecanus onocrotalus* *Falco eleonorae*	 (C) (U)	 (e) (t) (e) (t)	 (R) (B)

3.4.3. Flora: Describe in a few sentences the main plant assemblages significant in the area.

3.4.4. Fauna: Describe in a few sentences, which are the main fauna populations present in the area.

3.5. HUMAN POPULATION AND USE OF NATURAL RESOURCES

3.5.1 Human population

a) Inhabitants inside the area:

	Number	Date of data
Permanent		
Seasonal number (additional to permanent)		

Description of the population

Main human settlements and their populations

3.5.2 Current human use and development

a) Briefly describe the current use of the area by subsistence, artisan, commercial and recreational fishing, hunting, tourism, agriculture and other economic sectors.

b) Enter how many of the users depend on these resources, seasonality, and assessment of the social and economic importance of their use and of the perceived impact on the conservation of the area, in a score of 0-1-2-3 (meaning null, low, medium, high).

ACTIVITY AND CATEGORY	ASSESS IMPORTANCE OF Socio-economic	Conserv. Impact	Estimated No. of Users	Seasonality
FISHING				
Subsistence	0 1 2 3	0 1 2 3		
Commercial, local	0 1 2 3	0 1 2 3		
Commercial, non-local	0 1 2 3	0 1 2 3		
Controlled recreational	0 1 2 3	0 1 2 3		
Un-controlled recreational	0 1 2 3	0 1 2 3		
Other				
TOURISM				
Regulated	0 1 2 3	0 1 2 3		
Unregulated	0 1 2 3	0 1 2 3		
Indicate the type of tourism				
-.....	0 1 2 3	0 1 2 3		
-.....	0 1 2 3	0 1 2 3		
.				
.				
Tourism facilities	0 1 2 3	0 1 2 3		
FOREST PRODUCTS				
Subsistence	0 1 2 3	0 1 2 3		
Non-timber commercial, local	0 1 2 3	0 1 2 3		
Non-timber commercial, non-local	0 1 2 3	0 1 2 3		
Timber commercial, local	0 1 2 3	0 1 2 3		
Timber commercial, non-local	0 1 2 3	0 1 2 3		
Agriculture	0 1 2 3	0 1 2 3		
Stockbreeding	0 1 2 3	0 1 2 3		
Aquaculture	0 1 2 3	0 1 2 3		
EXTENSIVE STOCK GRAZING				
Subsistence	0 1 2 3	0 1 2 3		
Commercial, local	0 1 2 3	0 1 2 3		
Commercial, non-local	0 1 2 3	0 1 2 3		
OTHER ACTIVITIES				
-	0 1 2 3	0 1 2 3		
-	0 1 2 3	0 1 2 3		

3.5.3. Traditional economic or subsistence uses

Name any environmentally sound traditional activities integrated with nature, which support the well being of the local population. E.g. land, water use, target species, if closed seasons or closed zones are used as management techniques.

4. MEDITERRANEAN IMPORTANCE OF THE SITE

This Section aims at stressing the importance of the site for conservation at the regional or global scales, as set in Art. 8 para. 2 of the Protocol and B2-a, B2-b and B2-c in Annex I.

4.1. PRESENCE OF ECOSYSTEMS/HABITATS SPECIFIC TO THE MEDITERRANEAN REGION

Name the type of habitats considered of Mediterranean specificity, on the basis of the habitat classifications adopted within the framework of MAP, and their estimated cover (Ha).

4.2. PRESENCE OF HABITATS THAT ARE CRITICAL TO ENDANGERED, THREATENED OR ENDEMIC SPECIES

A critical habitat is an area essential to the conservation of the species concerned. These species should be those included in Annex II of the Protocol. E.g. Islets and sea stacks, as small islands in the sea or in large bodies of water, mostly important for water-bird colonies; caves appropriate for monk seals; undisturbed sand beaches where marine turtle nesting occurs; coastal lagoons where threatened fish or bird species feed or breed; tidal flats, coastal or benthic substrates important for marine invertebrates, etc.

Name the habitat types and the species linked to it.

4.3. OTHER RELEVANT FEATURES (Art. 8 paragraph 2 in the Protocol)

4.3.1. Educational Interest (B-3 in Annex I)

E.g. particular values for activities of environmental education or awareness

4.3.2. Scientific Interest (B-3 in Annex I)

Explain if the site represents a particular value for research in the field of natural or heritage sciences.

4.3.3. Aesthetic Interest (B-3 in Annex I)

Name and briefly describe any outstanding natural features, landscapes or seascapes.

4.3.4. Main cultural features

Indicate if the area has a high representative value with respect to the cultural heritage, due to the existence of environmentally sound traditional activities integrated with nature which support the well-being of local populations.

5. IMPACTS AND ACTIVITIES AFFECTING THE AREA

5.1. IMPACTS AND ACTIVITIES WITHIN THE SITE

5.1.1. Exploitation of natural resources

Assess if the current rates of exploitation of natural resources within the area (sand, water and mineral exploitation, wood gathering, fishing, grazing...) are deemed unsustainable in quality or quantity, and try to quantify these threats, e.g. the percentage of the area under threat, or any known increase in extraction rates.

5.1.2. Threats to habitats and species

Mention any serious threats to marine or coastal habitats (e.g. modification, desiccation, disturbance, pollution) or to species (e.g. disturbance, poaching, introduced alien species...) within the area.

5.1.3. Demand by an increased population and infrastructures

Assess whether the current human presence or an expected increase in frequentation (tourism, passage of vehicles and boats) and any human immigration into the area, or plans to build infrastructures, are considered a threat.

5.1.4. Historic and current conflicts

Make a brief statement of any historic or current conflicts between users or user groups.

5.2. IMPACTS AND ACTIVITIES AROUND THE SITE

In Art.7.2-e the Protocol calls for the regulation of activities compatible with the objectives for which a SPA was declared, such as those likely to harm or disturb species or ecosystems (Art.6.h), while Section B4 in Annex I asks to consider "the existence of threats likely to impair the ecological, biological, aesthetic or cultural value of the area" (B4-a in Annex I), recommending the existence, in the area and its surroundings, of opportunities for sustainable development (B4-d) and of an integrated coastal management plan (B4-e).

5.2.1. Pollution

Name any point and non-point sources of external pollution in nearby areas, including solid waste, and especially those affecting waters up-current.

5.2.2. Other external threats, natural and/or anthropogenic

Briefly describe any other external threat to the ecological, biological, aesthetic or cultural values of the area (such as unregulated exploitation of natural resources, serious threats on habitats or species, increase of human presence, significant impacts on landscapes and cultural values, pollution problems, any sectorial development plans and proposed projects, etc.), likely to influence the area in question.

5.2.3. Sustainable development measures

Comment whether the area is covered by an integrated coastal management plan, or bordering upon a zone under such a plan. Are there other opportunities for sustainable development provided for in the neighbouring areas?

6. EXPECTED DEVELOPMENT AND TRENDS[1]

The foreseeable development and trends of the site do not appear in the list of common criteria for the choice of protected marine and coastal areas that could be included in the SPAMI list, as established in the Protocol and its Annex I. Moreover, this is not always easy to assess and it is necessary to have knowledge about the site, which is not always available to all managers of protected areas; Thus, it is not obligatory to fill in the boxes in this Section 6.

On the other hand, the assessment of this foreseeable evolution and trends constitutes a dynamic supplement to the static knowledge of the site, as it appears in Sections 3, 4 and 5 above. Moreover, it is of significant importance for the definition of the objectives and the management plan of the site.

It thus appears desirable to bringing out the main outlines at least in respect to the following points:

6.1. EXPECTED DEVELOPMENT AND TRENDS OF THREATS TO AND PRESSURES UPON THE AREA

Deal briefly in succession with:

- The demographic development in and around the site
- The development of economic activities (other than tourism and recreation) within the area
- The development of local demand on tourism and recreation
- The development of tourism pressure on the area

6.2. POTENTIAL CONFLICTS IN THE AREA

Make a brief statement of potential use conflicts between the users or group of users of the site.

[1] By expected development and trends are meant the development, which is thought most likely to occur in the absence of any deliberate intervention to protect and manage the site.

6.3. EXPECTED DEVELOPMENT AND TRENDS OF THE NATURAL LAND ENVIRONMENT AND LANDSCAPES OF THE AREA: as expected arising from the evolution of the pressures

6.4. EXPECTED DEVELOPMENT AND TRENDS OF THE MARINE ENVIRONMENT AND SEASCAPES OF THE AREA: as expected arising from the evolution of the pressures

7. PROTECTION REGIME

7.1. LEGAL STATUS (General Principles “e” and Section C-2 both in Annex I)

7.1.1. Historical background of the protection of the site

7.1.2. Legal texts currently ruling the protection on the site
Enter the national conservation category, the dates and the present enforcement status of the legal instrument declaring the protection of the area. Consider both the land and the marine areas of the site. Include the full text(s) as an annex.

7.1.3. Objectives (General Principles “a” and D-1 in Annex I)
Name in order of importance the objectives of the area as stated in its legal declaration.

7.1.4. Indicate whether the national protection regime arises from international treaties enforced or from implementation measures of treaties (Art. 6.a in the Protocol).

7.2. INTERNATIONAL STATUS

7.2.1. Transboundary or high seas areas

Complete this section only if the area is transboundary, totally or partially in the high sea, or within areas where the limits of national sovereignty or jurisdiction have not yet been defined. In this case, mention the modalities of the consultation (Art. 9 para. 3A in the Protocol and General Principles “d” in Annex I).

7.2.2. International category

Mention if the area, or part of it, has been designated and on what date, with an international conservation category (e.g. Specially Protected Area, Biosphere Reserve, Ramsar Site, World Heritage Site, European Diploma, Natura 2000, Emerald network, etc.).

7.3. PREVIOUS LEGAL BACKGROUND AND LAND TENURE ISSUES

Briefly mention if the area or part of it is subject to any legal claim, or to any file open in that connection within the framework of an international body. Describe the land tenure regimes within the area, and append a map if existing.

7.4. LEGAL PROVISIONS FOR MANAGEMENT (Section D-1 in Annex I)

7.4.1. Zoning

Briefly state if the legal text protecting the area provides for different zones to allocate different management objectives of the area (e.g. core and scientific zones in both land and sea, fishing zones, visitation, gathering, restoration zones etc) and in this case the surface area in ha of these zones. Include a map as an annex

7.4.2. Basic regulations

Mention the provisions, which apply to the area concerning the implementation of Article 6 of the Protocol (paragraphs a to i), Section D5 (a to d) in the Annex I and Article 17 of the Protocol.

7.4.3. Legal competencies

Section D4 in Annex I states that the competence and responsibility with regard to administration and implementation of conservation measures for areas proposed for inclusion in the SPAMI List must be clearly defined in the texts governing each area. Additionally Art.7.4. of the Protocol calls for the provision of clear competencies and co-ordination between national land and sea authorities, with a view to ensuring the appropriate administration and management of the protected area as a whole. Mention in which way do the legal provisions clearly establish the institutional competencies and responsibilities for the administration and conservation of the area, and if being the case, their co-ordination means, including those between land and sea authorities.

7.4.4. Other legal provisions

Describe any other relevant legal provisions, such as those requiring a management plan, the establishment of a local participation body, binding measures for other institutions or economic sectors present in the area, allocation of financial resources and tools, or any other significant measures concerning the protection and management of the area or its surrounding zones.

8. MANAGEMENT

Through the General Principles, para. (e) in the Annex I, the Parties agree that the sites included in the SPAMI List are intended to have a value as examples and models for the protection of the natural heritage of the region. To this end, the Parties ensure that sites included in the List are provided with adequate legal status, protection measures and management methods and means.

8.1. INSTITUTIONAL LEVEL

8.1.1. Authority/Authorities responsible for the area

8.1.2. Other participants in the management body
Such as other national or local institutions, as stated in Section D6 in Annex I.

8.1.3. Participants in other committees or bodies
Such as a scientific committee, or a body of representatives from the local stakeholders, the public, the professional and non-governmental sectors, as in Sections B4-b and B4-c in Annex I.

8.1.4. Effectiveness
As stated in Section B4 of Annex I, assess as very low, low, moderate, satisfactory, very satisfactory, and comment as needed on the following aspects:

a) Effectiveness of the co-ordination, where existing:

b) Quality of involvement by the public, local communities, economic sectors, scientific community:

8.2. MANAGEMENT PLAN (as set out in D7 of Annex I)

8.2.1. Management Plan

State if there is a management plan (MP) and in this case include the document as an annex. In the absence of a MP, mention if the main provisions governing the area and the main regulations for its protection are already in place and how (D7 in Annex I) and if the area will have a detailed management plan within three years (D7 in Annex I).

8.2.2. Formulation and approval of the Management Plan

Mention how the MP was formulated, e.g. by an expert team and/or under consultation and/or participation with other institutions or stakeholders. State the legal status of the MP, whether it is officialized, and how, and if it is binding for other institutions and sectors involved in the area.

8.2.3. Contents and application of the Management Plan

State the degree of detail in the MP by entering YES or NO in the following list of potential contents, and assess the degree of implementation of the MP by using the 0-1-2-3 score on the right hand side:

	Existing in MP		Degree of application			
Detailed management objectives	YES	NO	0	1	2	3
Zoning	YES	NO	0	1	2	3
Regulations for each zone	YES	NO	0	1	2	3
Governing body(ies)	YES	NO	0	1	2	3
Management programmes as:						
Administration	YES	NO	0	1	2	3
Protection	YES	NO	0	1	2	3
Natural resource management	YES	NO	0	1	2	3
Tourism and Visitation	YES	NO	0	1	2	3
Education and Training	YES	NO	0	1	2	3
Research and Monitoring	YES	NO	0	1	2	3
Services and Concessions	YES	NO	0	1	2	3
Fund raising activities	YES	NO	0	1	2	3
Periodic revisions of the MP	YES	NO	0	1	2	3

8.3. PROTECTION MEASURES

By Art. 6 of the Protocol the Parties agree to take all the necessary protection measures required for the conservation of the area, particularly the strengthening the application of the other Protocols to the Convention, and through the regulation of any other activity likely to harm the natural or cultural value of the area, such as economic, recreation or research activities. As per Section D2 in Annex I, the protection measures must be adequate to the site objectives in the short and long term, and take in particular into account the threats upon it.

8.3.1. Boundaries and signing

Briefly, state if the boundaries of the area and its zones are adequately marked in the field, both on land, in the sea, and at the principal points of access.

8.3.2. Institutional Collaboration

Name the different national and local institutions or organisations with legal responsibilities or involved in the protection and surveillance of land and sea zones, and any measures or mechanisms through which their co-ordination is pursued.

8.3.3. Surveillance

Consider the adequacy of the existing protection means (human and material), and your present ability to survey land and sea uses and accesses

8.3.4. Enforcement

Briefly, consider the adequacy of existing penalties and powers for effective enforcement of regulations, whether the existing sanctions can be considered sufficient to dissuade infractions, and if the field staff is empowered to impose sanctions.

9. AVAILABLE RESOURCES

9.1. HUMAN RESOURCES (Art. 7.2.f in the Protocol)

9.1.1. Available staff

Assess the adequacy of the human resources available to the management body, in number of employees and training level, both in central headquarters and in the field. Indicate if there are staff training programmes.

9.1.2. Permanent field staff

Answer YES or NO on the current existence of the following FIELD staff categories. If YES, enter the number of staff either permanent or part-time in that category, and evaluate on a 0-1-2-3 score (0 is low, 3 is high) the adequacy of their training level.

	YES/NO		NUMBER Permanent/Part-time	ADEQUACY OF TRAINING LEVEL			
Field Administrator	YES	NO		0	1	2	3
Field Experts (scientific monitoring)	YES	NO		0	1	2	3
Field Technicians (maintenance, etc)	YES	NO		0	1	2	3
Wardens	YES	NO		0	1	2	3
Of which marine wardens	YES	NO		0	1	2	3
Guides	YES	NO		0	1	2	3
Other	YES	NO		0	1	2	3

9.1.3. Additional Support

Briefly, describe if the area currently has the advantage of other external human resources in support of its objectives, either from other national or local institutions, volunteer programmes, non-governmental organisations, academic or international organisations. Mention if there are any significant changes in prospect for the near future.

9.2. FINANCIAL RESOURCES AND EQUIPMENT

By Art. 7 in the Protocol, the Parties agree to adopt measures or mechanisms to ensure the financing of the specially protected areas (Art.7.2.d), and the development of an appropriate infrastructure (Art.7.2.f). The General Principles para. ”e” in the Annex I call upon the Parties to provide the areas with adequate management means.

9.2.1. Present financial means

Note if the basic financing is ensured: a core funding for basic staff, protection and information measures. Who provides this core funding? Briefly assess the degree of adequacy of the present financial means for the area, either low, moderate, satisfactory; e.g. the implementation of the management plan, including protection, information, education, training and research.

9.2.2. Expected or additional financial sources

Briefly describe any alternative sources of funding in use or planned, and the perspectives for long-term funding from national or other sources.

9.2.3. Basic infrastructure and equipment

Answer YES or NO to the following questions, and if YES, assess with a score of 1-2-3 (1 is low, 3 is high) the adequacy of the basic infrastructure and equipment.

	YES/NO		ADEQUACY			
Office and/or laboratory in the field	YES	NO	0	1	2	3
Signs on the main accesses	YES	NO	0	1	2	3
Guard posts on the main accesses	YES	NO	0	1	2	3
Visitors information centre	YES	NO	0	1	2	3
Self guided trails with signs	YES	NO	0	1	2	3
Terrestrial vehicles	YES	NO	0	1	2	3
Marine vehicles	YES	NO	0	1	2	3
Radio and communications	YES	NO	0	1	2	3
Environmental awareness materials	YES	NO	0	1	2	3
Capacity to respond to emergencies	YES	NO	0	1	2	3
Comment on basic infrastructure and equipment						

9.3. INFORMATION AND KNOWLEDGE

By Section D3 of Annex I, the Parties agree that the planning, protection and management of a SPAMI must be based on an adequate knowledge of the elements of the natural environment and of socio-economic and cultural factors that characterize each area. In case of shortcomings in basic knowledge, an area proposed for inclusion in the SPAMI List must have a programme for the collection on the unavailable data and information.

9.3.1. State of knowledge

a) Assess the general state of knowledge of the area.

0	1	2	3

b) Briefly describe the extent of knowledge of the area, considering at least specific maps, main ecological processes, habitat distribution, inventories of species and socio-economic factors, such as artisan fishing.

9.3.2. Data collection

Describe and assess the adequacy of any programme and activities to collect data in the area.

9.3.3. Monitoring programme

Section D8 in Annex I states that to be included in the SPAMI List, an area will have to be endowed with a monitoring programme having a certain number of significant parameters, in order to allow the assessment of the state and trends of the area, as well as the effectiveness and protection and management measures, so that they may be adapted if need be (indicators may, for instance, supply information about species status, condition of the ecosystem, land-use changes, extraction of natural resources -sand, water, game, fish-, visiting, adherence to the provisions of the management plan, etc.).

a) Is there a monitoring programme?

YES	NO

b) If NO, are there plans to start one, and when?

c) If YES, assess as low, medium, satisfactory, its adequacy and present level of development.

d) If YES, who is/are carrying out the monitoring programme?

e) If YES, briefly describe how the monitoring programme will be used in reviewing the management plan.

10. Other information, if any

11. CONTACT ADDRESSES (name(s), position(s) and contact address(es) of the person(s) in charge with the proposal and that compiled the report)

12. SIGNATURE(S) ON BEHALF OF THE STATE(S) PARTY/PARTIES MAKING THE PROPOSAL

13. DATE

ANNEX VII

REPORT OF THE WORKING GROUP 2: MONK SEAL

REPORT OF THE WORKING GROUP 2: MONK SEAL

The meeting resulted in an animated discussion in which all the participants took an active part. In general all participants agreed on the serious situation concerning the monk seal's status in the Mediterranean region and said that urgent action must be taken to fulfill the items of the Mediterranean Action Plan for the Management of the Mediterranean Monk Seal adopted within the framework of MAP.

The first observation discussed concerned the necessity of referring as the base document to the recommendations on topics to be addressed as a matter of priority in the further implementation of the ACTION PLAN FOR THE MANAGEMENT OF THE MEDITERRANEAN MONK SEAL, as adopted by the Contracting Parties (Malta, 27-30 October 1999). On the other hand, the proposal of the Secretariat made in document UNEP(DEC)/MED WG.177/4, Section 2, which asks to envisage the provisions in Paragraph 21 of the Action Plan, was not accepted by the participants as it was considered to be a premature activity before all other measures for the conservation of the monk seal had been fulfilled.

For the meantime, the working group agreed in several immediate measures to be taken in the immediate short term. A time schedule was difficult to envisage so participants asked that the Plenary agree on this possible item. The following agreed recommendations are put to the Plenary session for adoption:

- More information needs to be collected on the number of individuals surviving in each Mediterranean country so as to produce estimates on the viability of each surviving nucleus. Such data must be exchanged between countries ad between countries and RAC/SPA so as to provide a general view on the conservation status of the population in the Mediterranean.
- Sources of funding must be identified for the execution of the above data collection. For all items of the action plan that have to be fulfilled by the countries, the identification of funds remains the principal obstacle in carrying out the activities. Special support is needed for developing countries that cannot proceed with such activities due to financial constraints.
- The best experience of awareness programs geared toward the local population must be promoted by and multi lateral and bilateral cooperation.
- The RAC SPA Secretariat is requested to establish a web page with a description of all programs and any useful information concerning Mediterranean monk seal, for better communication between decision-makers.
- Meetings are more successful in achieving such goals for the local population.
- Instruments and measures for the *in-situ* conservation of the monk seal, involving awareness programs directed at the local population, need to be identified and adapted to each country based on the social and economic conditions
- Every country should formulate in the immediate future a national action plan for the protection of the monk seal based on the actions listed in the regional action plan formulated by MAP.
- The need for cooperation with other conventions (CMS and Bern Convention) is considered important considering the imminent formulation of an Action Plan for the conservation of the Mediterranean monk seal in the Atlantic, under the auspices of the Bonn Convention. Equally, the need for cooperation with FAO and GFCM concerning measures in the Mediterranean for the conservation of monk seal interacting with fisheries is also considered important.

ANNEXE VIII

GUIDELINES TO DESIGN LEGISLATION AND REGULATIONS RELATIVE TO THE CONSERVATION AND MANAGEMENT OF MARINE TURTLES POPULATIONS AND THEIR HABITATS

CONTENTS

I. Developing appropriate frameworks at national level

Where provisions of international instruments are couched in such a way that they are not ‘self-executing’, national legislation and regulations are necessary to make them operational in national legal systems. This may be done through existing national measures, or, if these are insufficient, by amending existing measures or adopting new ones.

Whether national measures should be legislative or regulatory will depend on the internal law of the State concerned. Certain matters usually have to be dealt with by legislation, notably the establishment of offences and penalties. Others can be dealt with at the level of regulations, issued by the relevant ministry or department, which can be updated and amended more easily.

An important function of national legislation is to establish institutional mechanisms with appropriate decision-making powers to develop implementing regulations, ensure compliance, monitor success and failure, and promote policies for improved implementation and any necessary legislative changes. Institutions are key to overseeing implementation and compliance, as well as to generate needed reforms. Establishing efficient institutions is one of the most important roles of legislation, though this is often underestimated.

The following sections present issues, objectives and basic indicators for making international obligations effective at national and local level.

I.1 Reviewing existing arrangements: common gaps and weaknesses

Human activities affecting marine turtles are often subject to different sectoral laws that have evolved in a piecemeal way and are administered by separate branches of government. This can create a risk of inter-sectoral policy conflicts and gaps or inconsistencies in legal frameworks.

In addition, most countries have separate planning and regulatory frameworks for activities on land and at sea (the high-tide limit of the shoreline usually marks the dividing line).

On land, conservation departments usually have responsibility for endangered species and often act as focal point for negotiation of treaties and implementation of treaty obligations. However, unless their mandate extends to conservation of marine species and areas, they cannot implement the full range of measures for turtle conservation or establish protected areas that straddle the land-sea interface.

At sea, fisheries department may have no mandate to protect endangered species or their critical habitats or to regulate or manage non-fishing marine activities (sand extraction, tourism) that can adversely affect such species.

I.1.1 Guidelines for assessing existing legal and institutional arrangements[1]

(a) Preferably coordinated with national environmental/biodiversity planning processes, each State should seek to establish a knowledge base of:

- measures that directly promote conservation of marine turtles, on land and at sea;
- sectoral measures that directly or indirectly affect marine turtles;
- relevant customary and religious rules.

(b) Each State should assess this knowledge base to identify legal and institutional measures that conflict with its international obligations and constrain marine turtle protection and management.

(c) The review process should specifically identify 'perverse incentives', such as sectoral subsidies, grants and tax benefits that may have the unintended effect of encouraging activities or development damaging to turtles or their habitats. Examples might include financial incentives for tourist development in or near turtle nesting beaches or for the manufacture/purchase of fisheries gear that falls below mandatory or recommended standards.

Example: Costa Rica's 1998 Biodiversity Act mandates the removal of negative incentives. The Ministry of Environment and Energy and public authorities, taking into consideration public interest, must revise existing legislation and propose or carry out changes necessary to eliminate or reduce incentives that are negative for conservation of biodiversity and its sustainable use and propose appropriate disincentives.

