

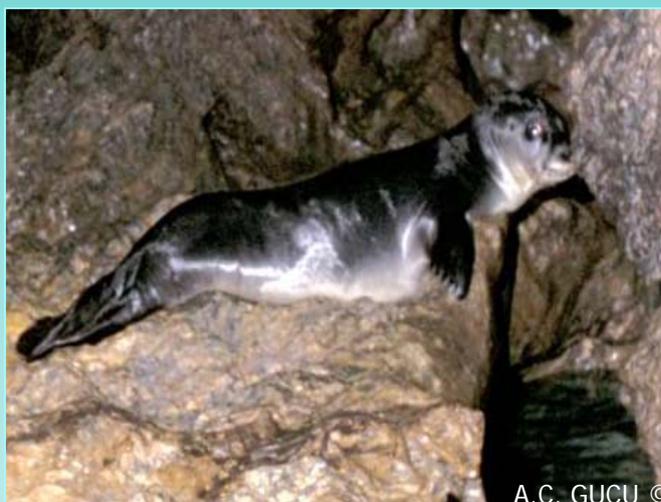


UNEP



REPORT OF THE INTERNATIONAL CONFERENCE ON MONK SEAL CONSERVATION

ANTALYA – TURKEY, 17-19 SEPTEMBER 2006



A.C. GUCU ©



A.C. GUCU ©



C.O.KIRAC / SAD-AFAG ©

Note:

The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of UNEP or RAC/SPA concerning the legal status of any State, Territory, city or area, or of its authorities, or concerning the determination of their frontiers or boundaries.

CONTENTS

I. REPORT

Introduction	4
Minutes	4
Opening of the Meeting	4
General situation and concrete experiences	5
Institutional, Legal & Financial Aspects	7
Working groups	8
Working groups' results and proposals	8
Additional final proposals	10
Closure of the Meeting	10

II. ANNEXES

Annex I: Programme	11
Annex II: Key notes to focus Working Groups discussions	15
Annex III: List of participants	18
Annex IV: Abstracts of communications	27
Annex V: some news release	63

**Minutes of the Conference on Monk Seal Conservation
Antalya – Turkey, 17-19 September 2006**

Foreword

The Mediterranean monk seal, the most threatened pinniped in the world, has been included by the Parties to the Barcelona Convention among their priority targets already since 1985 (Genoa Declaration).

Although the species is nowadays present in only a few countries, its protection should be seen as a collective responsibility of the Mediterranean States, given its critical status and its value as a part of the heritage of the Mediterranean. To this purpose, they devoted to put into operation the Action Plan for the Management of the Mediterranean Monk seal in 1987. The Parties further confirmed their commitment to the conservation of the monk seal in 1996 by including the species in the List of Endangered and Threatened Species annexed to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Barcelona, 1995). The Protocol calls on the Parties to continue to cooperate in implementing those action plans already adopted.

The Mediterranean States bore regional and worldwide responsibility for safeguarding such an important element of the global ecosystem. Unless they endeavour to take concrete measures, the decline of the species will continue. For that reason, some Parties to the Barcelona Convention expressed their concern that the issue of protecting the Mediterranean monk seal had not been given sufficient political weight along the years.

Through the Portoroz Declaration, the Contracting Parties committed themselves to take all necessary measures to reverse the decline of the species. The declaration is intended to give new life to the Action Plan and to serve also as a call for the relevant IGOs, included other concerned Convention Secretariats, and NGOs to adhere to its implementation.

Preventing the extinction of the Mediterranean Monk Seal is a challenge for the Barcelona Convention family. It is more than safeguarding one species; it would be one indicator for and an example of MAP successes in facing complex and severe biodiversity conservation issues through a coordinated and cooperative joint action. The important role of the Bonn and Bern convention for this challenge has been also highlighted through the Monk Seal Conference. The Mediterranean Action Plan fully trust that a fruitful cooperation will arise from it thanks also to the commitment of all the countries, institutions, universities, fishermen representatives, scientists, and other stakeholders which have made this Conference a success.

Introduction

One of the specific priorities discussed during the last Meeting of the Contracting Parties to the Barcelona Convention (Portoroz, November 2005) and reflected in the "Portoroz Ministerial Declaration", was the conservation of the Mediterranean Monk seal. This seal is the pinniped species most threatened with extinction in the world.

The Conference on Monk Seal Conservation was held in Antalya, from 17-19 2006, within the context of the "BLUEweek-MEDday", with the active support of the Barcelona, Bern and Bonn Conventions, Turkish Authorities, the Principality of Monaco and the International Fund for Animal Welfare (IFAW). It further received the collaboration of INFO/RAC, and the Turkish NGO SAD-AFAG. It finally involved more than forty representatives and experts from the countries concerned with the conservation of monk seal species. The list of participants appears in Annex III of the present minutes.

The objective of the Monk seal conference was to exchange information on conservation experiences of genus *Monachus* and catalyze the further implementation of the two existing action plans for the management of the Mediterranean Monk seal in all the species range.

MINUTES

17 September 2006

Opening of the Meeting

1. The conference was opened by the Undersecretary for the Environment and Forestry of the host country, Turkey; Mr. Hasan Zuhuri Sarikaya; he stated that Turkey was a Party to the Barcelona Convention and the Bucharest Convention and that the Conference would provide a model to help the Mediterranean and other regions. Some 500 Mediterranean Monk seals existed, 10 – 20 % living in Turkey. He spoke about Turkish law on the subject, including the Hunting Law and Fisheries Law, and the national committee set up to protect the Monk seal. He thanked all participants for being present and sharing their experiences.

2. Mr. Illuminato, INFO/RAC director, explained the reasons for the Blue Week-MedDay. Under the Barcelona Convention, with RAC/SPA's help, twenty-one countries would bridge gaps and combine actors as a first step to sustainable development. He also thanked the members of the Bonn and Bern Conventions and IFAW for their support.

3. Mrs. Alzina, RAC/CP director, spoke about the new situation in 2006, insisting on the need for reliable information and its correct interpretation and the need to reach final projects for sustainable development in the region.

4. Mr Gannoun, RAC/SPA director, thanked the Turkish Government and the participants. He said reducing poverty had to go, hand in hand, with protecting biodiversity. The Mediterranean was a very special area, and specially threatened, and required synergy with other Conventions in the field.

5. Mrs. O'Donnell, Director of IFAW's EU Office, spoke of twenty years of support for the Monk seal conservation.

General situation and concrete experiences¹

The Monk seal in the Pacific Ocean: General situation

1. Mr. Cebrian, from RAC/SPA, speaking on behalf of the NOAA National Marine Fisheries Service of the USA, which kindly excused its absence, presented the activities for the Monk seals in the Hawaiian Islands, being managed by the Pacific Islands fisheries Science Centre. He mentioned the Protected Species Zones (PSZs) to reduce the probability of direct interaction between fisheries and monk seals in the Pacific and how they were preventing the situation from getting worse. He compared threats, habitats and biology of seals in the Mediterranean and Pacific. He referred to the conservation and management of the Hawaiian Monk seal by the NMFS Marine mammal Research Programme, as a possible model for the Mediterranean.

The