(d) The review should assess the adequacy of existing frameworks, in the light of these Guidelines. It should specifically assess whether provision is made for effective monitoring, adequate enforcement procedures and deterrent penalties for taking of turtles or destruction or damage to their critical habitats. It should also assess whether civil or administrative law remedies are available to interested parties (NGOs, individuals) for unlawful actions or omissions related to their critical habitats.

(e) Where jurisdiction over marine turtles is shared by more than one department (e.g. fisheries and nature conservation or agriculture departments), the review should assess whether the overall mandate is adequate to meet treaty obligations and whether lines of institutional responsibility are sufficiently clear and comprehensive.

(f) Based on the above, the review should aim to make proposals for the reduction and, where possible, elimination of incompatible measures and the promotion of positive legal, institutional and economic measures for marine turtle conservation.

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1 For more detailed guidance on how to carry out such an assessment, see *Reviewing laws and institutions to promote the conservation and sustainable use of wetlands* (Ramsar Handbook 3, January 2000, which incorporates Resolution VII.7 on this subject) and *A Guide to Undertaking Biodiversity Legal and Institutional Profiles* (IUCN Environmental Policy and Law Paper No.35).

I.2 Designing appropriate legislation

All laws and regulations should use clear and precise language to define the scope, requirements and procedures established by law. This is important to avoid ambiguity and facilitate effective implementation, monitoring and enforcement.

I.2.1 Key issues relate to the scope, type and general objectives, principles and content of legislation

I.2.1.1 Guidelines on scope of legislation

The geographical coverage of legislation is extremely important because turtles spend different stages of their life at sea and on land. Legal frameworks must provide a comprehensive basis for turtle protection and management throughout their terrestrial and marine range. As discussed above, this will include waters under national sovereignty or jurisdiction as well as the high seas.

(a) On land and in marine areas under national sovereignty, legislation must make it possible for the State to apply and enforce protection measures to all processes and activities and to all categories of actors (including non-nationals such as foreign tourist operators and foreign tourists that breach national or local regulations).

(b) In areas beyond national jurisdiction (the high seas), each State must ensure that fisheries legislation is broad enough to cover activities by its nationals and by vessels flying its flag. Under Art.117 of UNCLOS, all States have the duty to take, or to co-operate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas.

I.2.1.2 Guidelines on type of legislation

A State may use one or more sectoral laws or special unitary legislation to protect marine turtles. Many States implement international species conservation obligations by amending existing sectoral legislation or regulations. For marine turtles, hunting, nature conservation or fisheries laws are most commonly used.

(c) *Hunting laws* are primarily designed to regulate exploitation of species of commercial or recreational importance (usually classified as ‘game’). They provide a basis for regulating direct taking and trade and can be used in a limited way to protect species by listing those that may not be hunted (‘non-game’). This list may be contained in the Act or in regulations that sometimes have to be reissued annually.

The problem with relying on hunting legislation is that it rarely provides a basis for identifying and protecting critical habitats or developing recovery plans for threatened species. By definition, it does not apply to fisheries operations. For this reason, it is not enough on its own to implement comprehensive measures for turtle populations at all stages of their lifecycle.

(d) *Nature conservation laws* usually provide a more satisfactory basis for turtle conservation as they make it possible to combine species-based and area-based protection measures, together with management planning provisions. Protected area provisions need to be broadly based to provide for multiple use and zoning of protected coastal and marine areas. This will not be possible if the legislation is narrowly drafted or if its coverage stops at the highwater line. In such cases, parallel protection measures must be developed under fisheries legislation but this is often not the case.

(e) *Fisheries laws* (or most older ones) rarely provide a legal basis for conservation of non-target species or marine habitats or for regulation of non-fisheries activities (powered pleasure boating and jet-skiing, marine pollution, dumping etc.). Their area-based protection provisions are often single-purpose (closure of defined areas to fishing to support recovery of target stocks). The legal basis may be too narrow for management of coastal waters off nesting beaches or regulation of destructive practices.

However, fisheries legislation and the institutional mandate can be enlarged in scope to provide an integrated framework for marine biodiversity conservation.

Example: The Canadian Fisheries Act of 1985 prohibits, except under a permit, any work or undertaking resulting in the harmful alteration, disruption or destruction of spawning grounds and nursery, rearing and food supply areas on which marine animals depend directly or indirectly to carry out their life processes. The impact of projects potentially affecting fish habitats must be considered before an activity may begin.

(f) Where turtles are covered by two or more laws, these must be consistent with one another and appropriate arrangements must be made for coordinated planning and implementation by the relevant institutions.

(g) Special legislation, such as modern biodiversity or environmental protection legislation, may also be used and has the advantage of providing a single framework for all aspects of turtle conservation. However, if turtles are to be covered by a single law, this needs to be broad enough to support protection of populations throughout their range and conservation of critical habitats on land and at sea. This will generally necessitate an extension of the mandate of the competent authority.

I.2.1.3 Guidelines on general objectives and principles

National legal frameworks should be consistent with principles and approaches supported by applicable international instruments.

(h) Clear objectives provide a conceptual framework to develop the legislation itself, guide implementation, set priorities and build public and political awareness. The objectives of national legal measures should, as a minimum, correspond to the three broad objectives set out in the revised Action Plan.

(i) The legal framework should be consistent with the ecosystem approach and

provide for international, transboundary and inter-sectoral cooperation.

(j) Principles to be applied should include prevention of environmental harm; the precautionary approach; the polluter pays principle; access to information and public participation in decision-making; access to justice in environmental matters; and provision of information and assistance in environmental emergencies.

Example: The FAO Code of Conduct for Responsible Fisheries supports the application of the precautionary approach to vulnerable marine species. It recommends to States and all involved in fisheries management and conservation that "the absence of adequate scientific information should not be used as a reason for postponing or failing to take measures to conserve target species, associated or dependent species and non-target species and their environment. It further recommends that where activities may have an adverse transboundary environmental effect on coastal areas, States should provide timely information and, if possible, prior notification to potentially affected States; and consult with those States as early as possible.

I.2.1.4 Guidelines on general content of legislation

Whatever the enabling law or combination of laws, certain minimum components are essential.

(k) Legislation should provide formal backing for research and open exchange of information; capacity-building; emergency planning and response measures; and education and public awareness measures.

The Revised Action Plan provides that development of research and exchange of information should cover all the priority fields for the conservation of marine turtle population by using various methods such as surveys, tagging, data logging, satellite telemetry, Geographic Information Systems (GIS), genetics, on-board observers, and modelling. Contracting Parties that have little or no information on critical habitats and size of breeding populations of marine turtles should make particular efforts to undertake such research programmes.

(l) The competent authority (authorities) should have powers and adequate funding to:

- initiate and participate in planning processes for land and sea;
- make regulations and/or provide incentives to control or manage potentially damaging processes and activities;
- establish procedures, requirements and standards;
- undertake monitoring, inventories and surveys and require the submission of information; and
- hire and train sufficient personnel to carry out adequate coastal and beach monitoring and patrol activities for pre-enforcement education and enforcement and compliance of fisheries regulations.

I.2.2 Promoting institutional coordination and accountability

Each coastal State needs to make efficient institutional arrangements for best management practices throughout the species management unit for turtles. As noted earlier, this unit crosses territorial jurisdictional boundaries (between land and sea, between areas under local government jursidiction and national jurisdiction, between neighbouring territorial seas). It also crosses functional jurisdictional boundaries (between nature conservation, fisheries, planning, tourism and transport sectors…).

(a) Looking outwards, there needs to be systematic communication between a State's various focal points for relevant treaties and regional organisations (both fisheries and biodiversity conservation). Each branch of government should know what other relevant branches are doing, particularly in advance of negotiation rounds, meetings of conferences of the parties and meetings of regional fisheries organisations. This is not always the case.

(b) Still looking outwards, competent departments and personnel should have all necessary powers to cooperate with their counterparts in other Mediterranean coastal States for information exchange, coordinated research and management, cooperative planning on the establishment and management of transboundary protected areas and other relevant issues.

(c) Looking inwards, horizontal (cross-sectoral) coordination should be promoted between sectoral bodies responsible for activities that directly or indirectly impact on turtles and the departments with statutory responsibility for turtle protection and management. Maximum use should be made of existing coordination mechanisms and biodiversity planning processes to avoid duplication.

(d) Arrangements should support vertical coordination between different tiers or levels of government. In States with a regionalised system of government, legal responsibility for species and habitat conservation may be devolved to the provinces or regions or exercised concurrently by national and sub-national governments. Competence for fisheries and generally for activities in the public maritime domain is nearly always exercised by national government. Legal frameworks should ensure that measures adopted by provinces or regions are compatible with national measures and with treaty obligations. One way of doing this is to enact national framework legislation setting out basic norms and standards that bind lower levels of government.

(e) States should recognise the extremely important role played by local (municipal) governments in land-use planning, economic development and tourism and their primary responsibility for enforcing local regulations, controlling illegal construction and so on. These bodies are usually closest to community needs and priorities and should be key players in site-specific conservation and management strategies. Procedures should be in place to ensure that local decision-making powers are exercised consistently with national legislation and with international obligations to which the country is party.

(f) Where legislation does provide for the establishment of protected areas at sea or across the land-sea divide, it may be necessary to make special coordination arrangements where the competent authority is not the nature conservation authority.

(g) Legislation should provide a basis for conservation authorities to be systematically consulted in sectoral planning and impact assessment procedures for activities that could have adverse impacts on marine turtles, where decision-making powers lied with other institutions.

Example (terrestrial context): Hungary's Nature Conservation Act of 1996 mandates the Nature Conservation Directorate to act "as a cooperating authority" in regional and municipal planning and development procedures related to natural areas, values and unique landscape features in order to enforce the provisions for landscape protection.

II. Guidelines for conserving, managing and enhancing turtle populations

Legal measures for the maintenance and recovery of viable populations of turtle species in their natural surroundings must be broadly-based, in view of the serious depletion caused by direct taking in the recent past and the biological characteristics of the species concerned.

II.1 Species to be legally protected

Turtles have delayed maturity: the bigger (older) they are, the more they contribute to the demographic growth of the populations to which they belong. Conservation measures must therefore attach as a priority to the adult and last juvenile stages and to the preservation of natural conditions on nesting beaches. This is particularly important because the two species that breed in the Mediterranean, *Caretta caretta* and *Chelonia mydas*, appear to be genetically isolated from Atlantic populations of the same species. This means that their populations cannot apparently be increased through immigration.[2]

Marine turtles go through two main ecological phases, first pelagic and then demersal (shallow waters above the continental shelf). Exceptions may occur when turtles migrate between wintering, feeding and nesting grounds. More than a quarter of Mediterranean States have not yet enacted legislation or completed the legislative process to confer protected status on marine turtles during both these phases (source, Revised Action Plan).

II.1.1 Guidelines on scope of legal protection

(a) Legislation/regulations must confer strictly protected status on the five species of marine turtles that may occur in the Mediterranean: *Caretta caretta, Chelonia mydas, Dermochelys coriacea, Eretmochelys imbricata, Lepidochelys kempii*. The standard taxonomic references should be used as well as the common names used in the language of the State concerned.

(b) Legal protection measures must clearly apply to turtles and also all parts and derivatives, including carapace and eggs, and their nests (see below for the CITES interpretation of parts and derivatives).

(c) Turtles must be legally protected at each stage of their life cycle. One approach is for legislation/regulations to specify that the protection measures apply to all stages of life and natural development processes of marine turtles.

II.2 Prohibition of intentional “taking”

The Revised Action Plan restates international law by calling on States to eliminate the exploitation and deliberate killing of marine turtles by designing and enforcing appropriate legislation. For this purpose, legal frameworks need to address a series of actions.

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2 Background information in section 4 is taken from Gerosa G.and Casale P. 1999. *Interaction of Marine Turtles with Fisheries in the Mediterranean* (UNEP/MAP1999 RAC/SPA) and expert research cited in that publication.

II.2.1 Guidelines for prohibiting taking

(a) Legislation/regulations should specify each of the actions that is prohibited in order to promote legal certainty and to facilitate enforcement. The prohibition should apply to:

- intentional capture, killing or mutilation of turtle specimens in the wild, including hunting, fishing, injury, collection or other forms of taking;
- intentional disturbance or harassment of specimens, particularly during the period of breeding, nesting, hibernation and migration;
- intentional destruction or taking of eggs from the wild
- keeping of turtle eggs, even if empty (based on the Bern Convention obligation)
- intentional damage or destruction of turtle nests;
- attempts and conspiracies to commit any of the above actions.

(b) Although most of these terms are self-explanatory, it is useful to define more general terms such as “disturbance” or “harassment” to avoid ambiguity. Definitions used should be broad enough to include harmful but non-lethal disturbance that could for example result from non-essential scientific research.

Example: The German Nature Protection Act of 20 December 1976 prohibits disturbance of animals belonging to endangered species or their nests or breeding places, including through photography or filming. The US federal Endangered Species Act of 1973 prohibits harassment and pursuit of or harm to protected species. “Harm” is broadly defined[3] to cover significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioural patterns, including breeding, feeding or sheltering.

II.3 Strict control and reporting of exemptions

International species conservation instruments all provide for limited exemptions to the above prohibitions. The criteria they establish have many points of similarity and should be followed as closely as possible.

II.3.1 Guidelines for controlling exemptions to the prohibition on taking

(a) Where coastal States provide for exemptions, applicable criteria should be clearly and unambiguously defined by legislation/regulations, consistently with applicable international law. Tight wording is important to guide the exercise of administrative discretion by competent authorities, to promote transparency and administrative accountability and to ensure compliance by those benefiting from the exemption.

(b) The exemption must not harm the survival of the population or of any other

3 In implementing regulations issued by the US Fish and Wildlife Service.

species.

Example: The EC Habitats Directive provides that it must not be detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range.

(c) No other satisfactory solutions must be available.

Example: Under CMS, exemptions may only be granted if extraordinary circumstances so require. They must be precise as to content and limited in space and time.

(d) The taking must be for scientific, research, education or management purposes necessary to ensure the survival of the species.

Example: ACCOBAMS (which applies to cetaceans in the Mediterranean) requires Parties to limit exceptions to purposes of non-lethal *in situ* research aimed at maintaining a favourable conservation status for cetaceans.

(e) No exemptions shall be granted for traditional subsistence and cultural activities.

Source: The Barcelona Protocol states that traditional subsistence and cultural activities shall not be allowed if they would *inter alia* cause the extinction or substantial reduction in the number of individuals making up the populations or species of endangered, threatened or migratory species (Art 18).

II.3.2 Guidelines for reporting and record-keeping

(f) Competent authorities should be legally required to keep records of applications and decisions relating to exemptions and to monitor and follow up on exemptions granted. Under the Barcelona Protocol, exemptions with regard to listed Endangered or Threatened Species must be notified to the Contracting Parties.

(g) Regulations should specify the information to be included in recording systems for exemptions and, as appropriate, reports to international bodies. This is important to promote harmonised approach and establish basic common standards and transparency.

Example: Information requirements could be modelled on the relevant provisions of the EC Habitats Directive (Art.16.3), to cover:

- the species which are subject to the derogations and the reason for the derogation, including the nature of the risk, with, if appropriate, a reference to alternatives rejected and scientific data used;
- the means, devices or methods authorised for the capture or killing of animal species and the reasons for their use;
- the circumstances of when and where such derogations are granted;
- the authority empowered to declare and check that the required conditions obtain and to decide what means, devices or methods may be used, within

what limits and by what agencies, and which persons are to carry but the task;
- the supervisory measures used and the results obtained.

II.4 Measures to minimise incidental catch and mortality in fisheries operations

All marine turtle species occurring in the Mediterranean are known to be affected by fishing activities, although data on turtle-fisheries interactions is often incomplete and is lacking for certain regions. To date, many States have not yet adequately researched such interactions (see Priority Actions annexed to Revised Action Plan). Research of this kind is an essential component of ongoing strategies to design and target appropriate conservation measures.

There are many variations between States regarding the scale, type and target species of fisheries operations, the techniques used, the main areas in which fisheries activities take place and the character of the fisheries (industrial, artisanal and small coastal etc.). This means that some of the guidelines given below will not apply to all States (e.g. some of the more technical regulatory guidelines in 4.4.2).

II.4.1 General guidelines for fisheries legislation and regulations

(a) National fisheries legislation should provide for the development, implementation and enforcement of regulations to protect marine ecosystems and to minimise incidental capture, retention, harm and mortality through fisheries operations. There should be a general legal basis for the development and strengthening of fishing regulations concerning depth, season, gear and so on, especially in areas with a high concentration of turtles.

(b) States should ensure that fishers are involved in the policy formulation and implementation process relating to conservation and management of the fishery resources on which they depend and that legal rules for the implementation of fisheries conservation and management measures are effectively disseminated (see for example FAO Code of Conduct for Responsible Fisheries).

(c) Fisheries regulations should comply with requirements and recommendations issued by regional fisheries organisations or other bodies to which the State is a party or member nation. It may be appropriate for legislation to specify that regulations to implement regionally agreed technical standards must be issued by the competent authorities within a reasonable time and/or to provide for periodic review of regulations in force.

(d) Non-compliance with applicable regulations should be an offence punishable with criminal/administrative penalties as appropriate.

II.4.2 Guidelines on measures to protect marine ecosystems and communities

(a) Consistently with international fisheries law, regional rules and recommended best practice, national legal systems should provide for measures for the conservation of marine ecosystems and communities as a whole. These should be carefully designed to take account of the ecology of legally protected species and habitats. There should be a legal basis for the different types of regulatory measures described below.

(b) Measures to restrict fishing effort should provide a basis for limiting the number of craft, their total and individual power and total fishing time.

(c) Area-based measures should make it possible to close defined areas to all access or to use of certain techniques. As a minimum, zones close to the shore (less than 50m deep) with fragile marine ecosystems or critical habitats for marine species should be closed to damaging practices. In addition, areas most frequented by marine turtles should be identified and, where necessary, made subject to total or seasonal fishing reduction measures.

Example: EC Member States are required4 to draw up a list of protected zones in which fishing activities are restricted for biological reasons specific to those zones and to regulate fishing gear which may be used in protected zones, as well as appropriate technical rules on the basis of the relevant conservation objectives.

(d) Temporal restrictions (closed seasons) should be put in place where needed to protect marine turtles during the most vulnerable periods of their life cycle. Regulations for this purpose should be consistent with species protection legislation covering all life forms and natural development processes of marine turtles.

(e) Regulations should be implemented to minimise waste, discards and pollution in the course of fisheries operations.

Example: The FAO Code (sections 8.7.1-4) recommends the following practices:

- States should introduce and enforce laws and regulations based on the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).
- Owners, charterers and managers of fishing vessels should ensure that their vessels are fitted with appropriate equipment as required by MARPOL 73/78 and should consider fitting a shipboard compactor or incinerator to relevant classes of vessels in order to treat garbage and other shipboard wastes generated during the vessel's normal service.
- Owners, charterers and managers of fishing vessels should minimize

4 Council Regulation (EC) No 1626/94 of 27 June 1994 laying down certain technical measures for the conservation of fishery resources in the Mediterranean (as amended).

the taking aboard of potential garbage through proper provisioning practices.

- The crew of fishing vessels should be conversant with proper shipboard procedures in order to ensure discharges do not exceed the levels set by MARPOL 73/78. Such procedures should, as a minimum, include the disposal of oily waste and the handling and storage of shipboard garbage.

(f) Deliberate discarding or abandonment of fishing gear at sea should be prohibited, as this leads to incidental mortality as well as environmental degradation. States should cooperate to develop and apply technologies, materials and operational methods that minimize the loss of fishing gear and the ghost fishing effects of lost or abandoned fishing gear (FAO Code, section 8.4.6).

II.4.3 Guidelines for modification of fishing gear, methods and practices

(a) Fisheries legislation/regulations must prohibit or restrict the use of destructive gear and promote the development and systematic use of more selective gear, methods and strategies, in cooperation with regional fisheries organisations and other coastal States.

(b) Before new fishing gear, methods and operations are introduced on a commercial scale to an area, regulations should provide for environmental impact assessment to be carried with specific reference *inter alia* to possible habitat disturbance (FAO Code, section 8.4.7).

Three types of fishing gear are responsible for significant incidental mortality of marine turtles. These are covered by the technical regulatory guidelines in 4.4.2.1-3 below.

II.4.3.1 Trawls

Trawling practices involve the towing by one or more ships of a net which catches all animals (target, non-target) in a large mouth, kept open by various devices, and passes them to a terminal bag. Turtle mortality results from stress or drowning, where the net is kept submerged for several hours. Where trawl periods are shorter, caught specimens may be brought alive to the surface.

Trawling can be mid-water (pelagic) or involve bottom trawling (demersal). In the Mediterranean, several turtles are caught in bottom trawlers, but mortality for this reason seems to be low (Gerosa and Casale).

The relatively new technique of physical trawling (using heavy weights to physically rake the sea bed also has serious implications for marine habitats.

The revised Action Plan recommends that Mediterranean States conduct trials for the use of Turtle Excluder Devices (TEDs). TEDs are technical fitments used in trawls that are designed to divert caught turtles towards a special exit before they enter the terminal bag along with the catch. They were first developed to reduce by-catch in American shrimp fisheries in the Gulf of Mexico. A range of TEDS of different

specifications now exists to improve the selectivity of trawling practices. In certain fisheries (small target species, mainly shrimp), such devices appear to have been successful in reducing by-catch and contributing to broader marine biodiversity protection.

In the context of the Mediterranean as a whole, shrimp fishing is much less developed. However, it is extremely important in certain areas, including the Gulf of Gabes and the benthic feeding grounds of the Bay of Iskenderun. The Revised Action Plan recommends that introduction of TEDs into fishing practices in the areas where the largest catches occur (A.3.19).

II.4.3.1.1 Guidelines on trawling practices

(a) States should prohibit bottom trawling at shallow depths to protect demersal species and critical habitats in marine and coastal ecosystems. This prohibition may be permanent or seasonal, depending on the needs of turtle populations in the waters concerned.

Example: EC Regulation 1626/94 requires Member States to prohibit the use of trawls, seines or similar nets within three nautical miles of the coast or within the 50 m isobath where that depth is reached at a shorter distance, irrespective of the method of towing or haulage (unless specific derogations apply).

(b) Fishing with bottom trawls, seines or similar nets above *Posidonia* beds or other marine phanerogams should be specifically prohibited.

(c) Trawling practices should be regulated with regard to:

- maximum trawling time (to increase the chance of trapped specimens being brought alive to the surface);
- design of the trawl: States with relevant fisheries should, as soon as reasonably practicable, adopt regulations to require the use of TEDs in conformity with technical specifications appropriate to local fisheries and fishing conditions;
- handling by fishermen of incidentally caught turtles.

Example: One example of a comprehensive set of regulations is provided by the United States Code of Federal Regulations[5]. This provides that:

- with some exceptions, turtle excluder devices must be used by all shrimp trawlers in the Atlantic and Gulf of Mexico areas;
- shrimp trawlers exempt from the TED requirements must observe maximum tow-time durations ranging from 30 to 75 minutes depending on the targeted species and geographic area the trawler is fishing.

5 50 CFR 17 (b)(1)(v), 222.41, 227.72(e) (1998). The associating handling regulations are cited in 4.4.3 below.

II.4.3.2 Longlines

Surface and bottom longlining are relatively simple techniques that involve the placing of baited hooks to attract a variety of target species. Practice varies widely with regard to line length, type of bait used, depth at which the lines are placed and so on. For surface lines, turtle mortality is due to hook-related injuries or, after release by fishermen, to stress or to part of the hook and line remaining in the turtle's body. Less data is available for bottom lines.

The revised Action Plan provides that effective measures need to be identified and applied urgently, in order to minimize the accidental catches by longlines fisheries. It recommends that States conduct trials of modified longlines and, as appropriate, introduce their use into fishing practices.

II.4.3.2.1 Guidelines on longlining practices

(a) Technical regulations should, in accordance with research findings, establish minimum requirements related to line length, number and design of hooks, kind of bait, times of setting and hauling, length of line and minimum depth at which bottom long lines may be set.

(b) As a minimum, fisheries regulations should comply with rules and standards adopted by regional fisheries organisations and be updated as necessary. Relevant measures currently applicable to some or all Mediterranean States include prohibitions on:

- use of surface-set longlines from vessels greater than 24 m in length for bluefin tuna during the period from 1 June to 31 July each year (applicable to ICCAT Parties and to EC Member States under Council Regulation (EC) No 1075/96 of 10 June 1996);

- keeping on board or using surface-set longline longer than 60 km per vessel and bottom-set longline longer than 7 000 m of longline per vessel (applicable to EC Member States under EC Regulation No 1626/94 of 27 June 1994).

II.4.3.3 Drift nets and gill nets

Many different types of gill nets are used througout the Mediterranean to catch a variety of target species. They are placed vertically to fence in or block off areas of water and catch the marine organisms that try to pass through them. Turtles are caught as they move from place to place or as they feed on trapped fish. Mortality is mainly due to drowning.

Internationally, a series of resolutions and regulations have been adopted to control the use of non-selective large-scale drift nets that have serious adverse impacts on non-target species. The UN General Assembly called for a global moratorium on large-scale pelagic driftnet fishing (over 2.5km) on the high seas of the world's oceans and seas, including enclosed seas and semi-enclosed seas (UNGA Resolution 46/215 of 20 December 1991). Subsequent resolutions (especially

Resolution 52/29 of 26 November 1997) urge competent authorities of members of the international community that have not done so to take greater enforcement responsibility to ensure full compliance with Resolution 46/215 and to impose appropriate sanctions, consistent with their obligations under international law, against acts contrary to the terms of that resolution.

Stricter standards apply within the European Union under Council Regulation No 1239/98 of 8 June 1998 (see below).

II.4.3.3.1 Guidelines on drift net fishing practices

(a) All Mediterranean States with drift net fisheries must as a minimum prohibit the keeping on board or use of drift nets whose individual or total length is more than 2.5 km.

(b) In addition, EC Member States must prohibit the use of any drift nets by 1 January 2002. This ban applies to Community vessels anywhere in the world, except for the Baltic Sea.

(c) To minimise the risk of unlawful use and/or trading in such nets, States should also prohibit the manufacture, sale, distribution or transfer of such drift nets.

II.4.3.4 Regulation of turtle handling and landings

The Revised Action Plan recommends that fishermen should be trained to correctly haul, handle, release and record incidentally caught turtles and urged to release marine turtles caught incidentally. Campaigns should be also conducted to reduce mutilations and killings because of ignorance and/or prejudice with possible support from and cooperation with GFCM and ICCAT.

II.4.3.4.1 Guidelines for turtle handling

(a) States should, individually or in cooperation with other States, develop education and training programmes for fishermen on techniques for correctly hauling, handling, releasing and recording incidentally caught turtles. Where possible, they should involve existing rescue centres and aquariums.

(b) Regulatory measures should be adopted to govern handling of incidentally caught turtles and to deter their landing.

Example: The United States Code of Federal Regulations[6] provide that incidental takings of listed endangered species during fishing activities is lawful only the following general rules are observed (in addition to the specific TEDS regulations mentioned above):

- active and dead turtles must be immediately returned to the sea;
- resuscitation of inactive or comatose turtles must be attempted;

6 50 CFR 17 (b)(1)(v), 222.41, 227.71-72 (1998).

- any sea turtle caught incidentally may not be consumed, sold, landed, offloaded, transhipped, or kept below deck;
- exemption for incidental takings of sea turtles does not authorize incidental takings during fishing activities if the takings may be likely to jeopardize the continued existence of a species listed under the U.S Endangered Species Act.

II.4.3.4.2 Guidelines for turtle landings and strandings

(c) In very exceptional circumstances, it may not be safe for fishermen to release turtles caught incidentally in fishing gear and return them to the sea. Regulations should specifically apply to turtle landings to remove any incentive for landing specimens for consumption or trade purposes.

Example: Malta's 1992 Reptile (Protection) Regulations provide that any marine turtle accidentally caught by fishermen in the course of routine fisheries activities and landed at the La Valette fish market must be handed over immediately to the Fisheries Director. Specimens may only be disposed of for scientific purposes. Where applicable, fishermen must be compensated for lost equipment and earnings.

(d) Legislation/regulations should provide for the establishment of rescue centres, or the improvement of existing facilities, for the rehabilitation of sick and injured marine turtles. Such centres must be operated by appropriate scientific institutions and personnel.

(e) Countries that have high numbers of standings should establish a network of stranding observers and rescue centres along the coast of Spain. They should seek to harmonise rescue methodologies and contribute to the establishment of a common database on stranded and rescued turtles in the Mediterranean.

II.4.4 Monitoring, implementation and compliance

II.4.4.1 Guidelines on monitoring

(a) States should, individually or in cooperation with other States, establish and strengthen monitoring programmes to gather information on population status and trends. A standardised methodology should be followed in order to allow statistical comparisons to be made.

(b) A monitoring system should be in place to record the incidental capture and mortality of turtles through fisheries operations. Fishermen should be actively encouraged to participate in information networks on turtles (report sightings of turtles, participate in tagging programmes and so on).

(c) Regulations may require relevant information to be submitted as part of routine operating procedures.

Example: US Federal Regulations provide that fishing vessels' log books must contain information on sea turtles observed in the fishing area or in the vicinity of the fishing gear, on interference with fishing operations by sea turtles, on sea turtles entangled in fishing gear and released, whether alive or dead.

II.4.4.2 Guidelines on implementation and compliance

(d) Legal frameworks should establish measures to enhance compliance and facilitate enforcement. These should be consistent with international law and measures and practices supported by regional fisheries organisations.

(e) A non-exhaustive list of components of compliance/enforcement systems should include:

- a mandatory permit system for all flag vessels (whether fishing in waters under national jurisdiction or on the high sea);
- binding permit conditions that require permit-holders to comply with appropriate conservation and management measures;
- provision of meaningful sanctions, including the refusal, withdrawal or suspension of fishing permits in the event of non-compliance with such measures;
- stringent penalties for illegal fishing with dynamite, poisons or toxic materials ;
- powers to confiscate and destroy prohibited gear and gear used in the violation of applicable regulations;
- cooperative monitoring, control, surveillance and law enforcement measures;
- cooperative observer programmes, inspection schemes and vessel monitoring systems.

Example: The FAO Code specifically addresses problems linked to non-flag vessels. Without prejudice to relevant international agreements, States should encourage banks and financial institutions not to require, as a condition of a loan or mortgage, fishing vessels or fishing support vessels to be flagged in a jurisdiction other than that of the State of beneficial ownership where such a requirement would have the effect of increasing the likelihood of non-compliance with international conservation and management measures.

(f) All Mediterranean States with relevant fisheries should implement a vessel monitoring system to provide for systematic satellite tracking of flag vessels.

Example: EC Member States[7] are required to set up a vessel monitoring system designed to locate fishing vessels flying their flag and to enable the latter to communicate to the Member States in whose waters they are carrying out their activities and to indicate their position at least once every

7 Council Regulation No 686/97 25 amending Regulation No 2847/93; Commission Regulation No 1489/97 26, which establishes detailed implementing rules.

two hours. This monitoring applies to all fishing vessels exceeding 24 m. length overall or 20 m between perpendiculars. From 1 January 2000, all Community vessels exceeding the length mentioned above must be equipped with a satellite tracking device, wherever they operate, the same goes for the vessels of third countries operating in Community waters.

(g) States should extend monitoring, inspection and surveillance measures to non-flag vessels operating in waters under their jurisdiction.

Example: EC fisheries regulations have recently been strengthened[8] to provide or reinforced controls after landing, control of third country vessels in Community waters and transparency and co-operation between national surveillance authorities and the Commission in monitoring activities. The regulations provide for strengthening the monitoring of landings carried out by these vessels and subjecting such vessels to monitoring by satellite from the date on which the system will be fully applicable to Community vessels. The intention is that Community vessels and vessels of third countries in Community waters should be treated in the same manner

II.5 Measures to control trade and associated activities

Controls on trade, commercial display, possession and consumption of endangered species are essential to underpin controls on deliberate and incidental taking. The primary aim should be to eliminate any legal channels for trade and associated activities in marine turtles, parts and derivatives as well as opportunities for financial gain. The long-term effectiveness of such measures is closely linked to education and awareness-building amongst target groups or communities with traditions of turtle consumption.

II.5.1 Control of international trade

The revised Action Plan recommends that States issue instructions “prohibiting the purchase and sale of carapace and giving effect to the relevant ratified international conventions” (A.3.16). The FAO Code of Conduct for Responsible Fisheries also calls on States to cooperate in complying with relevant international agreements regulating trade in endangered species (section 11.2.4).

All Mediterranean States must be legally equipped to enforce the provisions of CITES.[9] With regard to marine turtles, the following elements should be given particular consideration in national legal frameworks.

II.5.1.1 Guidelines for applying the law to turtle species, parts and derivatives

(a) Legislation/regulations should apply to the five marine turtle species that occur in the Mediterranean and are listed in CITES Appendix I.

(b) If nature conservation legislation is used for this purpose, care should be taken that it is broad enough to cover marine species. A fairly common problem is that a legislative definition of “animal” quite often excludes fish and reptiles.

8 Council Regulation No 2846/98 31 of 17 December 1998 amending Regulation No 2847/93.
9 For further information, see Shine C. and de Klemm, C. 2000. *Guidelines for the implementation of CITES* (2nd Edition, in press).

(c) Where regulations under customs legislation are used as the basis for implementing CITES border controls, it is important to check that all listed turtle species, parts and derivatives feature on the Customs list. It may also be necessary to train Customs officers in recognition skills.

(d) Legislation should define "specimen" broadly, consistently with CITES, to cover live and dead turtles and their readily recognisable parts or derivatives.[10] To facilitate enforcement, it is strongly preferable to list the main parts and derivatives that are likely to feature to be traded internationally. For turtles, a basic list should include carapace (shell) in raw or worked state and in any size, scales, flippers, cartilage, oil, eggs, raw hides, skins or leather.

II.5.1.2 Guidelines on transactions to be covered and applicable criteria

(e) Legislation should prohibit the import, introduction from the sea, export or re-export of any marine turtle specimen without a valid permit issued by the appropriate Management Authority in conformity with conditions laid down in Articles III, IV and V of CITES. The legislation should cross-refer to or reproduce the CITES permit criteria. It is not satisfactory to use a vague formula like "subject to permit" as this does not guide the exercise of administrative discretion.

(f) To minimise the risk of fraudulent transactions, legislation should specifically apply to transit and transhipment[11] as is done under Tunisian legislation. Competent authorities should have the power to inspect specimens in transit or being transhipped in order to control the existence of valid CITES export documentation.

(g) Equivalent prohibitions should apply to all transactions, whether conducted between Parties or between Parties and non-Parties to CITES (Art.X).

(h) Parties may adopt stricter domestic measures regarding the conditions for trade, taking, possession or transport of listed turtle species (Art.XIV.1).

II.5.1.3 Guidelines on exemptions

(i) CITES provides for limited exemptions to the permit system (Art.VII). Parties may incorporate these exemptions into national legislation or impose more

10 Readily recognizable parts or derivatives shall be interpreted to include any specimen which appears from an accompanying document, packaging, mark or label, or from any other circumstances, to be a part or derivative of an CITES-listed animal, unless such part or derivative is specifically exempted from the provisions of the Convention (Res.Conf.9.6).

11 These are not considered as an "import" under CITES if the specimens remain in Customs control (Article VII.1). Transit includes cases where the specimens remain at all times in the aircraft, ship or other means of transport in which they were brought in, as well as cases where specimens are transferred to a different form of conveyance during their stopover. Trans-shipment should refer only to specimens that remain in Customs control and are in the process of shipment to a named consignee in another country when any interruption in the movement arises only from the arrangements necessitated by this form of traffic Any shipments that fall outside this narrow definition should be considered as imports subject to the normal CITES trade controls (COP Resolution Conf. 9.7).

restrictive conditions. For marine turtles, permitted exemptions should be kept to an absolute minimum (e.g. limited to scientific and research purposes) and worded in precise and unambiguous language.

(j) The sale of tourist souvenir specimens of Appendix-I species from places of international departure should be prohibited by all Parties (Resolution Conf. 10.6).

II.5.1.4 Guidelines on institutional arrangements for CITES implementation

(k) Each Party must designate a CITES Management Authority with general powers to issue regulations necessary for CITES implementation, as well as a Scientific Authority to advise on permit applications in accordance with the Convention.

(l) Because turtles are marine species, it may be necessary to establish a coordination procedure between the CITES Management Authority, the Fisheries Department and possibly Customs officers in order to promote consistency in the application and enforcement of CITES controls.

(m) Legislation/regulations should clearly specify which agencies and classes of officers are responsible for enforcing protection measures for CITES-listed marine species.

II.5.1.5 Guidelines on enforcement and penalties

(n) Parties to CITES must enact measures to penalise trade in or possession of specimens in violation of the Convention as well as measures for the confiscation of such specimens or for their return to the State of export (Article VIII.1).

(o) The legal framework should confer general powers on enforcement officers, subject to the law of the country concerned, to search vessels, persons and premises and to request information, inspect documents and, if necessary, make arrests.

(p) Specific powers should be available to seize turtle specimens if enforcement officers have reasonable grounds to believe that these are traded or possessed in contravention of the law.

(q) Penalties for unlawful transactions should be meaningful. It should be possible to confiscate vessels, containers or other items used in committing the offence.

(r) For confiscated specimens, detailed CITES recommendations apply to their disposal (Conf. Res.9.10 (Rev.) and 10.7):

- live confiscated turtles should be entrusted to the Management Authority, which should be required to consult with the Scientific Authority before reaching a decision on disposal. Competent authorities should exercise their discretion in accordance with the CITES Guidelines for the Disposal of Confiscated Live Animals (Conf.Res.10.7, Annex I). The Management

Authority should prepare an Action Plan on Seized and/or Confiscated Live Specimens (same Resolution, Annex 3);

- dead confiscated turtles, parts and derivatives should be transferred to an approved institution for scientific or educational purposes, or to another government agency, for official use. If this is not possible, they should be kept in storage or destroyed.
- Under no circumstances should Appendix I-listed marine turtle specimens be sold or otherwise disposed of in any way that would result in their being the object of trade.

(s) Legislation should provide for the recovery of costs of seizure, confiscation and disposal from the importer and the person for whom the import has taken place. Where the identity of these persons cannot be established, costs should be recovable from the transporter.

II.5.1.6 Controls on domestic trade, possession and consumption

Several conservation instruments require regulation of domestic trade, possession and associated activities involving marine turtle specimens.

Parties to the 1995 Barcelona Protocol should control and where appropriate prohibit commercial trade and transport of these species, their eggs, parts or products. (Art.11.3(a)). The revised Action Plan recommends that a campaign be carried out for fishermen and local populations to facilitate the implementation of legislation to ban the consumption and sale of all products derived from marine turtles.

The Bern Convention additionally requires Parties to prohibit the possession of such animals, alive or dead, including stuffed animals and any readily recognisable part or derivative thereof, where this would contribute to effective species protection.

The EC Habitats Directive also covers transport, sale, exchange, and offering for sale or exchange, of specimens taken from the wild and applies to all stages of life of marine turtles (Art.12.2, 3).

II.5.1.6.1 Guidelines for controlling domestic trade, possession and consumption

(a) Legislation/regulations should prohibit the consumption and sale of marine turtles or any products derived from sea turtles. Again, it is preferable to list the full range of trade-related activities to remove uncertainty about what is or is not covered and to give greater visibility to the problem.

Example: An indicative list of prohibited activities, drawing on legislation in France, Malta and Israel, could include: possession, transport, sale, exchange, offering for sale or exchange, purchase, exhibition, display for commercial purposes, processing, taxidermy, serving in restaurants or consumption of any turtle specimen.

(b) Exemptions to these prohibitions should be subject to permit. The legal basis for exemptions should again be narrow, precisely worded and subject to any

necessary conditions. Exemptions should only be granted for specimens that have been lawfully imported (e.g. under a scientific research permit). A record should be kept of exemptions granted.

(c) To facilitate enforcement, legislation may require a person found in possession of turtle shell or other specimen to prove that the specimen was lawfully introduced into the country or otherwise lawfully obtained. Possession is deemed to be unlawful if the person in possession cannot produce the necessary proof.

(d) In States with a regionalised system of government, controls on trade, transport and possession should be harmonised at national level to ensure consistent practice.

III. Guidelines for conserving, managing and restoring marine turtles habitats

The revised Action Plan recommends a series of legal measures for protection of habitats on which marine turtles depend.

- Each country should be encouraged to develop and implement the necessary legislation for the establishment and management of protected areas for marine turtles (para.12).
- Integrated management plans should be drafted for terrestrial and marine areas which encompass marine turtle critical habitats (para.13).
- Measures and regulations aimed at protecting critical habitats, on land and at sea, should be developed and implemented (para.14).
- All Parties that have critical habitats for marine turtles should make immediate efforts for the adequate protection, conservation and management of the areas encompassing those habitats (para.19)
- An inventory of marine turtle critical habitats, including migration routes, in the Mediterranean should be prepared urgently, and should be regularly reviewed in the light of increased knowledge (para.20).
- A network of marine and coastal protected areas throughout the Mediterranean should be created covering known areas for reproduction, feeding, migration and wintering of marine turtles (para.21).

Critical habitat conservation measures are mandated under several other treaties and instruments. The Bern Convention, for example, breaks this requirement down into three interrelated steps. Parties must:

- take appropriate and necessary legislative/administrative measures to ensure the conservation of the habitats of listed turtle species and endangered natural habitats;

- have regard in their planning and development policies to the conservation requirements of such areas, to avoid or minimise as far as possible any deterioration of such areas; and

- give special attention to the protection of areas important to migratory turtle species that are appropriately situated in relation to migration routes, as wintering, feeding and breeding areas (Arts.4.1-3).

III.1 Identification and inventories of critical habitats

At different stages of the life cycle of marine turtles, the following habitats are critical:

- nesting beaches
- summer and winter feeding grounds;
- wintering areas;
- migration routes.[12]

Preparation of inventories of endangered or threatened species' habitats is legally required under the Barcelona Protocol (Art.15). The revised Action Plan specifies that an inventory should include known sites (protected or monitored) and potential sites and should be regularly reviewed in the light of increased knowledge.

III.1.1 Guidelines for inventories of critical habitats and their legal effects

(a) Each State should give formal backing for a comprehensive inventory of marine and terrestrial critical habitats. This should as far as possible be coordinated with and build on existing inventory programmes, bearing in mind that habitats important for turtles may house other animal and plant species that are inventoried pursuant to other conservation instruments (e.g. CBD, EC Habitats Directive).

(b) The inventory should be designed to build the knowledge base about the location and conservation status of key habitats and sites so that planning and management tools can be designed and targeted to make best use of available resources.

(c) Where appropriate, the inventory should also seek to identify *potential* nesting sites and feeding and wintering areas. This information may in some cases feed into strategies for site restoration and rehabilitation.

(d) Contributors of information to an inventory programme can include government and non-government[13] bodies as well as local communities and individuals.

(e) The identification of a critical habitat for an endangered species should trigger appropriate legislative/regulatory provisions by the State concerned. Allowing for differences between national legal systems and terminology, the following sequence of measures or equivalent steps should be followed:

- designation of critical habitats as 'protected' (managed for conservation objectives) and notification to owners/occupiers and relevant authorities;
- precise delimitation of habitat boundaries on a map annexed to primary legislation or incorporated in nature conservation, fisheries and/or planning regulations;[14]

12 For a summary of current research findings, see Gerosa and Casale (1999) and sources cited at p.29-30.

13 A 1998 survey of the Turkish coastline was carried out by the World Wide Fund for Nature and provided a basis for specific recommendations for conservation and management of 17 identified nesting sites.

14 The US Endangered Species Act 1973 provides for exceptions where public disclosure of these locations might expose the species to vandalism, collection or other threats, or where insufficient

- identification of existing or potential threats to a particular site;

- selection and implementation of legal measures to provide a basis for controlling or managing on-site and external activities and processes that may modify the physical, biological and ecological conditions of the habitat concerned, as well as measures for any necessary restoration.

- protection measures may be site-specific or apply to all habitat types within a defined category. If possible, they should apply automatically once a critical habitat is designated (as under the US Endangered Species Act): otherwise, their adoption is a matter of administrative discretion.

(f) National government, local authorities and public departments and agencies responsible for planning, authorisation and administration of activities affecting critical habitats should be required to exercise their functions consistently with the conservation and, where appropriate, rehabilitation of such habitats.

III.1.2 Legal tools for protection and management of nesting areas

The revised Action Plan calls on all countries that have nesting areas for marine turtles to make immediate efforts for the stringent protection of these sites. Several of the Priority Actions emphasise the need for urgent steps in named beaches.

It is essential for the States concerned to apply and enforce existing regulatory powers to control activities and development on beaches, without waiting for longer-term developments (cadastral plans, new legislation, new integrated coastal plans etc.). Using existing legal tools can lessen the strain on administrative departments and personnel on the ground. However, political will at both national and local authority level is of critical importance in this respect.

III.1.2.1 General guidelines

(a) As a minimum, the States concerned should prohibit deliberate damage to or destruction of sites used by *Caretta caretta* and/or *Chelonia mydas* for nesting (consistently with Article 12 of the Barcelona Protocol and Article 6 of the Bern Convention).

(b) Potentially damaging activities should be subject to permit, following satisfactory completion of environmental impact assessment (EIA). No public authority should grant a permit or a regulatory exemption for activities liable to damage nesting areas (individually or in combination with other activities or developments).

(c) Maximum use should be made of existing planning tools, such as setback zones and special planning areas, to protect beaches and surrounding coastal areas. This may help to secure interim protection for a beach pending the adoption of legislation/regulations to create a protected area.

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information is available when the species is listed to designate the appropriate habitats.

III.1.2.2 Guidelines for controlling the location and design of buildings, facilities and infrastructure

(d) Aquaculture and mariculture facilities (fish farms) should not be located on or near nesting beaches.

(e) Airport night flights in the area of nesting beaches must be banned.

(f) New buildings, restaurants, infrastructure and sports facilities (e.g. tennis courts) should be set back from the beach and construction restricted within a defined band or radius. The enlargement or extension of existing constructions and transport routes should be strictly controlled.

(g) Where planning permission is granted to construct buildings and facilities, binding conditions should specify the height (number of floors), density of occupation and the hours, voltage and direction of external lighting. This is essential to minimise photo-pollution and the disorientation of hatchlings caused by artificial light.

(h) Sewage and waste disposal arrangements should not involve discharge of untreated waste to the sea. Tourist operators should be required to provide for and finance the necessary treatment facilities as a condition of planning permission.

(i) On beaches, the sitting and number of fixed structures (kiosks, sanitation facilities) and rented beach furniture should be strictly controlled to preserve natural conditions on the beach. Planting trees or non-indigenous plants in the nesting beach sand must be prohibited. Authorisation for other beach uses should only be granted if compatible with the ecological needs of turtles and hatchlings using the beach and the protection of nests. Beach furniture must be removed at night and stacked at the back of the beach.

(j) Large litter bins should be placed in non-obstructive windproof positions, covered and emptied daily. Dumping of litter must be prohibited. Garbage dumps should not be located on or near nesting beaches, as these attract seabirds, which predate hatchlings.

(k) All nesting beaches should be cleaned by hand at any time of year. Mechanical means such as bulldozers should never be used.

(l) The development of marine facilities (yacht marinas, mooring and anchorage points) in the vicinity of nesting beaches should be rigorously controlled. No groynes or breakwaters to be built on or near nesting beaches.

(m) Applicable planning rules and conditions should be included in a publicly-accessible land registry. Planning authorities should have legal powers to impose “stop” or demolition orders for illegal construction or encroachment.

(n) Where competent authorities do not exercise enforcement powers with regard to unlawful development or activities, interested parties – specifically including NGOs – should have legal standing, funding and resources to bring proceedings for judicial review of administrative actions and, where applicable, to submit the matter to an environmental commissioner or ombudsman.

III.1.2.3 Guidelines for controlling access to and use of the beach

(o) Turtle nesting warning and information signs should be erected on all nesting beaches.

(p) No roads should be allowed along the back of the beach, and access roads to the nesting beach should be carefully arranged to prevent vehicular access to the beach. It may be appropriate to provide for the erection of barriers between car parks and access points to the beach.

(q) The use or transit of vehicles across nesting beaches should be prohibited, either permanently or at least during the nesting season (May-September). Camping, caravans and camper vans should not be allowed on all or part of the beach. Horse-riding on nesting beaches must be strictly prohibited

(r) Powers should be available to close parts of the beach to public access if necessary during the nesting season. Access to all nesting beaches should be prohibited from sunset to dawn, and the beach should be patrolled to enforce this rule.

(s) Where necessary, cages should be used to minimise nest predation. Arrangements should be made for the translocation of endangered nests by trained and authorised personnel.

(t) No hunting should be permitted where this may disturb or harass turtles or other protected species.

III.1.2.4 Guidelines for controlling activities damaging to sand lines

(u) Dune systems are extremely fragile ecosystems and must be preserved. Moto-cross and similar events must be prohibited. Human access to coastal dunes should be regulated where necessary to conserve these sites.

(v) The extraction of sand and shingle from dunes, foreshores and estuaries, and core drilling for mineral exploration on or near turtle nesting beaches, should be prohibited where this may adversely affect critical turtle habitats.

(w) Where an application is made to renew an operating licence or concession for such activities, the competent authority should assess the compatibility of the activity concerned with turtle conservation requirements before deciding whether to renew or refuse a new licence or concession. If the licence is renewed, appropriate conditions or operating criteria should be attached as necessary.

III.1.2.5 Guidelines for controlling nautical activities in inshore waters

(x) Jet-skiing, water-skiing and other sea sports that can cause incidental mortality or disturbance to turtles should be subject to geographic and seasonal restrictions as appropriate. During nesting season, corridors for sea sports should not be demarcated in waters used by turtles to access nesting beaches.

(y) Where corridors or operating licences are allocated to tourist operators, non-compliance with applicable rules should be grounds for withdrawal of the licence or termination of the concession. The terms of the licence or concession should be publicly accessible, except for commercially sensitive information.

(z) Underwater activities near nesting beaches should be prohibited. Turtles should be protected from harassment by 'turtle watching' tourist boats.

III.2 Legal tools for protection and management of marine habitats

Critical marine habitats include benthic feeding grounds, shallow waters used for wintering and deeper waters frequented by turtles during migration and for feeding during their pelagic phase. Although some Mediterranean sea areas are known to house high turtle populations (e.g. the Gulf of Gabes is an important foraging or feeding area for both juvenile and adult turtles throughout the year), much research is still needed into habitats and migration routes.

III.2.1 Guidelines for conserving critical marine habitats

(a) States should equip themselves with a legal basis to designate and legally protect identified critical habitats in waters under national sovereignty or jurisdiction (territorial waters, continental shelf and the waters above, EEZ where applicable). Fisheries legislation will usually provide the most suitable framework but may need to be amended for this purpose.

(b) Appropriate regulatory measures may include permanent or seasonal closure to fisheries, modification of fishing gear, controls on dumping and discards and restrictions on navigation and vessel movements consistent with international law. It may be necessary to exclude non-fisheries vessels such as powered pleasure boats or to impose speed restrictions on a permanent or seasonal basis to minimise the risk of turtles being hit by propellers or hulls

(c) Consultation and collaboration should be actively promoted between nature conservation interests, the fishing sector, the boating and tourist industry and other stakeholders. Particularly because enforcement presents logistical challenges at sea, efforts should be made to develop agreed best practices and to build awareness and support in different key sectors.

(d) For the high seas, protection of critical habitats can only be implemented through regional cooperation. The 1995 Barcelona Protocol provides a legal mechanism for the establishment of Specially Protected Areas of Mediterranean Importance in the high seas, subject to the approval of the Meeting of the Parties established under the Protocol. All Parties to the Protocol will be bound by the protection rules adopted for a SPAMI.

III.3 Legislation for marine or mixed protected areas (MPAS)

Relatively few Mediterranean States have a legal or institutional framework to establish and manage marine protected areas, whether entirely at sea or across the land-sea divide. Conventional protected area legislation often applies only on land, while area-based protection, measures under fisheries legislation are usually narrow in scope. Such laws are ill-equipped to promote multiple uses of coastal areas consistently with turtle conservation requirements.

III.3.1 General guidelines for MPA legislation[15]

(a) In the short term, existing legal processes and tools should be used and flexibly combined to provide maximum protection for key sites and build public awareness. Appropriate action will vary from one country to another, depending on culture, tradition and legal processes. In some cases, it may be enough to upgrade the management category of an existing protected area to confer more effective legal protection

Example: In some cases, legal protection can be progressively extended (usually from land out to sea) as support grows for an MPA. This was done in the Port-Cros Marine National Park, France (Europe's first MPA). In Ecuador's Galapagos Islands, the land area (comprising 13 major islands) was first designated as a national park; the near and offshore waters around the islands were separately designated as a Marine Resources Reserve in 1986; and in 1998, special legislation was adopted, which brought all waters within 40 nautical miles of the outer perimeter of the islands under the jurisdiction of the National Park Service. The Service is now responsible for fisheries and a artisanal fisheries management plan is under development (Special Law for the Conservation and Sustainable Development of the Province of Galapagos)

(b) States that have not already done so should take priority steps to amend existing legislation or enact new legislation to provide a legal basis for integrated protection and management across the land/sea interface.

15 These principles are partly drawn from Kelleher G. (ed.) 1999. *Guidelines for Marine Protected Areas*. Best Practice Protected Area Guidelines Series No.3. IUCN-The World Conservation Union (especially Chapter 2 on Legal Frameworks).

(c) For this purpose, States should decide whether to adopt site-specific legislation or 'umbrella' legislation that generally provides for the future establishment of MPAs by secondary regulations.

Example: Italy has adopted a framework Sea Protection Law of 31 December 1982, which provides a general basis for establishment of marine reserves: site-specific regulations may be adopted for the designation and management of individual MPAs.

Example: Site-specific legislation may be particularly appropriate for large MPAs. In Australia's Great Barrier Reef Marine Park, legislation provides for a special management authority and zoning system. Iceland has also adopted a special law to create the Breiðafjarðar Conservation Area, which includes a marine area, its coastline and a very large number of small islands.[16]

(d) When designing an MPA system, planners should also consider whether to propose a small number of large MPAs or a large number of smaller ones (perhaps linked to community-based management). They should specifically avoid any fragmentation of important nesting sites, and promote the development of complementary environmental policies in the surrounding ecosystem.

(e) Legislation should provide for clear delineation of boundaries and establish a restrictive procedure for the alteration of boundaries. The legal procedure used to establish an MPA (primary/secondary legislation, public enquiry etc.) should also be followed if there is a proposal to abolish the MPA or to reduce its size. This is very important to secure long-term conservation of the area, even if there is a change of political direction. Equivalent safeguards against changing SPAMI boundaries are laid down by the Barcelona Protocol (Art.10).

III.3.1.1 Guidelines for basic components for establishing and managing MPAs

(f) The primary objective of an MPA should be conservation, as broadly defined by the World Conservation Strategy to include conservation of biological diversity and biological productivity. Legislation should recognize the link between protection and maintenance of ecological processes and states and the ecologically sustainable use of living resources, particularly by local users including fishermen.

(g) Institutional mechanisms are needed to establish specific responsibility, accountability and capacity for management of the MPA. For mixed land-sea protected area, there should be if possible an integrated system of administration and management. Failing this, management of the constituent parts should be fully coordinated.

16 Law of 8 March 1995.

(h) For each MPA, it must be decided whether management responsibility should be allocated to existing agencies or whether a new agency should be created. Appropriate action will depend on the circumstances of each case. Choosing an existing institution usually has the advantage of minimising inter-agency disputes or delay, but may be perceived as too sectoral. Where there is strong public and political support for a new agency, this should have an objective and balanced structure that includes full representation of local and national civil society, including environmental NGOs.

(i) Coordination with other institutional processes should be established. The legal instrument should specify the relationship between the MPA institutional structure and other national and local authorities. It should provide for coordination of planning and management by all agencies with statutory responsibilities for internal or external activities affecting the MPA and establish a procedure for resolution of conflicts between different agencies.

(j) Public participation and consultation processes should preferably be backed by legislation/regulations. Appropriate procedures need to be put in place to maximise the involvement of local communities, NGOs and users of the coastal and marine environment, *inter alia* through representation on a consultative committee. There should be opportunities for participate with the MPA management agency at all stages of preparation of management and zoning plans.

(k) Like any protected area, an MPA should be managed for perennity (long-term conservation) and ecological integrity. Management rules and criteria for decision-making should be developed with due regard for a State's international commitments and recognised best management practices.

Example: For Specially Protected Areas designated under the Barcelona Protocol, regulations should cover the dumping or discharge of waste or harmful substances; the passage, stopping or anchoring of ships; the introduction of alien species and genetically modified organisms; activities involving the exploration of the sea-bed; fishing and hunting; taking and destruction of and trade in wild animals and plants. Permit procedures should be developed for activities compatible with the conservation objectives of the SPA.

(l) A management plan should be prepared for each MPA and reviewed and revised at regular intervals (e.g. every five years). Where MPAs are established for multiple uses (usually the case in the coastal zone), there needs to be a legal basis for zoning as part of management. Management plans should prescribe appropriate regulatory and management measures for different zones within the MPA. Regulatory provisions of zoning and management plans should override inconsistent provisions in local land- use plans and sectoral plans.

III.3.2 Guidelines on financial aspects and enforcement

(m) Compensation should be considered where the establishment or extension of an MPA entails the loss of clearly-established local rights and practices. In many cases, it will first be necessary to create or update a cadastral plan for the terrestrial areas concerned in order to determine ownership and use rights for the land concerned.

(n) The legal instrument should specify financial arrangements for MPA management. Where possible, there should be a legal basis to earmark revenue generated from activities in the MPA for park management or for programmes involving local communities and/or conservation NGOs. The management authority should have legal powers to set fees, charge for concessions, provide services and operate with the same flexibility as operators in the private sector. Treasury departments in countries oppose earmarking provisions of this kind should update their policies to reflect a progressive approach for effective MPA management.

(o) The management body must have authority to delegate and enforce the rules and regulations it promulgates. The civil or administrative code should therefore provide adequate powers for personnel to take enforcement action, backed by meaningful penalties. Under appropriate circumstances, coastal or marine conservation officers should have the authority to impose on-the-spot fines for minor resource and environmental offences. For more serious violations, their authority should extend to the gathering of evidence, impounding and confiscation of equipment, imposing a court summons, and when appropriate, arrest and detention powers.

III.4 Measures to enhance compliance

(a) Where possible, incentives and non-regulatory approaches should be used to encourage voluntary conservation and a culture of self-enforcement of rules by user groups.

(b) It may be appropriate to conclude contractual management agreements between relevant agencies and local authorities, private organisations and NGOs to finance habitat management activities (patrolling, beach maintenance and protection, public information/awareness).

(c) States should recognise the positive contribution that conservation NGOs can make to turtle conservation and environmental governance through their educational, campaigning and monitoring activities and their scrutiny of administrative actions or omissions. Where feasible, there should be close cooperation between national law-making bodies, the agencies responsible for application and enforcement and competent NGOs close to the ground.

(d) Countries and institutions that provide financial assistance should establish procedures to ensure that financial and technical aid is not provided for programmes and projects that undermine international or national obligations for conservation of Mediterranean marine turtles.

Example: EC funding must, in accordance with the integration principle, take into consideration the environmental laws of the Community. The EC should not co-finance projects which have a negative impact on environmental interests that are protected under Community legislation, such as SACs protected under the Habitats Directive, unless the project complies in principle and practice with the protection requirements of that legislation. All Community funds must be granted in an appropriate policy context.[17]

(e) States that request international assistance should ensure, as a priority, that the proposed projects and programmes do not involve damage to turtle populations or critical habitats.

17 Communication on implementing Community environmental law, Com(96)500 Final.

IV. Guidelines for integrating turtle conservation measures into coastal and marine planning processes

Species-based and area-based measures for turtle protection are, as noted above, likely to be most effective when they are supported by broad-based ecosystem management policies and practices for the wider marine and coastal environment. The following sections provide brief indicators on how legal techniques and frameworks can facilitate this process of integration.

IV.1 Environmental impact assessment and planning processes

Like the CBD (Art.14), the Barcelona Protocol requires Parties to adopt a broadly-based approach to planning and environmental impact assessment (EIA). Art.17 specifies that "in the planning process leading to decisions on industrial and other projects and activities that could significantly affect protected areas and species and their habitats, the Parties shall evaluate and take into consideration the possible direct or indirect, immediate or long-term impact, including the cumulative impact of the projects and activities being contemplated".

IV.1.1 Guidelines on environmental impact assessment

(a) Each State should have procedures in place for environmental impact assessment of proposed projects that are likely to have adverse effects on marine turtle populations or their habitats. EIA procedures should be conducted in an open and transparent way and the participation of the public and conservation organisations should be promoted.

(b) EIA regulations should clearly specify the following matters:

- when an EIA is required (project type; size/cost threshold etc.);
- the information and analysis it should contain (direct and indirect impacts, short- and long-term, possible cumulative effect, areas of uncertainty, possible alternatives to mitigate or compensate for anticipated impacts etc.);
- who should carry out the EIA (where possible, this should be an independent and qualified EIA practitioner, and not the project proponent);
- which agency or institution should review the EIA during the decision-making process;
- circumstances in which a public enquiry may be required;
- criteria for determining whether a permit should be granted;
- who should bear the costs of the EIA and associated procedures.

(c) For marine turtles (and other protected species and habitats), stricter EIA requirements should apply to proposed developments in and around critical habitats and protected areas. EIA must be an integral part of tourist and development projects concerned with important nesting beaches. There should also be a legal basis for environmental impact assessment of new or modified types of fishing gear or methods and for potentially damaging categories of activities offshore.

IV.2 Guidelines for planning processes

(d) All countries use some form of territorial planning legislation to control the permitted type and density of land use and development in different locations. Most commonly, general strategic guidance is adopted at national or provincial level and must be followed by local authorities when developing detailed local plans. States and provinces must ensure that their strategic planning processes are consistent with international obligations and provide adequate visibility for nature conservation interests, including protected species.

(e) Local land-use plans usually establish a system of zones for different categories of development (residential, industrial, tourism, maintenance of natural character etc.). Nesting beaches and other designated critical turtle habitats must be clearly marked in the most protective zone of the plan ('no-building' zone or equivalent). Protected areas should be clearly delimited in local land-use plans.

(f) Particular care should be taken to ensure that areas in or near nesting beaches are not zoned for incompatible purposes or allocated an inconsistent legal status (e.g. the provision of tax incentives for high-density tourist development).

(g) In the sensitive coastal zone, consideration should be given to developing special planning rules to protect natural amenity, prevent 'ribbon strip' development and safeguard public access to the coast. Where such rules are binding on local planning authorities, this helps to promote consistent practice between different coastal municipalities. The best-known rule of this type involves setback zones or protection strips (public interest servitudes).

Example: These are required by law in several Mediterranean States or provinces. In the Balearic Islands (Spain), new construction is prohibited in dunes, coastal wetlands, on cliffs and within 100m of the shore. In France, the width of protection strips varies depending on the activity: new transit routes may not be built within 2 kilometres of the shore.

(h) Constructive working relationships should be developed between tourist operators, local authorities, nature conservation interests and other interested parties. It is important to promote responsible tourism practices through a combination of voluntary codes, regulatory sanctions and appropriate economic interests.

(i) In areas subject to high levels of tourism, it may be useful to develop a sectoral tourism plan in collaboration with tourist operators. This could involve an assessment of the carrying capacity of beach areas and inshore waters, followed by a review of planning and sectoral controls to ensure that these are adequate for turtle conservation needs.

IV.3 Integrated approaches to coastal and marine management

Integrated management of marine and coastal ecosystems is now a formal policy of the CBD institutions (*Jakarta Mandate on the conservation and sustainable use of marine and coastal biological diversity*", Decision II/10, 1995: work programme approved in 1998). The Jakarta Mandate recognizes that sectoral activities in the coastal zone, including construction, mining, shipping, tourism and fishing, can adversely affect biodiversity. Effective solutions should consider all sectors simultaneously, so that changes in policies or practices in one area are consistent with and complementary to those adopted in another. It recommends that Parties should establish and/or reinforce institutional, administrative and legislative arrangements for integrated coastal/marine management and integrate such measures within national development plans. Specific recommendations cover the establishment of marine and coastal protected areas to protect ecosystem processes and functions as well as particular species.

Many other international processes provide guidance on integrated coastal zone management (ICZM)[18]. Mediterranean States should also draw on the results of the recent EU demonstration programmes on ICZM. They should specifically promote involvement of local stakeholders in the conservation of the coastal zone, through awareness-building and practical opportunities for participation in coastal conservation projects.

An integrated framework is necessary to safeguard turtles against certain categories of damaging processes that are generated by sectoral activities, sometimes at long distance. For example, critical benthic habitats may be modified by a combination of trawling, dredging, gravel extraction, dumping of waste or rubble or pollution from marine or land-based sources. Pollution of the marine environment is mainly generated from land-based sources but also results from the dumping of persistent plastic and other debris at sea and accidental oil spills.

IV.3.1 Guidelines for legal and institutional frameworks for closer integration

(a) There is no blueprint or model for integration. One option for fairly rapid implementation is an informal or ad hoc coordination committee of key agencies and stakeholders, which can be established without the need for special legislation. It can help to build institutional and public awareness and identify areas of conflict and complementarity. In several countries, national wetland committees established to streamline implementation of the Ramsar Convention on Wetlands may provide a useful model.

(b) Another possibility is for planning legislation to establish a special institution with planning and management powers that bridge the land-sea divide and extend to the public maritime domain.

18 See bibliography for recommended further reading.

Example: In Tunisia, the Coastal Protection and Planning Agency (*Agence de protection de d'Aménagement du Littoral*) is a public body established in 1995 within the Ministry for Environment and Territorial Planning. Its statutory duties are to implement government policy for coastal protection and planning, with specific regard to the public maritime domain which must be protected against encroachments and unlawful occupation. All planning and development along the littoral is subject to permit from APAL. It must prepare an audit of existing land ownership and uses and carry out measures to identify, protect and restore natural and sensitive areas. Provision is made for monitoring procedures and for the establishment of a coastal observatory. The APAL carries out its functions under a detailed five-year management plan.

(c) Integration may be promoted through a special law (such as the pioneering 1972 US Coastal Zone Management Act) or developed progressively through the gradual amendment of legislation to reflect an ecosystem-based approach to management. This type of legislative development needs to be supported by the development of one or more institutions with a broadly-based mandate.

Example: Jamaica has taken a progressive approach to developing an integrated legal and institutional framework. Its Beach Control Act has been gradually amended since 1956 to incorporate conservation measures in the legal regime applicable to the public maritime domain. All uses, including port facilities and commercial activities on bathing beaches, are subject to permit. It is now possible to create protected areas in the foreshore and including the seabed. Fishing, motorboat use, dredging, removal of coral or sedentary species and hunting and removal of treasure may all be prohibited in such areas.

The institutional mandate of the Natural Resources Conservation Authority has been significantly broadened: since 1991, it has had responsibility for coastal areas as well as river basins and watersheds (i.e. entire ecological units). A Council on Ocean and Coastal Zone Management has been formally established to implement integrated coastal zone management. Members include representatives of local authorities, the private sector, marine navigation, fisheries and protected area management bodies. Local standing committees for coastal management are being established and will include representatives of local communities and NGOs.

(d) Marine legislation may also be used as an instrument for integrated management of the public maritime domain and marine waters. The FAO Code of Conduct calls on States to ensure that their fisheries interests, including the need for conservation of the resources, are taken into account in the multiple uses of the coastal zone and are integrated into coastal area management, planning and development (section 6.9).

Example: New South Wales (Australia) provides one example. The Fisheries Management Act (1994, amended 1997) not only regulates fisheries and aquaculture but also functions as a nature conservation law for marine ecosystems. It lays down protection measures for threatened species and critical habitats, including seagrass beds; provides for the institution of habitat protection plans, creation of marine reserves, regulation of dredging and dyking operations and prohibits introductions of alien species. Competent authorities must prepare recovery plans and address threats to biodiversity caused by destructive processes.

APPENDIX
RELEVANT INTERNATIONAL AND SUPRANATIONAL MEASURES

CONTENTS

I. Relevant international and supranational measures

Decision-makers and legislators need to take account of a series of internationally-agreed obligations and best practices, which form the baseline for the minimum content of national legal frameworks. This section describes the evolution and current position regarding key instruments and ends with a brief assessment of the existing regime.

Two distinct 'strands' of international law contain measures relevant to marine turtles:

- protection of species, habitats and ecosystems. Sources of relevant obligations include components of the Barcelona Convention regime as well as global and regional instruments for conservation and sustainable use of biological diversity; and

- management and conservation of fish stocks and other marine biological resources. Sources of relevant obligations include global and regional fisheries instruments as well as measures adopted by regional fisheries organisations.

Supranational legislation applicable within the European Union also covers these thematic areas.

I.1 The Barcelona Convention Framework

The Mediterranean Action Plan was adopted by 16 Mediterranean States and the European Community in Barcelona in 1975 (MAP Phase II was adopted in 1995). Pursuant to MAP, several instruments have been adopted to address different aspects of environmental protection and management in the Mediterranean. None of these applied specifically to Mediterranean fisheries. Early components of the Convention framework contained no binding provisions for marine turtle conservation.

The Barcelona Convention was significantly amended in 1995 to promote protection of the marine environment and the coastal region of the Mediterranean. Parties to the amended Convention are required

"individually or jointly, take all appropriate measures to protect and preserve biological diversity, rare or fragile ecosystems, as well as species of wild fauna and flora which are rare, depleted, threatened or endangered and their habitats, in the area to which this Convention applies" (Art.10).

Based on this provision, a Protocol to the amended Convention has been concluded to provide a detailed framework for protection of endangered species and their habitats in the Mediterranean.

I.1.1 Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Barcelona, 9-10 June 1995)[19]

The Barcelona Protocol lays down species and habitat protection requirements that Parties must incorporate into national legal frameworks.

Parties must identify and compile lists of endangered and threatened species in zones subject to their sovereignty or jurisdiction and accord protected status to such species. They must regulate and, where appropriate, prohibit activities having adverse effects on such species or their habitats, and carry out management, planning and other measures to ensure a favourable state of conservation of such species (Art.11.1)

Stricter obligations apply to species in the list of Endangered or Threatened Species[20]. The list includes five marine turtle species: *Caretta caretta, Chelonia mydas, Dermochelys coriacea, Eretmochelys imbricata, Lepidochelys kempii*. Parties must ensure "the maximum possible protection and recovery" of these species by controlling, and where appropriate, prohibiting:

- taking, possession or killing (including, to the extent possible, incidental taking, possession or killing), commercial trade, transport and exhibition for commercial purposes of these species, their eggs, parts or products (Art.11.3(a));

- "to the extent possible", disturbance of wild fauna, particularly during breeding, incubation, hibernation or migration, as well as other periods of biological stress (Art.11.3(b));

Parties must also:

- prohibit the destruction of and damage to the habitat of such species (Art.12.3);

- formulate and implement action plans for their conservation or recovery and continue to cooperate in implementing relevant action plans already adopted (Art.12.3);

- where a species' range extends to both sides of a national frontier or a jurisdictional limit between two Parties to the Protocol, cooperate with the Parties concerned to ensure the protection and conservation and, if necessary, the recovery of such species.

The Protocol provides a legal basis for creating protected areas to safeguard habitats critical to the survival, reproduction and recovery of endangered, threatened or endemic species of flora or fauna (Art.4(c)). It establishes detailed procedures for the establishment, planning and management of two categories of area (Arts.5-7 on Specially Protected Areas; Arts.8-10 on Specially Protected Areas of Mediterranean importance).

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19 The Protocol entered into force in December 1999. It replaces the 1982 Geneva Protocol (Protocol concerning Mediterranean Specially Protected Areas) in the relationship among the Parties to both instruments.

20 Annex II to the Protocol, adopted in Monaco, 24 November 1996.

Parties must also comply with more general requirements closely modelled on the 1992 Convention on Biological Diversity (see 2.2.1 below). They must, in particular:

- adopt strategies, plans and programmes for conservation of biological diversity and sustainable use of marine and coastal biological resources and integrate these considerations into relevant sectoral and intersectoral policies (Art.3.4);

- identify and monitor processes and categories of activities which have or are likely to have a significant adverse impact on the conservation and sustainable use of biodiversity (Art.3.5);

- provide for environmental impact assessment procedures in the planning process leading to decisions on industrial and other projects and activities that could significantly affect protected areas and species and their habitats (Art 17);

- take necessary measures for public awareness and education, scientific, technical and management research, mutual cooperation and assistance and reporting (Articles 19-23).

I.1.2 Revised Action Plan for the Conservation of Mediterranean Marine Turtles (1999)

The protection of Mediterranean marine turtles was identified as a priority target for the period 1985-1995 in the 1985 Genoa Declaration by the Parties to the Barcelona Convention.

The first Action Plan for the Conservation of Mediterranean Marine Turtles was adopted in 1989. Revisions were proposed by a Meeting of Experts (Arta, 27-29 October 1998), reviewed and approved by the 4th Meeting of National Focal Points for Specially Protected Areas (Tunis, 12-14 April 1999) and by the Meeting of MAP National Focal Points (Athens, 6-9 September 1999), and eventually adopted by the 11th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (Malta, 27-30 October 1999). These Meetings also approved Annex I to the Plan, which sets out Proposed Priority Actions for its implementation at Regional/Sub-regional and National Levels.

The Revised Action Plan takes a holistic approach to processes threatening Mediterranean turtle populations and sets out mutually reinforcing objectives, priorities, and implementation measures. Its three objectives are:

- Protection, conservation and, where possible, enhancement of marine turtle populations in the Mediterranean, with special priority accorded to *Chelonia mydas* where appropriate;

- Appropriate protection, conservation and management of marine turtle habitats including nesting, feeding, and wintering areas and migration routes;

- Improvement of the scientific knowledge by research and monitoring.

An important feature of the Revised Action Plan is its emphasis on addressing interactions of marine turtles with Mediterranean fisheries. It generally recommends that coastal States combine legally-backed tools and awareness-building programmes to address deliberate and incidental taking and take steps for protection and management of known nesting, feeding (benthic and pelagic) and wintering areas and migration routes.

The Plan emphasises that appropriate legal measures are essential to fulfil the priorities and implementation measures. It specifically recommends that:

Parties that have not yet extended legal protection to marine turtles should do so as soon as possible, especially having regard to the relevant international conventions (para.11);

Each Party “should be encouraged” to develop and implement the necessary legislation for the establishment, protection, conservation and management of protected areas for marine turtles (para.12).

The Annex to the Revised Action Plan lists concrete actions for individual States, many of which concern the adoption or strengthening of legal protection for turtles and critical habitats. These actions are to be taken forthwith and are not contingent on further research. In addition, the Plan provides for ongoing research into turtle status, biology and behaviour and recognises that readjustments may be needed when further information becomes available.

Lastly, the Revised Action Plan emphasises the importance of developing public awareness, information and education measures to meet the needs of different target groups. Depending on specific conditions, these may include the local population and visitors to nesting areas; fishermen and other stakeholders; tourists and relevant organisations; schoolchildren and teachers; and decision makers at local/regional levels.

I.2 Other Biodiversity-related treaties

Several elements of the Barcelona Protocol and/or the Revised Action Plan draw on substantive provisions of earlier treaties. These are summarised below.

I.2.1 Convention on Biological Diversity (Rio de Janeiro, 1992)

All but two Mediterranean States are party to the CBD, which applies to terrestrial and aquatic species, habitats and ecosystems. This legally binding agreement establishes a country-driven framework for biodiversity planning and legislation and for regulation or management of processes and activities that may adversely affect biodiversity.

The CBD does not prescribe measures for individual species or groups of species, which makes it less easy for Parties to apply directly to marine turtle conservation. The most relevant measures are laid down by Article 8 on *in situ* conservation and call on Parties to:

- establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;

- regulate or manage biological resources important for the conservation of biological diversity both in and outside protected areas, and promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in their natural surroundings;

- promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;

- restore degraded ecosystems and promote the recovery of threatened species; and to

- develop or maintain necessary legislation for protection of threatened species/populations.

The CBD can make an important contribution to integrated planning approaches for conservation and sustainable use of biological resources, including fish stocks. Under Article 10, Parties shall integrate relevant considerations into national decision-making; adopt measures for the use of biological resources to avoid or minimise adverse impacts on biological diversity; support local populations to develop and implement remedial action in degraded areas; and encourage government-private sector cooperation in developing methods for sustainable use of such resources. This provides a legal basis for reviewing and, where necessary, modifying sectoral activities that involve incidental environmental damage.

The CBD's work programme on integrated management of marine and coastal ecosystems should provide a supportive, if general, framework for planning coastal development in ways compatible with marine turtle conservation.

I.2.2 Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 1979)

CMS provides a global framework within which Parties must take appropriate action, individually and in cooperation, to conserve migratory species and their habitats and to avoid any migratory species becoming endangered.

The five turtle species that may occur in the Mediterranean are listed in Appendix I as endangered migratory species, for which Parties must endeavour to provide immediate protection. Article III requires Parties to:

- prohibit any "taking" of specimens of such species, broadly defined to include hunting, fishing, capturing, harassing and deliberate killing;

- endeavour to conserve and, where feasible, restore the important habitats of these species;

- prevent, remove, compensate for or minimise the adverse effects of activities or obstacles that seriously impede or prevent their migration; and

- to prevent, reduce or control factors that endanger or are likely to endanger these species.

- These species are also listed in Appendix II, which means that Range States

must “endeavour" to conclude international agreements for their conservation and management (Article IV). No such agreement has been developed for the Mediterranean.[21]

In 1999, the CMS Conference of the Parties adopted a specific resolution on by-catch of marine turtles and other species as a result of fishing operations (Resolution 6.2). This restates key obligations under the Convention and calls on Parties to strengthen measures to protect migratory species against by-catch by fisheries within their territorial waters and exclusive economic zones, and by vessels fishing on the high seas under their flags. It requests all Parties, as a matter of gravity, to continue and strengthen measures within fisheries under their control and to minimize as far as possible the incidental mortality of migratory species listed in Appendices I and II, including marine turtles. Parties to regional fisheries organisations are urged to highlight there the serious problems of incidental turtle mortality with a view to the adoption of mitigating measures.

Range States of marine turtles with relevant fisheries are urged to co-operate mutually and with other countries to reduce incidental taking, for example by sharing and further development of practical and effective mitigation devices. The Resolution calls upon all donor countries to consider helping developing countries acquire and use relevant technology and with appropriate education and training of fishermen.

I.2.3 Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington, 1973)

All conservation treaties, including the Barcelona Protocol, leave regulation of international trade in endangered species to CITES.

The five marine turtle species that may occur in the Mediterranean are listed in Appendix I of CITES (species threatened with extinction which are or may be affected by international trade). Trade in listed species, their parts or derivatives must be strictly controlled under a reciprocal system operated by the States of export and import. Parties must prohibit transactions involving a specimen of an Appendix-I listed species if the relevant Scientific Authority advises that this would be detrimental to the survival of that species.

CITES is implemented within the European Union through binding regulations[22]. Member States must adopt legal measures to control the import, export, internal sales and movements of species listed in Annex A (which includes marine turtles) as well as possession of live specimens.

21 A regional agreement for the Mediterranean has been concluded for cetaceans under CMS and may provide a useful frame of reference (Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), Monaco, November 1996).
22 Council Regulation (EC) No. 338/97 (all species listed in CITES Appendix I are listed in Annex A to the Regulation), Commission Regulation (EC) No. 939/97 as amended.

I.2.4 African Convention on the Conservation of Nature and Natural Resources (Algiers, 16 September 1968)

This regional Convention has been ratified by four African States bordering the Mediterranean. All marine turtles are listed in Class A of the Appendix and must be strictly protected. Parties must prohibit hunting, killing, taking and collection of such species and confer special protection on habitats necessary to the survival of species threatened with extinction. Strict controls apply to trade in and transport of specimens and trophies of these species.

Despite these provisions, this Convention is effectively an instrument that does not contribute significantly to conservation of Mediterranean marine turtles. It has no institutional mechanism to oversee and review implementation or adopt policy recommendations.

I.2.5 Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 19 September 1979)

This European treaty, which has also been ratified by one African Mediterranean State at the invitation of the Council of Europe, currently makes the most significant contribution to enforcement of international obligations related to marine turtle conservation.

The most significant difference between this Convention and other conservation treaties is that it has effective institutional mechanisms and procedures for scrutinising national compliance, publicising cases of non-compliance and facilitating active participation of non-governmental organisations expert in species and habitat conservation.

The five marine turtle species that may occur in the Mediterranean are listed as strictly protected animal species in Appendix II to the Convention. Parties must protect members of listed species and their habitats and give special attention to the protection of areas of importance for listed migratory species. Deliberate damage to or destruction of breeding sites must be prohibited (Arts.4 and 6). They must co-ordinate their efforts for the protection of the migratory species specified in Appendices II and III whose range extends into their territories.

A Standing Committee, composed of one or more representative of each Party, meets annually to review implementation of the Convention. Compliance with turtle-related obligations has been on its agenda since 1986 and specialist NGOs in the area of marine turtle conservation regularly attend as observers.

The Committee has developed a procedure for opening ‘case files’ where there appears to be a breach of the Convention with regard to specific sites. The decision to open a case file is often based on information contained in reports submitted by NGOs with local knowledge of the situation. The Committee may commission an on–the-spot appraisal by an independent expert. Files are usually kept open until the matter is resolved or enforcement action is initiated.

The Committee has the power to address recommendations to individual Parties concerning measures to be taken for the purposes of this Convention (Art.14).

Several recommendations adopted to date list specific actions to be taken at named nesting beaches that provide critical habitat for marine turtles. These cover the establishment of protected areas, the grant of planning permission for potentially damaging developments and matters related to tourism and other Sectoral activities. Significantly, these recommendations are sufficiently detailed to be capable of objective verification by NGOs, donors or others and to promote transparency.

Sites that have been specifically considered by the Standing Committee include Patara (Turkey), Belek (Turkey), Akamas Peninsula (Cyprus), Kaminia (Greece) and Laganas Bay, Zakynthos, Greece. The latter, which is probably the best known case, has been considered in 14 Standing Committee meetings. The file was eventually closed in December 1999, after the European Commission opened an infringement procedure for non-compliance and submitted the matter to the European Court of Justice. European Structural Funds have been blocked in the area for lack of conformity with European legislation.

The Standing Committee has also established a Group of Experts on the Conservation of Amphibians and Reptiles, which has adopted the following recommendations:[23]

- sectoral policies should indicate the requirements for the conservation of turtle species;
- action should be taken in connection with fishing policies, notably within the European Community;
- a positive dialogue should be initiated as soon as possible with all or at least significant groupings of fisheries authorities.

I.3 Instruments and organisations relevant to fisheries management and conservation

Whereas earlier fisheries instruments focussed on target species and their exploitation, recent instruments support a more holistic approach to the marine environment and include measures related to critical marine habitats and conservation of non-target species. There is also much greater emphasis on improving procedures for compliance and enforcement, a notoriously difficult matter particularly in the high seas.

The following sections briefly outline key instruments as well as the organisational arrangements for fisheries in the Mediterranean. Technical aspects are discussed in more detail in section **III.4** below.

I.3.1 United Nations Convention on the Law of the Sea (1982)

The international law of the sea, as codified in UNCLOS, sets out the rights and duties of States for fisheries management, conservation of marine species and environmental protection in each part of the marine environment. A brief summary of the legal position applicable to each jurisdictional zone is given below.

23 Report of meeting, Thessaloniki 28-31 May 1998.

- Within its territorial sea (up to a limit not exceeding twelve nautical miles measured from its baseline), a coastal State has sovereign rights over all resources, living or non-living.
- A coastal State may establish an exclusive economic zone (EEZ) beyond its territorial sea to a maximum of 200 miles from its baseline. In its EEZ, a State has *sovereign rights* for exploring, exploiting, conserving and managing natural resources. It must ensure that maintenance of living resources is not endangered by over-exploitation and that populations of species associated to or dependent on harvested species are maintained above levels at which their reproduction may become seriously threatened. The State also has *jurisdiction* over scientific research and the protection and preservation of the marine environment.
- A coastal State has sovereign rights over the whole continental shelf, even where it extends beyond the 200 mile limit of a declared EEZ. Where the shelf does not extend as far as 200 miles (as is more usual), the coastal State has sovereign rights over the sea bed beyond the end of the continental shelf up to the 200 mile limit.
- The high seas are beyond the limits of national jurisdiction. These waters are open to all States and the principle of freedom of fishing applies, subject to general conservation and management rules laid down by Articles 116-120 of UNCLOS and to other treaty obligations a State has accepted. All States are required to co-operate with each other to conserve and manage living marine resources in the high seas, including associated and dependent marine species.

States bordering a semi-enclosed sea, such as the Mediterranean, must cooperate in exercising their rights and duties, either directly or through an appropriate regional organisation. They should coordinate management, conservation, exploration and exploitation of the living resources of the sea, implementation of their rights and duties for protection and preservation of the marine environment and scientific research policies (Art.123).

I.3.2 UN Straddling Stocks Agreement (1995)

Because migratory fish move across different fisheries areas, conservation measures need to be defined jointly by all parties concerned.

Under the UNCLOS, common conservation and management rules for straddling fish stocks (stocks located across one or several EEZs and the high seas) and highly migratory fish stocks have now been laid down by the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (not yet in force).

The Agreement requires States to apply the precautionary approach to conservation and management of these stocks in their EEZs, taking into account uncertainties concerning the impact of fishing activities on non-target and associated and dependent species (such as marine turtles). They should not exceed precautionary reference points set out in an appendix to the Agreement.

States must take measures to minimise pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species, in particular endangered species.

Compliance and enforcement provisions cover the duties of the flag State to control vessels flying its flag (e.g. to ensure that they do not conduct unauthorized fishing within areas under the jurisdiction of other States) and the rights of a port State to take measures to promote the effectiveness of conservation and management measures. States must cooperate to ensure compliance with such measures and establish procedures for boarding and inspection through subregional/regional fisheries organisations. The Agreement lays down procedures to be followed pending the adoption of such measures by these organisations.

The UN General Assembly[24] has recently called on States and other entities to integrate requirements for environmental protection, notably those resulting from multilateral environmental agreements described in I.1 above, in the management of these fish stocks.

I.3.3 FAO Compliance Agreement (1994)

The Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas was concluded under the auspices of the UN Food and Agriculture Organization (Rome, 23 November 1994, not yet in force). It establishes measures to promote the harmonised monitoring of fishing activities in international waters and to deter reflagging of vessels as a way of avoiding compliance with measures applicable on the high seas. Parties must ensure that vessels flying their flag do not engage in any activity that undermines the effectiveness of international conservation and management measures. Fishing in the high seas should be subject to a permit from the flag State and permit conditions must be complied with. In the event of non-compliance, Parties must take enforcement measures. Sanctions for serious offences must include the refusal, suspension or withdrawal of permits. Parties must maintain a record of fishing vessels authorised to fish on the high seas and make this information available to FAO.

I.3.4 FAO Code of Conduct for Responsible Fisheries (1995)

This non-binding global Code, adopted unanimously by FAO Member Nations on 31 October 1995, sets out principles and standards to ensure effective conservation, management and development of living aquatic resources, with due respect for marine and coastal biodiversity. It is addressed to States, international governmental and non-governmental organisations and all those involved in the conservation of fishery resources and management and development of fisheries. The Code is fully integrated with the Straddling Stocks and Compliance Agreements summarised above.

The Code provides a comprehensive basis for States to review and strengthen policy, legal and institutional measures for responsible fisheries. It is particularly relevant to these Guidelines because it goes beyond fisheries management to cover

24 A/RES/54/32, 19 January 2000.

conservation of critical habitats, integration of fisheries into coastal area management, regulation of damaging processes such as pollution and the need for participative approaches with fishing communities. Selected provisions of the Code are referenced later in these Guidelines.

Mediterranean States and other stakeholders involved in Mediterranean fisheries should as a priority consult and follow this Code when developing or strengthening legal and institutional frameworks for fisheries management and conservation of marine living resources and ecosystems.

I.3.5 General Fisheries Commission for the Mediterranean

The General Fisheries Council for the Mediterranean was established in 1949 as a UN institution under the auspices of the FAO to coordinate activities related to fishery management, regulations and research in the Mediterranean and Black Seas.

In 1998, following a series of intergovernmental meetings involving the EC, the institution was reformed and renamed the General Fisheries Commission for the Mediterranean. It now provides a forum for multilateral cooperation between all the countries whose vessels are fishing in the Mediterranean and has a broader mandate to promote the development, conservation, rational management and best utilisation of living marine resources of the Mediterranean basin. The European Community adhered to the GFCM in 1998 and has promoted the adoption of procedures consistent with those of other regional fisheries organisations (RFOs). A scientific fisheries committee has been established, meetings now take place annually and provision has been made for an autonomous budget.

The GCFM has the power to formulate and recommend appropriate measures for this purpose, notably to:

- regulate fishing methods and fishing gear;
- prescribe the minimum size for individuals of specified species; and
- establish open and close fishing seasons and areas.

The GFCM has adopted measures to ensure that fishing vessels flying the flags of non-member nations do not undermine regional conservation and management measures.

I.3.6 International Commission for the Conservation of Atlantic Tunas

The Commission, established under the International Convention for the Conservation of Atlantic Tunas (ICCAT), has jurisdiction regarding fisheries of tuna and tuna-like fishes in the Convention Area (which includes the Mediterranean as a connected sea). This RFO aims to manage stocks of tuna and other associated species in these waters and has the power to adopt resolutions that are binding on its Parties. Existing resolutions include measures to regulate bluefin tuna fisheries in the Mediterranean and the use of large-scale pelagic drift-nets.

A GFCM/ICCAT Joint Working Group on Stocks of Large Pelagic Fishes has been convened on an ad hoc basis to promote institutional synergy.

I.4 Supranational measures applicable in the European union

I.4.1 Implementation of Community legislation by Member States

Four Mediterranean States (Spain, France, Italy, Greece) are Member States of the European Community. Several other States around the Mediterranean, including Croatia, Cyprus, Malta, Slovenia and Turkey, have begun pre-accession talks with the European Community. These candidate States will need to take progressive steps to bring their legal frameworks into compliance with European norms.

Member States are bound to implement legal instruments adopted by the various Community institutions, which are designed to secure harmonised implementation of agreed policies throughout the European Union. Whereas EC Regulations are directly applicable in Member States, EC Directives must be transposed into national legal systems within a defined period of time. “Transposition” refers to legislative, regulatory or administrative measures taken by any competent authority of a Member State to incorporate the obligations, rights and duties enshrined in Community directives into the national legal order. It also includes any additional provisions, such as the amendment or repeal of conflicting national provisions which are necessary to ensure that national law as a whole properly reflects the provisions of a directive[25].

I.4.2 EC Habitats Directive (1992)

The European Community is party in its own right to the Barcelona Convention, CBD, CMS, and the Bern Convention and as noted earlier, a signatory to the Mediterranean Action Plan. The Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC of 21 May 1992) is the key Community instrument laying down biodiversity-related measures consistent with these treaties for implementation by Member States.

The five species of marine turtles occurring in the Mediterranean are listed in Annex IV (Animal species of Community interest in need of strict protection). Member States must strictly protect these species through prohibitions on:

- deliberate capture, killing, disturbance, destruction or taking of eggs from the wild;
- deterioration or destruction of breeding sites or resting places; and
- possession, transport and associated activities. (Article 12).

Caretta caretta is also listed in Annex II (Animal species of Community interest whose conservation requires the designation of special areas of conservation). This means that it benefits from mandatory habitat conservation requirements. For Annex II species, Member States must propose sites that contribute significantly to their maintenance at or restoration to a favourable conservation status as Special Areas of Conservation (SACs). The Directive sets out detailed rules for the establishment of a coherent European ecological network of SACs (Natura 2000), including conservation, management planning and impact assessment rules for SACs (Art.6). For aquatic species that range over wide areas, SACs should be proposed only where there is a clearly identifiable area representing the physical and biological factors essential to their life and reproduction (Art 4.1).

25 Communication on implementing Community environmental law, Com(96)500 Final.

Caretta caretta is currently the only marine turtle species listed in Annex II. This is because it is the only turtle species that nests on the beaches of an EC Member State and reproduces in Community waters. If and when Cyprus and/or Turkey become Member States of the European Community, it will then be possible to include the seriously endangered *Chelonia mydas* in Appendix II.

I.4.3 EC Fisheries Regulations

Community fisheries measures are developed within the framework of the Common Fisheries Policy (CFP), which will be revised in 2002. The EC has competence for fisheries management and conservation within Community waters: outside Community waters, its core responsibilities are to make proposals and to negotiate on behalf of the Community in international fora and to monitor the implementation of control and enforcement rules applied by the Member States. It has also concluded bilateral fisheries agreements with some third countries (non-EU States). The International Council for the Exploration of the Sea (ICES) also provides key scientific support for implementation and review of the CFP.

There is an increasing focus on integrating environmental issues into EC fisheries policy. The EC Scientific, Technical and Economic Committee for Fisheries was restructured in 1997 to expand representation of experts in the fields of fisheries economics and the environment. The Community Strategy on Biological Diversity26 provides for the preparation of an Action Plan for the fisheries sector (due for completion in 2000) with two key objectives:

- to conserve commercially fished species of marine finfish, in order to achieve sustainability of stocks, fishing opportunities and food supply, and

- to reduce the impact of fishing and aquaculture operations on other components of the ecosystem i.e. non-target species (at all taxonomic levels) and marine habitats.

The main forum for debate with stakeholders is the Advisory Committee for Fisheries and Aquaculture. This Committee was reformed in 1999 to promote closer dialogue with the fishing industry and groups concerned with the impact of the CFP on consumers, the environment and development.[27] The aim is to promote better understanding of the overall context of the CFP so that, in addition to the legitimate defence of special interests, each group acknowledges the rights of other groups and the limitations of the natural environment.[28]

The EC is a contracting party to several regional fisheries organisations, including the GFCM and ICCAT. Where RFOs issue recommendations setting catch limitations and other conservation rules for certain species, the Community is responsible for ensuring the timely incorporation of the necessary technical measures into the

26 COM(1998)42, endorsed by the Council on 21 June 1998.
27 Action plan (XIV/859/99); Commission Decision of 14 July 1999 renewing the Advisory Committee on Fisheries and Aquaculture 1999/478/CE (OJ L 187/70).
28 Report from the Commission to the Council and the European Parliament on the application of the Community system for fisheries and aquaculture in 1996-1998 (COM(2000) 15 Final, 24 January 2000).

Community legal order. This is generally done by means of binding fisheries regulations with which Member States must comply. Given the rising number of such technical rules, the Commission is progressively consolidating existing measures in order to increase clarity and improve enforcement of Community legislation.[29] For example, it is currently developing a single regulation to bring together technical measures to protect highly migratory species, whether these are fished by Member States' fleets in Community waters or on the high seas.

Specific conservation rules for Mediterranean marine turtles have been established under the Regulation laying down certain technical measures for the conservation of fishery resources in the Mediterranean[30]. Member States must provide for the conservation of listed fragile or endangered species or environments, including all marine turtle species occurring in the Mediterranean, coastal wetlands and beds of marine phanerogams.

Clearly, the CFP can only be implemented effectively if decisions taken at Community level are followed up by the necessary actions at national level. Developments in the Community control and enforcement regime are discussed in below.

I.5 Assessment of the existing regime with regard to marine turtles

The preceding summary reveals a pattern of separate, cumulative development of biodiversity-related and fisheries instruments. This reflects the traditional separation of 'conservation' and 'exploitation' interests, which has been embedded for decades in international law-making and institutional organisation. Different instruments have different Contracting Parties: there are many overlaps but little in the way of formal linkages or coordination.

This fragmentation makes it difficult to get a clear picture of the body of rules applicable to Mediterranean marine turtles. They have low visibility within the existing international regime as a whole, even though the position is slowly improving.

None of the biodiversity-related treaties explicitly address interactions between marine turtles and tourism or fisheries, although the Barcelona Protocol places important emphasis on action planning and provides a legal basis for regulating or prohibiting fishing and other activities in Specially Protected Areas. However, very recent non-binding instruments – the Revised Action Plan, CMS Resolution 6.2 – do emphasise the need to initiate systematic dialogue and coordination with the regional fisheries organisations.

In a European context, the Bern Convention has made a remarkable contribution through the proven willingness of the Standing Committee and observer NGOs to deploy resources and keep up pressure on individual countries. However, its

29 E.g. Regulation No 850/98 for the Conservation on Fishery resources through Technical Measures for the Protection of Juveniles of Marine Organisms", adopted by the Council on 30 March 1998. This contains measures for the harmonisation of mesh sizes over the whole of the area covered by the Regulation; significant reduction of the amount of mandatory discarding; increase of selectivity of fishing gears; and simplification of the rules to improve monitoring and control.

30 Council Regulation (EC) No 1626/94 of 27 June 1994. This has been amended on several occasions to implement recommendations issued by ICCAT for the management of bluefin tuna and swordfish. These concern minimum landing sizes, seasonal closures and restrictions on the use of aircraft as an aid to fishing operations.

contribution is basically confined to terrestrial habitats. There is no equivalent procedure under any international instrument for marine terrestrial habitats. For African Mediterranean States, regional conservation rules have been comparatively weak until the very recent entry into force of the Barcelona Protocol.

Modern fisheries instruments have made dramatic progress insofar as they now address the effects of fishing activity on the whole ecosystem, not just on commercially valuable target species (De Klemm, 2000). Internationally, there is now a legal basis to take conservation needs of marine turtles and critical habitats into account when negotiating and designing technical conservation rules. However, these changes are extremely recent, key fisheries agreements are not yet in force and enforcement of multilateral agreements is weak. Much has to be done to build political, sectoral and community support for the kind of broad-based measures recommended in the Code of Conduct for Responsible Fisheries. In the sensitive Mediterranean context, the relationship between the European Community and the GCFM for policy development, standard setting and enforcement procedures may need to be clarified and made more transparent.

The Revised Action Plan expressly supports enhanced cooperation and coordination between Parties and with regional organisations and experts to support management of the Mediterranean as a whole. CMS Resolution 6.2 supports consultation with relevant regional fisheries organisations to obtain scientific data and to coordinate conservation measures. The Bern Convention Experts' Group on the Conservation of Amphibians and Reptiles has issued a similar recommendation.

Mediterranean marine turtle conservation would benefit from improving and streamlining linkages between all competent bodies and concerned sectors, including the fisheries and tourism sectors. The Bern Convention, Barcelona Protocol and CMS each have elements that could be better knitted together, possibly through an agreed joint work programme or memorandum of understanding for marine turtles. A catalyst for Mediterranean synergies could be the first Conference on Mediterranean marine turtles, which is currently planned for 2001. However, coordination must be an ongoing process, not a one-off event.

Lastly, no amount of resolutions or regional cooperation will suffice if Mediterranean countries do not comply with the measures described above. Existing levels of compliance with treaty obligations are too low, as shown by the list of priority actions annexed to the Revised Action Plan.

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ANNEX IX

REPORT OF THE WORKING GROUP 1 (SESSION 1)

ON IMPACT ASSESSMENT

ON SEAGRASS MEADOWS

REPORT OF THE WORKING GROUP 1 (SESSION 1) ON IMPACT ASSESSMENT ON SEAGRASS MEADOWS

1. The working group analysed the document UNEP(DEC)/MED WG.177/8 "Draft guidelines for impact assessment on seagrass meadows".
2. The subject was introduced by a presentation of Mr. Gérard Pergent on the importance of the seagrass meadows in the Mediterranean.
3. In analysing the document the following issues were discussed:

a/ the role of *Caulerpa taxifolia* and *C. racemosa* as an indirect cause for the disappearance of species;
b/ the regulations on impact studies in the Mediterranean countries;
c/ the practical measures to mitigate impacts on meadows (sea-rocks, replanting techniques);
d/ schematic draft guidelines for the part of environmental impact assessment dealing with meadows.

ad 3a/ Different participants to the workshop stated that the paragraph on the role of *Caulerpa taxifolia* and *C. racemosa* on the *Posidonia oceanica* meadows should be improved. The following change was agreed:

Concerning the introduction of alien species
The introduction of invasive species that are likely to compete directly with marine seagrasses is a relatively recent phenomenon. Even if we have at our disposal increasingly precise information on the mechanisms operating during these interactions, namely with regard to *Caulerpa* species (Villèle & Verlaque, 1995; Ceccherelli *et al.*, 2000), it is still too early to evaluate the real impact of introduced species on seagrass meadows. In fact, if this competition phenomenon does not appear to lead to a drastic regression in *Posidonia* meadows, the modifications caused, namely with regard to energy allocation and mobilisation of the plant's reserves, must be studied over a long period of time. Likewise, it is necessary to consider the meadow as a biocoenosis, notably in terms of its spatial structure (micro habitats) and the diversity of the associated flora and fauna. In addition, it seems judicious to apply the precautionary principle and to consider invasive species as factors that are likely to cause a threat for marine seagrass meadows.

ad 3b/ The Secretariat invited the focal points to review the information presented in this document and send to RAC/SPA the due corrections or new information before 10 May 2001.

ad 3c/

- The participants agreed that the term sea-rocks is inadequate for describing artificial reefs, and proposed to delete it from the text.
- Considering the fact that replantation techniques need further research and that they could be used as an excuse for new destruction of seagrass meadows, the participants proposed that the paragraph on replantation (pp. 24, 25) should read as follows:

Over the last few years, several replanting techniques have been improved, particularly as regards *P. oceanica* (Cinelli, 1980; Meinesz *et al*., 1992;

Molenaar *et al*., 1993; Genot *et al*., 1994), but some problems are still present. Concerning that it is important to continue the research with the aim of further improving the replantation techniques.
It is advisable to make sure that replanting techniques are not hijacked to serve as an excuse for new destruction. Experience has shown that in many sectors planting has been done for planting's sake, with no overall strategy. Thus, *P. oceanica* has been planted in sectors where it does not naturally exist and seems never to have existed, or in areas where the meadow is speedily retreating. At Cannes, part of the replanting of *P. oceanica* was done in an old, stable *C. nodosa* meadow; now destroying one phanerogam to replace it with another is not a very coherent strategy. It has been suggested that *P. oceanica* be replanted as a compensatory measure in the context of projects to build or enlarge pleasure boating ports. The 6 August 1992, decision of the Sanary-sur-Mer Municipal Council approving this project was later annulled by the Nice Administrative Tribunal (3 December 1992 decision; Boudouresque, personal communication).

ad 3d/ In order to facilitate the use of the document, the participants agreed that it would be useful to annex two pages with schematic draft guidelines for the portion of environmental impact assessment dealing with meadows.
The following sentence should be added, as introduction, at the end of the foreword: The main elements more directly related to the planning out of the impact assessment are summarised in Annex B.

ANNEX X: DRAFT GUIDELINES FOR IMPACT ASSESSMENT ON SEAGRASS MEADOWS

Contents

Foreword

Today the coast is seen as an “eco-sociosystem”, i.e. a complex system where natural environment and human activity interact (COI, 1997). An area where sky, land and sea meet, a mosaic of terrestrial and aquatic ecosystems, the coastline is seen as an area that is particularly fragile and coveted because the coastal strip is narrow and is a favourite site for a number of economic activities (e.g. urbanization, fishing, aquaculture, boating and tourist activities). The coexistence of these various activities, where one frequently excludes the other, gives rise to a host of problems and clashes of interests. They disturb the functioning and stability of the coastal ecosystems, particularly the marine phanerogam meadows, and put at risk their future existence. And the meadows seem to be key plant formations in terms of biodiversity, at planetary level.

Thus, in the context of the Mediterranean Action Plan, the Contracting Parties to the Barcelona Convention in 1999 adopted an Action Plan for the conservation of marine vegetation in the Mediterranean Sea. This plan aims at enabling macrophytes and the marine vegetation formations to be preserved by introducing suitable management tools. This must, via the steps adapted (e.g. the law) ensure that these formations are protected, prevent their degradation, and allow them to be maintained in a satisfactory state of conservation.

To carry out this task successfully, it is first necessary to gain a better knowledge of the Mediterranean meadows (e.g. their features, their distribution) and the stresses to which they may be subjected, in order to attempt, in a second phase, to reduce these. Achieving this second point means (i) introducing laws to protect species, (ii) setting up specially protected areas permitting the meadow habitats to be protected, and (iii) strengthening existing regulations, particularly as regards impact studies. Impact studies in fact aim at making a prospective analysis when a development that could harm the marine environment is under consideration. Insofar as up to now few Mediterranean countries seem to have specific regulatory frameworks that allow these plant formations to be taken into account (RAC/SPA, 2000), it is necessary to draft guidelines enabling all the Mediterranean countries together to carry out these impact studies.

The RAC/SPA is responsible for drafting these guidelines for carrying out impact studies. The present study comes within the context of this approach. It aims at:

- grasping the main features of the meadows and identifying the main dangers to which they are subject,
- clearly stating the present state of the regulations on impact studies in the marine environment,
- suggesting the elements which should be taken into account when carrying out an impact study, to reduce the threats to the meadows and permit their conservation.

The first part of this document frequently refers to the report of synthesis of data on meadow habitats in the Mediterranean Sea, drawn up by the RAC/SPA (2000). This report has been amended and expanded, according to the objective set.

The second and third part have been made possible by the effective collaboration of several partners (administrative and/or scientific) who are in their own countries taking part in managing or monitoring the coastline. The regulations on impact studies have indeed been established from answers to a standard questionnaire (Appendix A), and from the few legislative texts to which it was possible to have access. We should clearly state that not all the people contacted were able, by reason of their professional duties, to answer the questionnaire within the given time. The suggested synthesis does not therefore claim to be an exhaustive, detailed analysis of present legislation in each of the Mediterranean countries as regards the environment. Moreover, the analysis is not that of a legal expert specializing in environmental law, but of a biologist who is basically concerned by phanerogam meadows and their conservation.

Similarly, the elements to be taken into account in the context of meadow impact studies have been discussed by specialists. There too, the suggested elements do not claim to reflect the diversity of the analysis used by each research team working on meadows. The parameters offered were chosen according to the ease of their implementation and because these were classical parameters and/or had been standardised. But, in the interests of efficacity, a consensus should be reached on the choice of these parameters by the scientists responsible for monitoring meadows. The suggested list must therefore be seen as a rough draft and must be further and more widely debated before being finalised.

The main elements more directly related to the planning out of the impact assessment are summarised in Appendix B.

Marine phanerogam meadows

I. Introduction

Marine phanerogams are continental monocotyledonous angiosperms which, at the end of the Secondary (some 120 million years ago), returned to the marine environment. Like the terrestrial 'herbaceous plants' from which they spring, they possess an erect foliar system, borne on stems or rhizomes. Unlike other immersed vegetation (e.g. algae) they flower, fruit and produce seeds. They also have a true root system and an internal system for transporting gases and nutriments. They constitute an ecological group formed by a small number of families and species (Kuo & Den Hartog, 2000). Today, marine phanerogams give rise to dense formations called 'meadows', met with in practically all the coastal areas of the world (Short *et al.,* in press). These meadows are a feature of the infralittoral level, where they prefer to colonise the crumbly substrata.

All marine phanerogams share a set of characteristics (Kuo & Den Hartog, 2000), such as:

- they are able to live totally emerged (e.g. absence of stomata within the foliar tissues);
- they have an effective system for fixing themselves to the sediment;
- they are adapted to life in a salty environment;
- they have a hydrophilous pollination system (pollen transported by water);
- they are able to successfully compete with other marine vegetation (e.g. algae).

Marine phanerogams have several biological functions. We know that they play a part in managing fish stocks in the coastal environment and constitute a place for nurseries, shelter and food for a large number of animal species (Boudouresque & Meinesz, 1982). By regulating hydrodynamism, the meadows help maintain the coastal balance (Clarke & Kirkman, 1989).

Seven species of marine phanerogam have been signalled in the Mediterranean (Short *et al*., in press). They are *Cymodocea nodosa, Halophila stipulacea, Posidonia oceanica, Ruppia cirrhosa, Ruppia maritima, Zostera marina* and *Zostera noltii.* The two most widespread species are *Posidonia oceanica* and *Cymodocea nodosa. P. oceanica* forms vast meadows in the littoral area and very greatly affect benthic biotopes; *C. nodosa* meadows are often situated on one or other side of *P. oceanica* meadows. The mode of reproduction of these two species differs basically, for studies done in the Island of Ischia (Gulf of Naples, Italy) show that *C. nodosa* almost exclusively favours sexual reproduction whereas *P. oceanica* practically always uses asexual reproduction (Procaccini & Mazzella, 1996). This differing behaviour is perhaps not without consequence for the maintenance of both species in the face of anthropic activity. Sexual reproduction (permitting genetic mixing) increases the species' adaptability and gives it greater tolerance to environmental disturbance.

Apart from these two species, we notice the rarer presence of the *Zostera* genus (*Z. marina* and *Z. noltii*) and the introduced species *H. stipulacea,* which essentially

remains confined to the eastern part of the Mediterranean (Verlaque, 1994). Finally, in certain euryhaline lagoons, we notice the development of *Ruppia* genus (*R. cirrhosa* and *R. maritima*), which can develop even in the estuaries and graus.

A country-by-country statement of knowledge on these marine phanerogam meadows is given in RAC/SPA's report (2000). It shows that in certain sectors the data still remains very fragmentary.

II. Marine phanerogams of the Mediterranean[1]

1. Posidonia oceanica

Posidonia cretacea seems to be the oldest species. From the Tertiary (some 60 million years ago) the *Posidonia* genus seems to have invaded the seas and played a considerable part therein. *Posidonia* genus belongs to the Posidoniaceae family, an exclusively marine family that only contains the *Posidonia* genus (Kuo & Den Hartog, 2000). Today we know 9 *Posidonia* species: *P. angustifolia, P. australis, P. sinuosa, P. coriacea, P. denhartogii, P. kirkmanii, P. ostenfeldii, P. robertsonae* and *P. oceanica*. This last species alone is present in the Mediterranean (Figure 1).

Morphological features

The leaves of *P. oceanica* are ribbon-shaped, 40 to 140 cm long, 7 to 11 mm wide, with 13 to 17 veins set in distichous manner. A section of the petiole of a leaf shows a true network of lacunae throughout the plant from the tip of the leaf to the end of the roots, called the aerarium, and all the tissues are steeped in gas. This is the main difference between the marine phanerogams and the marine vegetation, which never left the sea. The base of the leaves or petiole is like a sheath and continues on the rhizomes after the limb has dropped off. These petioles, which cover the aged parts of the rhizomes in a characteristic way, are incorrectly called "scales". The leaves, gathered together in fascicles (from 5 to 8 leaves) at the tips of the stems, have a life of between 5 and 13 months (Pergent & Pergent-Martini, 1990) and are formed and fall throughout the year (Caye, 1989).
The woody stems, totally or partially buried in the sediment, are called rhizomes. They may be plagiotropic (horizontal) or orthotropic (vertical), measuring up to 1 cm in diameter.

The plagiotropic rhizomes may change into orthotropic, and vice versa. Horizontal growth allows colonization of empty spaces around the meadow, while the rhizomes' vertical growth allows the plant to struggle against being buried and causes a slow rising of the bottom. The root system is made up of thick (over 2 mm) roots that are relatively short, woody and few in number.

This web of rhizomes and sediment, which seals off the interstices, forms a very characteristic whole, called "matte". Over time, when the growth/sedimentation balance is achieved, the meadow and the underlying matte slowly rise to the surface and may be several metres in extent. The speed at which the matte rises varies according to sectors studied. Long thought to be on average 1 metre per century

[1] Data taken from RAC/SPA's report (2000)

(Molinier & Picard, 1952), it seems in the light of more recent work to be slower (from 34 to 86 cm, in Pergent & Pergent-Martini, 1990).
At the bottom of sheltered bays, the rising of the matte allows the meadow to reach the surface and the leaves spread out over the surface. Then we speak of a “fringe-reef”.

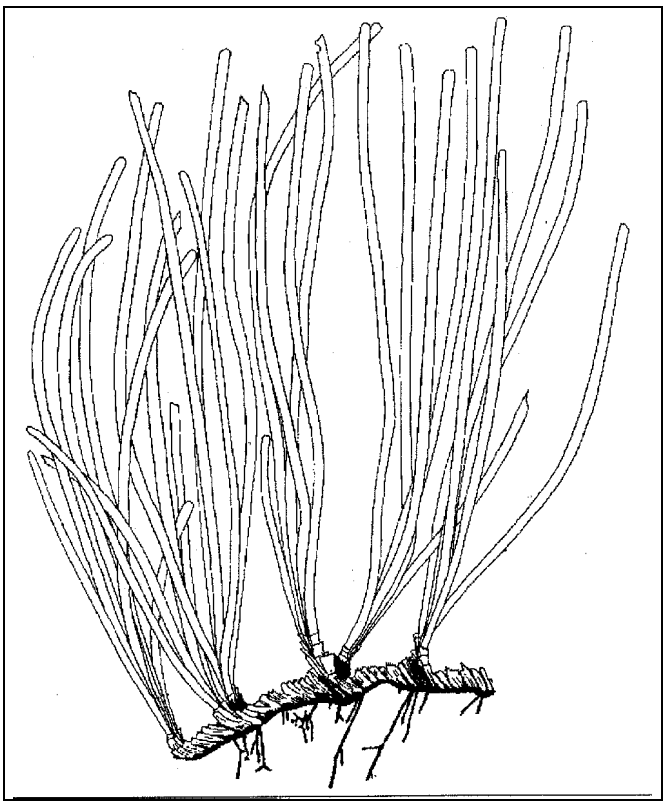

Figure 1: General view of *Posidonia oceanica* (Boudouresque & Meinesz, 1982)

Between the emersion area and the coast, water circulates with difficulty, warming up in summer, becoming less salty during storms, and this brings about the death of *P. oceanica.* At the same time, the upwards growth of the meadow continues and leads, on the sea side, to the emersion of new individuals, which mark off a kind of “lagoon”, separated from the open sea by a “barrier reef” (Molinier & Picard, 1952; Boudouresque & Meinesz, 1982).

P. oceanica flowers in the autumn. The inflorescences, carried by a 10 to 25 cm long peduncle, contain 3 to 5 hermaphrodite flowers; the ovaries end in very jagged stigmata; the stamens have basal anthers and a frenum that extends beyond (Den Hartog, 1970). The flowers have no petals, the pollen being spread in the form of viscous filaments, which float along on the currents, and the ovaries are equipped with denticles, which catch the pollen as it floats past. The flowering of *P. oceanica*, about which we still know very little, is a relatively rare phenomenon. Fertilization usually produces fruits, called “sea olives”. At maturity, these detach themselves from the mother plant and go off to ensure the broadcasting of the species via their ability to float. Later they sink to the sea bed and, if the nature of the substratum and the physico-chemical factors are favourable, germination of an embryo, freed by the fruit’s dehiscence, may occur. Only very rarely does germination result in the existence of young individuals. This is perhaps the result of the mechanism whereby the seeds are dispersed, which causes the loss of many fruit along the coast.

The *Posidonia* thus have sexual reproduction via germination and asexual reproduction via the plant propagation of the underground rhizomes and the natural propagation when rhizomes are pulled off the plant during storms. But a comparison of the DNA and the genetic proximity observed in the various Mediterranean stocks confirms the fact that asexual reproduction is this species' favourite way of reproducing itself (Procaccini & Mazzella, 1996).

Ecological features

The *P. oceanica* meadow constitutes the most important Mediterranean ecosystem, given its major ecological role: it is a pole of biodiversity, sheltering 20 to 25% of Mediterranean species and encouraging the recruitment of economically important species (for spawning grounds and nurseries; Boudouresque & Meinesz, 1982). The meadow is a biocenotic complex, a superpositioning of three biocenoses:

-a biocenosis with sciaphilic affinity linked to the rhizomes,
-a biocenosis with photophilic affinity linked to the leaves,
-and the endogenic biocenosis of the mattes.

The meadow has a high primary production (from 130 to 1,280 g dry weight per square metre per year, i.e. 2 to 10 tons per hectare per year; Pergent-Martini *et al*., 1994). These values are to be compared with the two tons produced by a tropical forest or the 4 to 6 tons produced by a field of cereal (Boudouresque & Meinesz, 1982). As with many marine phanerogams, the *in situ* way of assimilation of the primary production is by detritus-eaters (Pergent *et al*., 1997). In fact, little (3 to 10%) of the primary production is directly consumed by herbivores. Most of this foliar production remains inside the meadow and supplies the bed or is sent off to other ecosystems (about 30%; Pergent *et al*., 1997). This exporting is done both towards new heights and possibly deposited on the beaches as cushions, and at depth. It then represents a considerable source of food for organisms at the circalittoral level or at greater depths, when the continental shelf is sufficiently narrow.

One of the consequences of plant photosynthesis is the production of oxygen. *P. oceanica* meadows are thus an important factor for oxygenating water. For example, at 10 metres depth, in Corsica, one square metre of meadow gives off up to 14 litres of oxygen a day (Bay, 1978 in Boudouresque & Meinesz, 1982).

Finally, the meadow plays a part in stabilizing the sea beds, slowing down the swell and waves and encouraging the depositing of sedimentary particles (Boudouresque & Meinesz, 1982).

Distribution

Despite rather suspicious sightings in the last century, in Portugal and the Basque coast (Den Hartog, 1970), the species is absent from the Black Sea and the Atlantic. The sighting of *P. oceanica* in Texas by American authors is probably due to confusion with *Thalassia testudinum* Banks ex Konig (McMillan *et al*., 1975). *P. oceanica* is a strict endemic of the Mediterranean. The meadows cover between 1 and 2% of the sea beds, i.e. 35,000 sq. km (Pasqualini *et al*., 1998), and constitute the main climax population. They are widespread in most of the Mediterranean, with the exception of the waters around Gibraltar (Molinier & Picard, 1956), the Sea of

Marmara and the coasts of Israel (Lipkin, 1977). On the Syrian-Lebanese coasts, the *P. oceanica* meadow has only been found in two places (north-west of the Island of Rouad and near Ras-Ibn-Hani; Thiebault, 1953), where it appears to be much threatened (Mayhoub, 1976).

The maximum bathymetric extension of *P. oceanica* meadows (or lower limit) is between 30 and 40 metres deep in clear water. When the water is particularly transparent, the species can exist up to 45 metres deep (e.g. Corsica, Malta). The meadows are rare on the Languedoc coastline, from the Camargue to the Pyrenees (France) and off the Nile delta (Aleem, 1955), doubtless because of the fact that the sedimentary movement is too great and because of the lack of saltiness. *P. oceanica* is extremely stenohaline, disappearing when the salinity is under 33‰, which explains its total absence from the brackish ponds of Languedoc, of the eastern coast of Corsica and of Tunisia. But the species can stand relatively large heat variations (from 9 to 29°C) and can be seen on very varied substrata (silt, fine sand, average and coarse sand, rocks), even if it prefers crumbly substrata, rich in organic matter.

2. Cymodocea nodosa

Its frequency, density and geographical range make *C. nodosa* the second species of marine phanerogam in the Mediterranean (Boudouresque *et al*., 1994; Figure 2). *C. nodosa* belongs to the Cymodoceaceae family, an exclusively marine family, which includes the genera *Amphibolis, Cymodocea, Halodule, Syringodium* and *Thalassadendron* (Kuo & Den Hartog, 2000). The *Cymodocea* genus is represented by 4 species widely distributed in tropical and subtropical seas, except for the American continent (Den Hartog, 1970).

Morphological and ecological features

The leaves of *C. nodosa* are ribbon-shaped and 10 to 30 cm long, denticulated at the tip. They have 7 to 9 parallel veins and are rich in cells with tannin. Rhizomes are delicate, orthotropic and plagiotropic. The rhizomes and roots are usually buried in the first centimetres of the sediment.

The plagiotropic rhizomes may grow 2 metres a year (Boudouresque *et al*., 1994). It is a pioneer species, appreciating sandy bottoms that are rich in organic matter (Mazzella, 1990). The species is perennial (one rhizome may live some ten years), but after death the rhizomes decompose much more rapidly than those of *P. oceanica.*

This gives rise to either superficial mixed meadows in association with the marine phanerogam *Z. noltii* and the alga *Caulerpa prolifera,* or to monospecific meadows which precede or follow on *P. oceanica* meadows. It also colonises dead *P. oceanica* mattes.

Like *P. oceanica*, it has an efficient asexual reproduction, but unlike *P. oceanica* sexual reproduction is frequent (Caye, 1989). The flower is not a hermaphrodite one; the male flowers are reduced to a stamen and the female flowers bear two free ovaries. As in *P. oceanica*, the flowers are borne on orthotropic axes (Caye, 1989). Each of the two ovaries may bear a flattened, semicircular fruit. In dense meadows,

the rate of fruiting may be as high as 50% (Caye, 1989). The seeds are found in abundance in the sediment all year round.

The species seems to play an important part in *P. oceanica's* colonisation dynamics, particularly by encouraging the humification of the substratum and helping create a soil (Molinier & Picard, 1952). In the parts of the eastern Mediterranean where *P. oceanica* is absent, *C. nodosa* seems to play the same part. And Drew (1978) remarks that in shallow water *C. nodosa* seems to grow and produce better than *P. oceanica*. Moreover, the species is well liked by grazers, especially the sea urchin *Paracentrotus lividus* and the fish *Sarpa salpa*. But as regards this latter species, *C. nodosa* meadows are often confined to refuge areas, which are difficult for it to reach.

Distribution

C. nodosa is essentially found in the Mediterranean, even if it is also present in the eastern Atlantic, from south Portugal to Senegal and round the Canary Islands. In the Mediterranean, it develops in the open sea where it prefers to colonise relatively sheltered biotopes, port areas, the interior of sea walls and superficial sandy beds between the coast and the upper limit of the *P. oceanica* meadows (Buia *et al*., 1985a). It may also give rise to vast meadows between the surface and about thirty metres down (Mazzella, 1990). More tolerant to desalinated water, in a lagoon environment, *C. nodosa's* bathymetric extension is smaller (-2 to -3 m.), but it colonises large areas, particularly in the lagoons, which offer sufficient salinity.

3. Zostera noltii

Z. noltii seems to be often associated in the Mediterranean with *C. nodosa* (Figure 3). It belongs to the third family of exclusively marine monocotyledons, the family of the Zosteraceae, which includes the genera *Heterozostera, Phyllospadix* and *Zostera*. Originally called *Zostera nana* (Cavolini, 1792 in Caye, 1989), this species was given its present name in 1965.

Morphological and ecological features

Morphologically speaking, *Z. noltii* seems close to *C. nodosa*, but a great heterogeneity as to the size of the vegetative system (from 4 to 20 cm) can be noticed. Its ribbon-shaped leaves are narrow and have 1 to 3 veins. The foliar fascicle is made up of 2 to 5 leaves. The leaves are wrapped at their base in a 1 to 4 mm sheath that is split all the way along. The rhizomes essentially show horizontal growth (Den Hartog, 1970). The rhizomes generally run along the surface of the sediment and have a well-developed root system. The fine roots are buried up to over 10 cm in the sediment.

It is well adapted to strong light but can bear relatively turbid water. It is a euryhaline species, which can bear low salinity levels (9 to 10‰; Den Hartog, 1970), which explains its presence in lagoons behind *P. oceanica* barrier reefs (Molinier & Picard, 1952).

Z. noltii depends on areas where the motion of the tides is present and prefers fairly coarse sediments. Its bathymetric distribution is generally restricted (up to 4 metres deep; Loques, 1990).

This phanerogam is able to reproduce sexually or asexually. The inflorescence is composed of mono-sexual flowers. Flowering has been recorded from April to late August (Loques *et al*., 1988). Fertilization gives rise to a smooth black ellipsoidal fruit 1 to 2 mm long. The seed is reddish-brown, the same size as the fruit (Den Hartog, 1970). Low salinity levels encourage germination of the seeds (Loques *et al*., 1990). Despite a sizeable reproductive effort and considerable production of seeds, the species is mainly propagated by in vegetative manner (Loques, 1990; Harrisson, 1993).

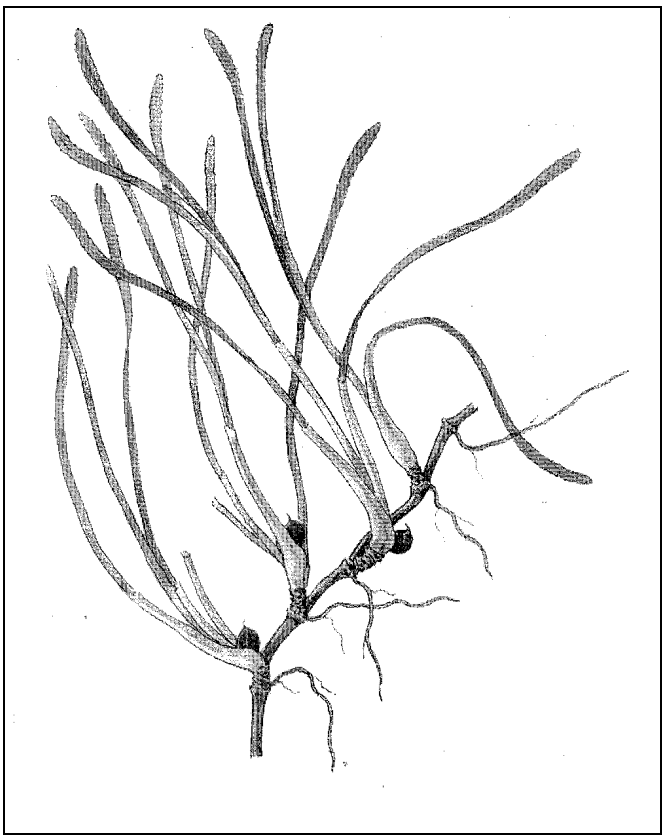

Figure 2: Representation of *Cymodocea nodosa* (Bonnier & Douin, 1990).

Figure 3: Representation of *Zostera noltii* (Bonnier & Douin, 1990).

It plays an important part in littoral lagoons and in certain sheltered bays with large variations in salinity, where it replaces the other marine phanerogams. It is generally considered to be a pioneer species (Laugier, 1998).

Distribution

Z. noltii is widely distributed over the European coasts of the Atlantic Ocean from Sweden to Mauritania but is rarer in the Mediterranean and in the Black Sea. It is the only marine phanerogam to colonise the relic continental seas such as the Caspian Sea or the Aral Sea (Bellan-Santini *et al*., 1994).

In the Mediterranean, it develops in the open sea in superficial infralittoral biotopes, where it can give rise to vast monospecific or mixed meadows, on sandy-silty bottoms, from the surface down to 10 metres deep. But it is especially dependent on poikohalinic environments such as coastal lagoons and estuaries. It has been sighted

in the Adriatic Sea, in Greece, in Egypt (Molinier & Picard; 1952: Bellan-Santini *et al.,* 1994) and in Tunisia (Cap Carthage, Salammbo, from Hammam-lif to Ras El Fartass, Sidi Rais, Gulf of Gabès, Bou Grara Sea, Bizerta lake, Bou Grara lagoon and the northern lake of Tunis).

4. Zostera marina

Zostera marina is the second species of the genus present in the Mediterranean (Figure 4).

Morphological and ecological features

Z. marina differs from *Z. noltii* in being bigger. It has creeping rhizomes that are from 2 to 5 mm thick, with many roots and a leaf at each joint. Short, erect branches bearing a fascicle of 3 to 8 leaves are born at the axil of the rhizome's leaves. The ribbon-shaped leaves are from 2 to 12 mm wide and up to 120 cm long, with 5 to 11 veins (UNEP *et al.,* 1990). At their base, the leaves are enclosed in a membraneous tubular sheath measuring between 5 and 20 cm long, generally wider than the leaves.

This eurythermic species can bear water from 0° to above 30°C. Like *Z. noltii*, it also tolerates wide variations of salinity (from the open sea to almost fresh water) but seems more ubiquitous than that species as regards the nature of the substratum (coarse sand to silt). Light seems to be the main factor limiting this species' bathymetric extension. It develops in sub-tidal areas but can also make incursions into the inter-tidal area. Although it is found between 3 and 7 metres deep in the Atlantic and up to 10 metres deep in Mediterranean waters, it is found at depths of up to 18 to 30 metres along the Pacific coasts of the U.S. (Den Hartog, 1970; Duarte, 1991). It tolerates heavy hydrodynamic stress. An increase in the speed of the currents gives rise to a decrease in the leaf canopy and greater development of the root system (Laugier, 1998).

Able to reproduce both sexually and asexually, this species is able to reproduce at low temperatures (5°C). The full flowering process takes from 30 to 60 days and the seeds are set free between May and August. The monosexual flowers are contained in a terminal spike. After fertilization, they give rise to ellipsoidal or ovoid fruits that are from 2.5 to 4 mm long. The seeds are the same shape. They may germinate in early August until September, but germination continues, though at a low rate, during the winter and spring. The reproductive effort varies according to the habitat, but the populations are essentially maintained through vegetative reproduction (Harrisson, 1993).

Distribution

Z. marina is widespread in the northern hemisphere (Den Hartog, 1970), whether in the Pacific (U.S., Mexico), or the northern Atlantic (U.S., Canada, Baltic Sea, Denmark, Germany, U.K., Ireland, Holland, France, Spain, Portugal; UNEP/IUCN/GIS Posidonie, 1990). This is a species with cold affinity, the only marine phanerogam to reach the Arctic Circle (it is found under 1 metre of ice in the Arctic). It has also been sighted in the Black Sea (Romania, Turkey).

In the Mediterranean, it is especially confined to very superficial and sheltered

infralittoral biotopes (mainly coastal ponds) where it may constitute little meadows. Extremely localised in the open sea, it has been sighted:

- In Algeria, in the Bou-Ismail station in the open sea (Molinier & Picard, 1953; Peres & Picard, 1958).
- In Spain, *Z. marina* is only known in the Port Lligat (Cap Creus) and Els Alfacs (Ebro delta) bays, where this species constitutes very localised populations inside *Z. noltii* and *C. nodosa* meadows. It is possible that the species does not exist anywhere else on the Spanish Mediterranean coasts; other sightings could be due to its being confused with *C. nodosa.*
- In France, this species is abundant in a certain number of brackish coastal lagoons (Salse, Thau; *in* UNEP *et al*., 1990); out at sea its stations are rarer: Fos Gulf (big meadow), Toulon harbour (very localised station; Verlaque & Tine, 1979 *in* UNEP *et al*., 1990).
- In Greece, *Z. marina* is only certainly present in the Gulf of Amvrakikos (Panayotidis, unpublished *in* RAC/SPA, 2000), and other sightings are doubtful.
- In Italy, it has been sighted in the northern Adriatic (Techet, 1906 *in* UNEP/IUCN/GIS Posidonie, 1990), the Venice lagoon (Rismondo *et al*., 1995), and the Gulf of Naples (Funk, 1927; Parenzan, 1956 *in* UNEP *et al*., 1990).
- In Malta, the only sighting (Gulia, 1873 *in* RAC/SPA, 2000) certainly springs from confusion with *C. nodosa.*
- In Syria and Lebanon*, Z. marina* is present (Thiebault, 1953; Mayhoub, 1976).
- In Tunisia, it is abundant in the Bizerta lake (Zaouali, 1980).
- In the Federal Republic of Yugoslavia, this species has been sighted, in particular by Zavodnik (1965 *in* RAC/SPA, 2000) and Avcin *et al*. (1974 *in* UNEP *et al*., 1990).

5. Halophila stipulacea

H. stipulacea belongs to the Hydrocharitaceae family. This family contains 17 genera, only three of them marine: the genus *Enhalus*, the genus *Halophila* and the genus *Thalassia* (Kuo and Den Hartog, 2000). The genus *Halophila* is made up of 10 species, which colonise the tropical areas of the world.

Morphological and ecological features

Unlike the marine phanerogams mentioned above, the leaves of *H. stipulacea* are oval, with petioles that are from 30 to 50 mm long and from 4 to 6 mm wide, with a jagged edge (Figure 5). The well-developed petioles widen at the base in a dissymmetrical sheath.

The genus *Halophil*a is alone in being able to constitute meadows at depths ranging from surface level to nearly 100 metres down in tropical regions (Duarte, 1991).
The flowers are solitary. The male flowers are pedicellate and made up of 3 stamens. The sessile female flowers have a reduced perianth.

Distribution

H. stipulacea is a species that is widespread in the Red Sea, which penetrated into the Mediterranean via the Suez Canal. It is also present in the Indian Ocean along the Saudi coasts (Kenworthy *et al*., 1993) and the eastern coast of India (Jagtap, 1996). Colonies of *H. stipulacea* have been sighted on the coasts of Lebanon, Turkey and Greece. The species is also present around the islands of Cyprus, Rhodes,

Crete and Malta (Verlaque, 1994). The species progresses by following the dominant sea currents. Although *H. Stipulacea* is fairly well represented in the eastern Mediterranean, it is slowly moving towards the western basin and can now be found along the coasts of Sicily (Verlaque, 1994).

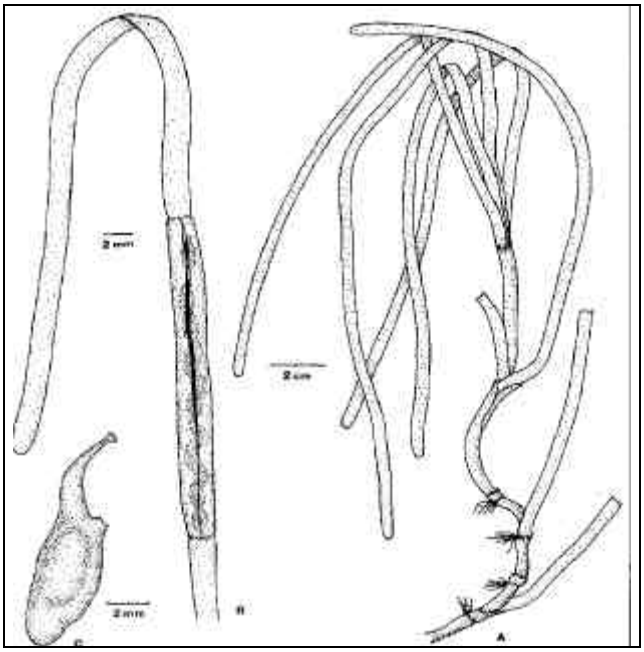

Figure 4: Representation of *Zostera marina* (A); detail of leaf (B) and fruit (C). From Phillips & Meñes (1988)

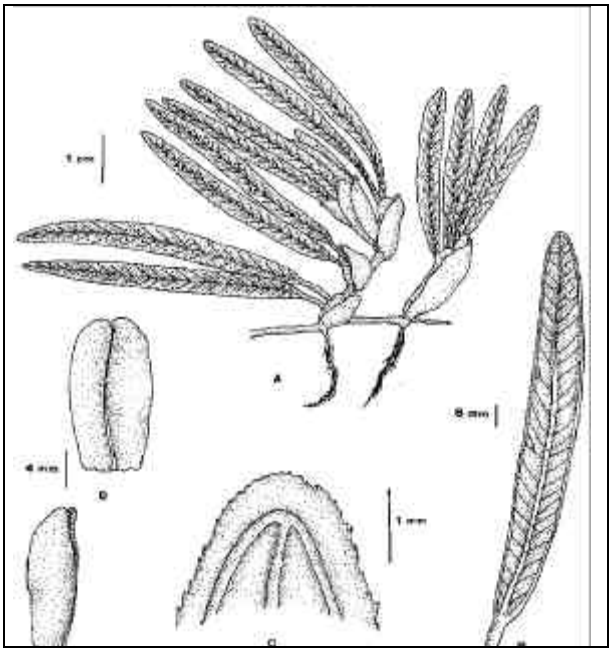

Figure 5: Representation of *Halophila stipulacea* (A); detail of leaf (B) and jagged edge (C); and fruit (D). From Phillips & Meñes (1988).

6. Ruppia cirrhosa and *Ruppia maritima*

R. cirrhosa ex spiralis, like *R. maritima,* belongs to the family of the Ruppiaceae. Within the *Ruppia* genus, only the species *Ruppia. aff. tuberosa* may be considered as a strictly marine species (Kuo & Den Hartog, 2000).

Morphological and ecological features

R. cirrhosa (Figure 6) and *R. maritima* (Figure 7) present a herbaceous rhizome with an extremely large number of branches, with very narrow, single-veined leaves with pointed tips. Both species are remarkable for their morphological criteria as regards fertile tips, number of chromosomes and pollination mechanism. Also, outside the flowering period, it seems hard to distinguish them *in situ.*

Eurythermic and euryhaline, both species develop in superficial biotopes (Verhoeven, 1975). They constitute vast monospecific meadows on mud, in coastal lagoons, which are not too salty. They can also give rise to mixed meadows in association with *Z. noltii* or *C. nodosa.*

Experiments have shown that *R. maritima* grows quickly and can be used successfully to restore meadows (Hammerstrom *et al.,* 1998).

For *R. maritima*, the inflorescences are formed by alternate hermaphrodite flowers.

After fertilization, the green fruit has an asymmetrical ovoid shape (Buia *et al.,* 1985b). Sexual reproduction is usually efficacious and gives numerous seeds. Many birds eat the seeds (Powell *et al*., 1991).

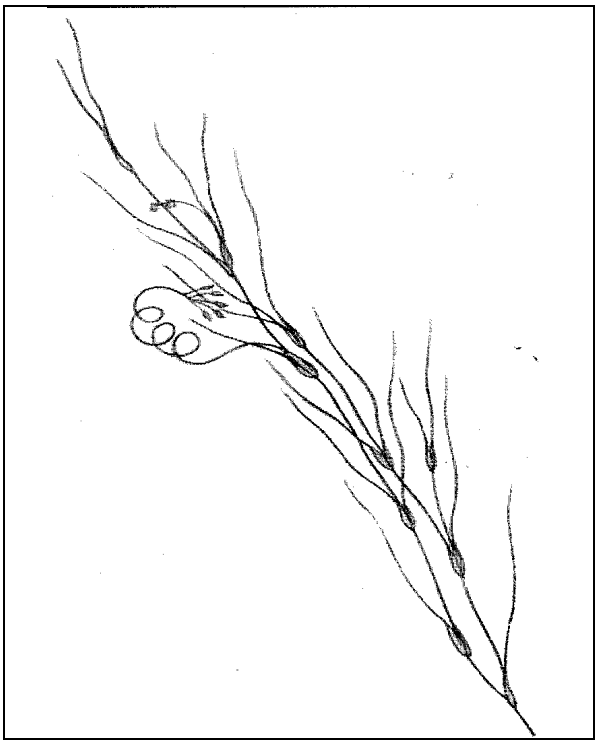

Figure 6: Representation of *Ruppia cirrhosa* (Bonnier & Douin, 1990).

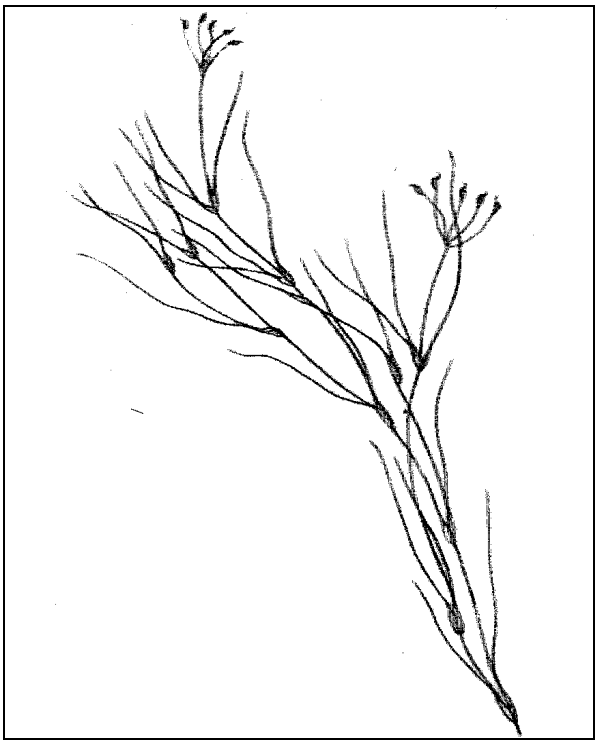

Figure 7: Representation of *Ruppia maritima* (Bonnier & Douin, 1990).

Distribution

R. cirrhosa and *R. maritima* are cosmopolitan species, present in many parts of the biosphere. Very frequent in the coastal lagoons of the western Mediterranean (Buia *et al.,* 1985b), the genus has even been sighted in open sea, in the Balearics (Ribera *et al*., 1997) and in Tunisia (G. Pergent, personal observation).

III. Threats to marine phanerogam meadows

Destruction or regression of the meadows have been reported at planetary level (Short & Wyllie Escheverria, 1996). This destruction may be caused (i) naturally, as the "wasting disease", which affected *Z. marina* meadows between 1930 and 1933 and caused the destruction of about 90% of the Atlantic populations (Den Hartog, 1987) or by storms and cyclones regularly affecting formations in the inter-tropical areas (Short & Wyllie Escheverria, 1996) or (ii) by man. Because of their geographical siting (e.g. coastal shallows), marine phanerogam meadows are directly subject to impacts caused by human activity. This is usually expressed in the reduction of the area occupied by the meadows, particularly near big urban centres (Boudouresque, 1996). Thus, for *P. oceanica*, even if the regression does not imperil the future of the species, as regards the areas occupied (Pasqualini *et al.,* 1998) it is especially worrying because of the low speed of regeneration inherent to the species (Caye, 1989) and the size of the area lost since the 20th century began:

- 10 to 30% in the Ligurian area (Bianchi & Peirano, 1995),

- 52% in the Alicante area (Ramos-Espla *et al*., 1995),
- 45% in the area round Marseilles.

The threats hanging over the meadows are manifold (e.g. excessive urbanization, over-frequenting by tourists, pollution, exploiting of marine resources). The last few years have seen many well-documented, exhaustive inventories made of them (Boudouresque *et al*., 1994; Boudouresque, 1996; 1997). These syntheses show that both the marine phanerogams (as individuals) and their habitats are directly threatened.

Even if it is difficult to say which of the two phenomena is the more serious, use of the Meinesz classification (*in* Boudouresque, 1996; 1997), which suggests rating the impact according to the time needed for it to become reversible, shows that the destruction of habitats is by definition always irreversible and that the disappearance of individuals at best occurs over the long term, for annual species (e.g. *R. cirrhosa, R. maritima*) or pioneer species (e.g. *C. nodosa, Z. noltii*), and at worst is irreversible on a human scale for rare species (e.g. *Z. marina*) or climax species (e.g. *P. oceanica*).

1. Reasons for the disappearance of meadow habitats

The disappearance of meadow habitats is basically due to coastal development. This can be generated by the rise in coastal populations (e.g. building accommodation and communications routes, laying underwater cables) or the development of leisure activities such as boating or bathing (e.g. extending or creating ports, jetties and nautical bases, building alveolar beaches, constructing dykes).

Whatever the nature of the development, it results in a reduction of the coastal strip where meadows are likely to develop (Meinesz *et al*., 1993). This is especially problematic when the continental shelf is small, which is frequently the case in the Mediterranean. It is thought that sea beds of less than -50 metres, where the development is concentrated, only represent 5% of beds (Boudouresque, 1996). Thus, 16% of the Provence-Alpes-Côte d'Azur coast in France will become a man-made one (Boudouresque, 1996). This phenomenon also concerns the Balearics and the Catalan coast in Spain, Liguria and Sardinia in Italy, the Aegean coast in Turkey, and also the south of the island of Cyprus. Adding up all this development, it is thought that on a Mediterranean scale 2,000 km have become man-made over twenty years (Boudouresque, 1996).

2. Reasons for the disappearance of species[2]

The disappearance of species because of the deaths of individuals may be due to a multitude of causes (direct or indirect) that are of variable importance.

Direct causes

Direct causes are usually easily shown and generally only affect localized sectors of the shore. Thoroughly described in the literature (see the synthesis in Boudouresque, 1996; 1997), they are succinctly stated.
Direct causes consist in plants being pulled out by fishing gear or when boats cast

[2] Data taken from the RAC/SPA report (2000).

anchor or when fascicles are destroyed by the use of explosives (e.g. fishing with grenades).

The use of bottom trawls or dragnets constitutes the main direct threat to the Mediterranean meadows. Although the law forbids the use of this gear on beds of under 50 m, or near the coasts, they remain in use (Relini, 1992 *in* Boudouresque, 1996). Trawls are abrasive to the sea bed, stir up sediment, unintentionally destroy non-commercial species and thus cause long-term changes for benthic communities (Boudouresque, 1996). The damage done is thus considerable, all the more so in that a study done along the Corsican coast, where fishing constitutes a little-developed, marginal activity (with only 250 boats), shows that in certain sectors, meadows destroyed by dragnets represent up to 23% of the areas studied (Pasqualini *et al*., 1999).

Mooring boats can also harm the meadows. There are several kinds of mooring (e.g. anchors, isolated moorings and mother chains, moorings and floating landing stages). The immersion of moorings pulls off the fascicles and may cause the mattes to be abraded, immersed structures undermined and the substratum modified (Porcher, 1984). The boats' anchors give rise to similar phenomena, although to a lesser extent. Nonetheless, Francour *et al*. (1999) show that every anchoring causes an average 20 fascicles to be pulled out, which has its effect in sectors where an excessive number of tourists arrive in the summer season (e.g. up to 9,000 moorings recorded in three months around the Lavezzi islands in Corsica; Richiez, 1995).

Finally, destruction linked to the **use of explosives** as part of fishing activities seems at present to be anecdotal. These practices are forbidden in the national law of all the countries because of how they affect stocks and the environment (Boudouresque, 1996) and, when they continue to be practised, only affect small areas (generally less than one hectare; Pasqualini *et al.,* 1999).

Indirect causes

Any introduction into the marine environment may constitute an indirect cause of meadow mortality insofar as it modifies the chemical, physical or biological parameters of that environment.

Thus, (i) modification of the currents or rheological system of masses of water when the coast is being developed, (ii) the pouring out of various substances (e.g. nutriments, detergents, pesticides, hydrocarbons, trace metals) by rivers, the leaching of soils, or coastal discharge, (iii) the introducing of sedimentary particles during building in the maritime area and enlargement of beaches or by erosion, and (iv) the introduction of new species (e.g. micro-organisms, viruses, bacteria, invasive species) may constitute a real threat to marine phanerogams. However, the cause/effect relationship is often hard to prove, particularly since the geographical area affected may be extensive, and each of the factors taken separately does not cause death but only a lowering of vitality in individuals. Often it is only the conjunction of several of these factors, which by increasing the individuals' vulnerability, finally provokes a sizeable mortality.

Bearing in mind the whole set of observations carried out on a Mediterranean scale, it seems possible to set out a few principles:

Concerning temperature
Discharge of hot water can change the temperature of the sea water, and this can threaten organisms. But no convincing proof has so far been supplied about the true harm done by a marked difference in temperature; on the contrary, variations of 20°C have been recorded for *P. oceanica* (Augier *et al*., 1980) without the plant's vitality seeming to be affected.

Concerning salinity
Discharge of fresh water (e.g. rivers, urban discharge pipes) into the marine environment does, at least near the spot where this discharge takes place, modify the environment's salinity. This decline in salinity only ought, it seems, to affect *P. oceanica*, insofar as this is the only Mediterranean species that is relatively stenohaline. Although no specific study has been devoted to this problem, with the exception of Ben Alaya's observations (1972), this is doubtless because it seems rather minor, at least as an anthropic factor causing meadows to regress. But, as a natural-origin factor, one only has to look at the way meadows are retreating along the mouths of the coastal rivers of the eastern coast of Corsica to recognise its importance (Pasqualini *et al*., 1999).

Concerning turbidity
The increase of the water's turbidity often looks like an aggravating factor when added to another disturbance, such as an influx of nutriments, sediment or toxic substances. Doubtless, this is a major parameter of meadow regression, at least as regards their lower limit. In fact, any increase in the amount of dissolved particles gives rise to a quantitative and qualitative change in the light (phenomena of absorption and reflection) which affect photosynthesis, and can cause the lower limit to rise (see synthesis *in* Peres & Picard, 1975; Peres, 1984).

Concerning influx of nutriments
Some addition of nutrients is normal and necessary. But the general increase in these additions over the last few decades (Bethoux *et al*., 1990 *in* Boudouresque, 1996) in an environment that is usually thought to be oligotrophic will have certain consequences. Indeed, this enriching firstly helps planktonic organisms, whose massive development can reduce the water's transparency (e.g. phytoplanktonic bloom). The impact of this enriching then differs from one phanerogam species to the next. It seems that pioneer species like *C. nodosa* are very rapidly able to make use of these nutrients, which are frequently restrictive factors (e.g. phosphorus) for their own growth (Peres *et al*., 1991). Inversely, for climax species such as *P. oceanica*, a massive development is recorded for epiphytes, which compete with the host plant for light. This rivalry may be expressed in a decrease in foliar growth, even, when the nutritive additions are maintained for several weeks, a death of the fascicles. And many authors mention these massive developments of epiphytes to explain the way meadows are retreating in anthropised sectors (see synthesis *in* Shepherd *et al*., 1989).

Concerning influx of pollutants
Pollutants are added by reason of the existence of big industrio-port and petrochemical complexes and shipyards. They are expressed both in the direct discharge of untreated waste and the accidental introduction of pollutants or non-

toxic substances whose combination gives rise to toxic elements. Experiments carried out in this field most often concern *P. oceanica* and often conclude that the plant's vitality is diminished, whether by trace metals (see synthesis *in* Pergent-Martini & Pergent, 2000), industrial waste (e.g. phospho-gypsums; Darmoul *et al*., 1979) or detergents (Monnier-Besombes, 1983).
However, it should be said that many measures have been carried out in aquariums with concentrations higher than those recorded in the natural environment, and that the sensitivity to pollutants taken separately to the concentrations that are actually naturally present has not been clearly demonstrated, at least as regards *P. oceanica* (UNEP *et al*., 1990). Thus, studies concerning mercury and other trace metals show a sizeable accumulation by the plant, which does not (in the present state of our knowledge) harm its development (Pergent-Martini & Pergent, 2000). This seems also to be the case for radio-isotopes like Cesium 137 (Calmet *et al*., 1991). As for hydrocarbons, after the accident of the "Haven" in the port of Genoa (Italy), Sandulli *et al*. (1992 *in* Boudouresque, 1996) have not managed to demonstrate a significant impact of hydrocarbons on *P. oceanica*.

Concerning addition and deficit of sediment
A medium- or long-term change in the amount of sediment causes the vegetative tips to be buried or the rhizomes loosened, which can in the long run cause the death of *P. oceanica* fascicles (Boudouresque & Meinesz, 1982).

Concerning the introduction of alien species
The introduction of invasive species that are likely to compete directly with marine seagrasses is a relatively recent phenomenon. Even if we have at our disposal increasingly precise information on the mechanisms operating during these interactions, namely with regard to *Caulerpa* species (Villèle and Verlaque, 1995; Ceccherelli *et al*, 2000) it is still too early to evaluate the real impact of introduced species on seagrass meadows. In fact, if this competition phenomenon does not appear to lead to a drastic regression in *Posidonia* meadows, the modifications caused, namely with regard to energy allocation and mobilization of the plant's reserves, must be studied over a long period of time. Likewise, it is necessary to consider the meadow as a biocoenosis, notably in terms of its spatial structure (micro habitats) and the diversity of the associated flora and fauna. In addition, it seems judicious to apply the precautionary principle and to consider invasive species as factors that are likely to cause a threat for marine seagrass meadows.

Impact studies in the marine environment

I. Introduction

An impact study is a regulatory approach which aims at getting information about the environment and assessing the impact of a planned development before it is put into effect so that it can be decided in the light of the knowledge available whether this project should really be carried out (UNEP, 1996). Information consists of (i) a prediction of the possible changes to the environment after the development is put into effect, and (ii) opinions on how the development should be carried out so that the disturbance it causes will be as slight as possible.

The impact study idea appeared in 1970 in the U.S., in the law on environmental protection (NEPA). The need to make a report on the impact on the environment for bills and other action, which could significantly affect the quality of the environment, is clearly stated. Environmental considerations must be studied at each important stage of the decision-making process and the impact report is always published (UNEP, 1996). This concept is rapidly being adopted internationally; we have seen it appear in Canada from 1973 and in Europe from the late 1970s.

An impact study usually contains several parts:
- a precise description of the envisaged development (e.g. the project's aims, the site where it will be put into effect, the size, the operational techniques envisaged for its completion);
- a detailed analysis of the original condition of the area where it will be put into effect (e.g. state of reference, or "zero" state);
- an exhaustive inventory of the effects linked to the development or engendered by its future exploitation;
- a suggestion about measures to be taken to mitigate the impact on the environment, integrating possible compensatory measures. These aim at compensating as far as possible the harm done by the development.

Today, impact studies are a tool for helping development, accompanied by technical advice, for an optimum result (UNEP, 1996). They encourage coordination between bodies responsible for the environment, and also associate local people and non-governmental organizations (Galloway & Fordham, 1995). Public consultation is increasingly being encouraged and an ever-growing part of the studies devoted to an analysis of alternative solutions to the project under discussion (Galloway & Fordham, 1995). Impact studies aim to become a tool for "sustainable development", and are seeing their field of application expanding. They should in the long run be integrated in any drafting of management plans, or any definition of the regulatory processes (UNEP, 1996).

Although they are common to several states, making impact studies still remains for most countries an approach that is original and innovative but essentially academic and a recent regulatory procedure, especially in the Mediterranean.

II. Impact studies in the Mediterranean countries

This section will be finalised taking into account the information provided by the National Focal Points as regard the state of impact studies in their countries. To this end, the delegates will provide RAC/SPA with their inputs before 10 May 2001

Impact studies as a tool for the conservation of marine phanerogam meadows

According to the threats we first identified concerning the conservation of meadows, any development on the maritime domain may justify an impact study procedure. The carrying out of a development project implies at least, both during the work and afterwards, a modification of the sea currents and thus turbidity and/or sedimentary phenomena, even a dwindling of the meadow habitats (e.g. filling-in, dyking) and a change in the topography of the sea beds. Moreover, if the development is an aquaculture production structure, to these disturbances should be added a localised increase of nutriments, or non-negligible additions of various chemical substances (e.g. antibiotic treatments, micro-nutriments, trace metals). Similarly, the building of discharge pipes out into the sea gives rise to temperature and salinity changes and even increased discharge of pollutants.

Given that many developments can cause the meadows to retreat, and that impact study procedures seem able to limit the harm caused by such developments, we may wonder which elements deserve to be taken into account when there is a wish to make an impact study in a meadow area, and how efficacious they will be.

I. Elements to be borne in mind for impact studies on meadows

Optimum management of the environment increasingly requires the possession of tools that enable quick, reliable understanding of the general condition of an environment and then follow-up of its evolution over long periods of time. Assessing impacts on the environment is often difficult since one must distinguish between natural variations in time and space and those brought about by human agency. Only a pluri-disciplinary approach (ecological risk assessment) coupled with medium-term monitoring programmes can enable us to guard against the damage before it happens (Cuschnir, 1995).

The speed of execution demanded for impact studies forces us to direct research to relatively stable biological sets, which integrate environmental variations well and have been recognised as indicators of water quality and environment quality. Benthic populations satisfy these conditions, especially assemblages on hard substrata and phanerogam meadows.

Any impact study concerning meadows must therefore enable the overall functioning of these formations to be grasped. For this, it is advisable to:

- identify the assemblages presumed to be subject to the impact;
- map these assemblages as precisely as possible;
- make a quantitative study of the species whose biomass is biggest;
- draw up a statement of the existing biological biodiversity;

- identify the descriptors which enable the state of the environment to be grasped by taking into account the meadows' vitality parameters.

As regards the last point, several studies have enabled us to grasp the meadows' response to a disturbance of environmental conditions (e.g. industrial discharge, urban effluent discharge, aquaculture activities). Whatever their origin, these disturbances are expressed in a modification of certain parameters related to the meadows' vitality. Some of these parameters, concerning *P. oceanica*, are set out in detail below (Table 1).

The very marked seasonal character of certain parameters (e.g. cover, foliar biometry), the difficulty of getting others which require great systematic knowledge (e.g. diversity of the epiphytic community), or the partial knowledge of their limits of use (e.g. compactness of the substratum) make them hard to interpret and restrict their use. However, some parameters, easily measured and having been standardised, may be taken into consideration. Thus, the position of the species' bathymetric extension limit is an interesting parameter, because while it can exceed -40 metres in clear water, near where urban or industrial pipelines discharge their waste into the sea it hovers between -10 and -15 metres (see synthesis *in* Pergent *et al*., 1995). It will thus be possible to link the depth of the lower limit of the meadows to the turbidity or transparency of the water. Similarly, for *P. oceanica*, it is possible to analyse the density of the fascicles according to the depth and condition of the meadow. Thus, for a given depth, four classes can be made out (Table 2):

- The supra-normal class, corresponding to particularly exceptional situations in terms of *P*. *oceanica's* vitality or the meadow's bathymetric extension.
- The normal class, corresponding to satisfactory *P. oceanica* vitality values, which should be observable when there is no marked anthropic pressure.
- The subnormal class, corresponding to a reduction in the meadows' vitality (diminished density, slower growth, contamination), and must be an alarm signal indicating that the environment is sufficiently disturbed to affect the meadow.
- The abnormal class, corresponding to critical situations where the meadow's vitality is extremely low.

Table 1: Main *Posidonia oceanica* meadow descriptors and the protocols permitting their operation

Descriptors	Definition	Implementation
Lower limit		
☆Position ☆Type ☆Evolution	Bathymetric extension	The position is measured by diving, helped by an electronic depth-gauge (precision ± 10 cm). It is advisable to take several measurements several metres apart (average value). The type (e.g. abrupt, progressive, regressive) is established by *in situ* observations. The evolution may be checked by setting up fixed markers (10 to 12 markers each 5 metres apart) in contact with the meadow and photographed every three years, with regular repairs done (once a year).
Quantitative and qualitative assessment		
Density	Number of fascicles per m²	Measurements are taken inside 40 cm sided, or at the lower limit, 20 cm sided, squares. Measurements (at least ten) are taken at random in the meadow; the squares are dropped from one metre and the count is done where they fall.
Cover	Percentage of substratum covered by *P. oceanica*.	Measurements (5 to 10) are taken either by vertically-taken underwater photographs (Cristiani, 1980) after marking off a known area (16 to 20 cm²), or by counting the number of (10 cm²) squares occupied by the meadow on a (1 m²) transparent frame looking vertically down from 3 metres above the sea bed (Francour *et al*., 1997).
Sedimentary parameters		
Exposure	Distance between the plant's vegetative point and the sediment.	This is done by diving, with at least 20 fascicles. Three cases are identified: - hyper-sedimentation: vegetative point in the sediment - balanced: vegetative point at sediment level - sedimentary deficit: vegetative point very much above the sediment
Compactness	Resistance of the matte to breakage.	This is done by driving a graduated shaft into the meadow under the action of a big hammer (Francour *et al.,* 1997).
Foliar biometry		
☆Number and type of leaves ☆Length and width ☆Leaf Area Index (LAI) ☆ Coefficient A	Adults – leaves + petioles, Intermediary – leaves without petiole > 50 mm, Juvenile – leaves without petiole < 50 mm, LAI = leaf area/m² Coef. A = % of broken leaves.	Dissection and measurement of at least 10 fascicles in the laboratory. It is advisable to take the measurements during an annual cycle, or to only compare samples gathered at the same period.
Epiphytic cover		
☆ Diversity ☆ Biomass	Colonisation of the leaf by animal or plant species.	Inventory of flora and fauna in the laboratory, on 10 fascicles. The biomass is measured by scratching the epiphytes, and weighing after drying (72 hours at 60°C).
Lepidochronological parameters		
☆ Number of leaves per year ☆ Growth of rhizomes per year		Samples of 15 fascicles at least one metre apart. After dissection (Pergent, 1990), identification of minimum and maximum thickness and measurement of number of scales and size of each section of rhizomes, then weighing after drying (72 hours at 60°C).

Table 2: Scale for assessing density (fascicles per m²) of *P. oceanica* meadows according to depth. A: Abnormal; S-: Subnormal; N: Normal; S+: Supra-normal

Depth	A		S-	N			S+	Depth	A		S-	N			S+
1	←	822	↔	934	↔	1158	→	21	←	48	↔	160	↔	384	→
2	←	646	↔	758	↔	982	→	22	←	37	↔	149	↔	373	→
3	←	543	↔	655	↔	879	→	23	←	25	↔	137	↔	361	→
4	←	470	↔	582	↔	806	→	24	←	14	↔	126	↔	350	→
5	←	413	↔	525	↔	749	→	25	←	4	↔	116	↔	340	→
6	←	367	↔	479	↔	703	→	26			↔	106	↔	330	→
7	←	327	↔	439	↔	663	→	27			↔	96	↔	320	→
8	←	294	↔	406	↔	630	→	28			↔	87	↔	311	→
9	←	264	↔	376	↔	600	→	29			←	78	↔	302	→
10	←	237	↔	349	↔	573	→	30			←	70	↔	294	→
11	←	213	↔	325	↔	549	→	31			←	61	↔	285	→
12	←	191	↔	303	↔	527	→	32			←	53	↔	277	→
13	←	170	↔	282	↔	506	→	33			←	46	↔	270	→
14	←	151	↔	263	↔	487	→	34			←	38	↔	262	→
15	←	134	↔	246	↔	470	→	35			←	31	↔	255	→
16	←	117	↔	229	↔	453	→	36			←	23	↔	247	→
17	←	102	↔	214	↔	438	→	37			←	16	↔	240	→
18	←	88	↔	200	↔	424	→	38			←	10	↔	234	→
19	←	74	↔	186	↔	410	→	39			←	3	↔	227	→
20	←	61	↔	173	↔	397	→	40			←		↔	221	→

II. Practical measures to mitigate impacts on meadows and comments on their efficacy

It is obvious that there is no efficient alternative to reduce impacts on meadows when developments are envisaged at their expense. Insofar as building causes a reduction in the meadow habitats, only the pure and simple banning of the development can constitute a solution, particularly for species with low colonisation (e.g. *P. oceanica*) or that are infrequently found (e.g. *Z. marina*). Indeed, a study of recolonisation of *P. oceanica* meadows after the halting of anthropic disturbance (Pergent-Martini *et al*., 2000) shows that although natural recolonisation may appear, restoration mechanisms remain very slow (several decades to restore one single hectare).

Nonetheless, in many cases this kind of solution is ruled out, and the development has to be carried out in the light of its interest for the local people (e.g. laying down drinking water pipes, linking up to the electricity supply, laying down telecommunication cables, building discharge pipes out to sea). In this kind of case, making precise maps may constitute an effective way of reducing the impacts on the meadow by optimizing the chosen layout to spare these formations as far as possible. Thus, when an electric cable linking the Port-Cros island (Var) to the continent was to be laid down, the meadows in the area were mapped (Meinesz & Bellone, 1989) and the underwater passage of the cable then determined so as to cross the meadow as little as possible. Similarly, in Catalonia, the Direccion General de Pesca Maritima required in 1992 a general (1/50,000) map to be made of the marine phanerogam meadows (and other types of beds) of the whole Catalan coast (700 km) in order to manage implementing the law protecting marine phanerogams. Finally, mapping populations and types of beds of the Girolata (Haute-Corse) and

Tizzano (Southern Corsica) bays has made it possible to identify areas likely to accept planned moorings while minimising these structures' impact on *C. nodosa* and *P. oceanica* meadows.
Even if it is advisable to bear in mind that no technique can compensate for the loss of all or part of a meadow, several operational techniques may be used to reduce impacts on meadows (e.g. compensatory measures).

As for indirect threats to meadows, it seems possible to act on water turbidity and/or addition of fine particles. These threats, which happen during dyking or filling-in work, can be minimised by using materials that have previously been washed. This is an effective way of reducing the addition of fine particles over meadows. Similarly, the use of geotextile nets enables the impact to be confined to the development area alone, by preventing the fine particles being dispersed by currents. As regards other indirect threats (e.g. addition of nutriments, sedimentary deficit), these must be identified and quantified. The necessary measures are not specified.

It seems to be easier to reduce threats linked to the direct destruction of phanerogams. Thus**,** concerning the improper use of bottom trawls or dragnets, which are a significant source of degradation of meadows, first of all the existing laws should be respected. And recourse to anti-trawl reefs may be an additional means of facilitating the implementing of bans on fishing in certain sectors. Several 'sea-rocks' have already been introduced either in protected areas (Ramos, 1990 *in* Boudouresque, 1996) near coasts (3 mile zones or 50 metre isobath zones; Relini, 1992, *in* Boudouresque, 1996) or areas reserved for traditional fishing with trammels or palangre fishing (Francour *et al*., 1991; Tocci, 1996 *in* Boudouresque, 1996).

Similarly, concerning mooring, it is often possible to restrict this to specially developed geographical sectors and especially to exclude it from areas where the meadows have been made less robust. Because of the higher risk of mortality it is sensible to forbid mooring in sectors characterised by mattes that are not very compact and where the rhizomes are exposed. To permit the restoring of these sites, the ban on mooring must be maintained for at least five years (Francour *et al*., 1999). As exists already for coral reefs, a code of behaviour for mooring over meadows must be created and the general public, especially amateur sailors, made aware of this harm. Finally, all technical innovations that allow pleasure mooring to be optimised, such as mooring with reduced contact with the soil (e.g. Harmony system), must be encouraged.

Over the last few years several replanting techniques have been improved, particularly as regards *P. oceanica* (Cinelli, 1980; Meinesz *et al*., 1992; Molenaar *et al*., 1993; Genot *et al*., 1994), but some problems are still present. Concerning that it is important to continue the research with the aim of further improving the replantation techniques.
It is advisable to make sure that replanting techniques are not hijacked to serve as an excuse for new destruction. Experience has shown that in many sectors planting has been done for planting's sake, with no overall strategy. Thus, *P. oceanica* has been planted in sectors where it does not naturally exist and seems never to have existed, or in areas where the meadow is speedily retreating. At Cannes, part of the replanting of *P. oceanica* was done in an old, stable *C. nodosa* meadow; now

destroying one phanerogam to replace it with another is not a very coherent strategy. It has been suggested that *P. oceanica* be replanted as a compensatory measure in the context of projects to build or enlarge pleasure boating ports. The 6 August 1992 decision of the Sanary-sur-Mer Municipal Council approving this project was later annulled by the Nice Administrative Tribunal (3 December 1992 decision; Boudouresque, personal communication).

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Appendix A : Model Questionnaire

Name:

A : Is there any legal obligation to carry out an impact study before construction of a port or establishment of a fish farm ? Can you specify the referent text (N° of the decree) and the responsible body (Ministry, council ?)

Country/Region	Yes	No	N° of ref. text

B: If there is a legal obligation, does the impact study include the following points?

I/ Description of the original state
2/ The accomplishments foreseen
3/ Envisaged impacts and harmful effects
4/ Measures envisaged to reduce the harmful effects

YES or NO. If NO, what are the points that are not included (N°)?

What supplementary criteria exist?

C: Who is carrying out the impact study?

1/ Public bodies (administration, university) YES NO
2/ Private bodies YES NO
3/Bodies authorized by the Ministry
of the Environment or other Ministry YES NO
4/ Bodies with proven marine experience YES NO
5/ Anyone YES NO

D: Who will assume the cost (financial) of the impact study?

1/ An administrative body YES NO
2/ The enterprise carrying out the development YES NO
3/ An independent body YES NO

E: In the impact study(legal text) is there a reference to seagrass meadows?
YES NO

F: If there is a reference to meadows, are there particular criteria referring to them? YES NO

G: Which criteria?

H: Which criteria would you like to see appear?

Appendix B: Schematic draft guidelines for the portion of environmental impact assessment dealing with meadows

First it is important to specify that dead mattes with a few isolated fascicles or residual spots of *Posidonia oceanica*, as well as thin and occasional plants of *Cymodocea nodosa*, do not constitute a meadow.
Furthermore, concerning precautionary measures, differences among seagrass species and their geographic distribution must be considered: climax or rare species like *P. oceanica* and *Zostera marina* request stronger care than annual or pioneer species (*C. nodosa, Z. noltii, Ruppia cirrhosa, R. maritima*).

In addition to general impact studies procedures, the assessment of impact on meadow request some specific information regarding different parameters. At this regard, many elements are in the section III “Threats to marine phanerogam meadows”, of the first chapter of the document, below summarised:
- Information concerning coastal currents in order to understand the impact of possible sediments and pollutants from the envisaged development;
- Information concerning possible increasing in water’s turbidity, which has negative impact on all the seagrass and in particular on *P. oceanica*. Doubtless, this is a major parameter of meadow regression, at least as regards their lower limit.
- Information concerning possible decline in salinity; this is a problem for *P. oceanica*, which disappearing when the salinity is under 33‰,. The other species are more tolerant.
- Information concerning possible addition of nutrients; the impact of this enriching then differs from one phanerogam species to the next. It seems that pioneer species like *C. nodosa* are very rapidly able to make use of these nutrients, which are frequently restrictive factors (e.g. phosphorus) for their own growth. Inversely, for climax species such as *P. oceanica*, a massive development is recorded for epiphytes, which compete with the host plant for light. This rivalry may be expressed in a decrease in foliar growth, even, when the nutritive additions are maintained for several weeks, a death of the fascicles. And many authors mention these massive developments of epiphytes to explain the way meadows are retreating in anthropised.
- Information concerning possible addition and deficit of sediment; *P. oceanica* is again the more sensitive species. The a medium- or long-term change in the amount of sediment causes the vegetative tips to be buried or the rhizomes loosened, which can in the long run cause the death of *P. oceanica* fascicles.
- information possible concerning increasing of mooring boats. There are several kinds of mooring (e.g. anchors, isolated moorings and mother chains, moorings and floating landing stages). The immersion of moorings pulls off the fascicles and may cause the mattes to be abraded, immersed structures undermined and the substratum modified. The boats’ anchors give rise to similar phenomena, although to a lesser extent. Every anchoring causes an average 20 fascicles to be pulled out.

An impact study usually contains several parts, for each of these parts some suggestions regarding the impact on meadow are presented.

Phase 1) Description of the envisaged development. In this first phase the project and the operational techniques for the completion of the project should be described taking into account possible increasing of water turbidity, decline of salinity, addition of pollutants, presence of mooring boat on the meadow.
At this first level some measures to mitigate the impact on meadow could be:
- Detailed mapping in order to safeguard meadow avoiding to build on it;
- using materials that have previously been washed to reduce the addition of fine particles;
- using of geotextile nets to confined the impact to the development area and to reduce the addition of fine particles;
- to forbid mooring in sensitive sectors;
- to create a code of behaviour for mooring over meadows;
- to optimise technical innovation in mooring.

Phase 2) Detailed analysis of the original condition ("zero state"). Any impact study concerning meadows must enable the overall functioning of these formations to be grasped. For this, it is advisable to:
- identify the assemblages presumed to be subject to the impact;
- map these assemblages as precisely as possible;
- make a quantitative study of the species whose biomass is biggest;
- draw up a statement of the existing biodiversity;
- identify the descriptors which enable the state of the environment to be grasped by taking into account the meadows' vitality parameters (see Table 1 and 2 in the document).

Phase 3) Exhaustive inventory of the effects linked to the development or engendered by its future exploitation. At this level the possible addition of pollutants, increasing of water turbidity, decline of salinity, possible addition of nutrients, presence of mooring boat on the meadow should be considered. A detailed description of the maintenance operations of the new facilities should be given.
Suggestions about measures to be taken to mitigate the impact on meadow, in part, are the same suggested in the first phase, but as concern the prohibition of mooring in sensitive sectors, it is useful to add that the goal is to permit the restoring of these sites and to this end the ban on mooring must be maintained for at least five years.

Phase 4) Environment-monitoring programme. This analysis allows verification of how well the recommended techniques fit the objectives aimed at, in terms of reduction of impacts. It is advisable to carry out the same or comparable **to** analysis executed during the phase 2.

Over the last few years several replanting techniques have been improved, but some problems are still present. Concerning that it is important to continue the research with the aim of further improving the replantation techniques. It is however important to prevent that replanting serve as an excuse for new destruction.

ANNEX XI: REPORT OF THE WORKING GROUP 1 (SESSION 2) ON INTRODUCTION AND REINTRODUCTION OF SPECIES

REPORT OF THE WORKING GROUP 1 (SESSION 2) ON INTRODUCTION AND REINTRODUCTION OF SPECIES

1. In its second session the working group analysed the document UNEP(DEC)/MED WG.177/6 Draft guidelines for introduction and reintroduction of marine species in the Mediterranean sea.
2. The document and its aims were introduced by the Secretariat. In its presentation the Secretariat remember that the mandate concerns the guidelines for introduction and reintroduction of marine species and not for invasive species. Invasive species need an action plan rather than guidelines. The Secretariat said that during the elaboration of the document one element that stood out was the need to develop an action plan for introduced and invasive species.

2. In analysing the document several general issues were discussed:

a/ The participants were of the opinion that the title of the document does not express the aim of the document. In view of that it was decided to change it so that it would read: Draft guidelines for the control of introduction and re-introduction of marine species in the Mediterranean sea.
b/ Some delegates expressed the opinion that the introduction and re-introduction issues should make two separate parts of the document.
c/ The structure and title of the second chapter ''Aims and objectives of the species introduction and re-introduction in the Mediterranean sea'' were questioned saying, that the chapter was about causes and criteria rather than on aims and objectives.
d/ Some participants stated that the “Criteria to identify introduced species” needs to be better elaborated.
e/ The delegates said that it was not clear whether marine species also include marine birds or only aquatic species.
f/ One delegate stressed the importance of quoting the source of information.
g/ The representative of the EC put a reservation on the Recommended measures for unintentional and intentional introductions, in particular those dealing with fishery.
h/ The representative of Greece put a reservation on the possible adoption of the document since it was evident from the discussion that the documents need further and more detailed elaboration.
i/ some delegates underlined the importance of the document that is an important step for the control of the introduction of species.

The secretariat noted the suggestions and stressed the importance of the document.

ANNEX XII

REPORT OF WORKING GROUP 3

MEDITERRANEAN INITIATIVE ON TAXONOMY

REPORT OF WORKING GROUP 3: MEDITERRANEAN INITIATIVE ON TAXONOMY

The participants in Working Group 3, which considered the Mediterranean taxonomy initiative, stressed the importance of taxonomy in providing adequate knowledge of the constituent elements of Mediterranean biodiversity and in the adequate application of evaluation methods. Reliable identification of species is a fundamental element of their conservation. Moreover, environmental impact assessments, which are increasingly becoming the practice in the Mediterranean, often require the compiling of lists of species and habitats, and thus call upon taxonomy.

In reviewing the situation of taxonomy in participants' countries, the Working Group identified the following points:

- The number of taxonomists is declining in the majority of the countries of the region. This is due to the fact that taxonomy does not number among the priorities set for research, and students are no longer drawn by this discipline;

- Authorities dealing with conservation of biodiversity call upon universities and researchers to assist them in taxonomy. The implementation of conservation programmes will be affected by the lack of taxonomists in the medium term if adequate measures are not taken;

- Natural history museums play an important role in taxonomy and in the maintenance of reference collections.

Recommendations of the working group

- Invite the Contracting Parties to attach greater importance to taxonomy and to strive to increase the number of specialists in Mediterranean taxonomy;

- Compile an inventory of taxonomy specialists in Mediterranean countries for those taxons that are important for the implementation of the SPA Protocol;

- Prepare an inventory of laboratories with marine taxonomic competence, the capacities at their disposal, and their possibility of taking on students for training in taxonomy. The inventory should also encompass specialized scientific societies (e.g. societies for herpetology, ichthyology, etc.);

- Identify the urgent needs of countries in the field of taxonomy;

- Launch programmes to train taxonomists and to provide study grants and other means to encourage students to specialize in taxonomy. In this way, the bilateral cooperation mechanisms could be put to use;

- Given the important role of reference collections in taxonomic work, it is important to carry out a study of the situation of reference collections of Mediterranean marine species. This study should lead to a programme for their development, continuance and networking as tools to support taxonomic work;

- Promote the organization of thematic workshops on taxonomy to allow exchanges between Mediterranean taxonomists;

- Elaborate and update guides for the identification of marine species;

- The implementation of the above recommendations should be integrated into a Mediterranean strategy which must take account of other initiatives, particularly the Global Taxonomy Initiative undertaken within the framework of the CBD.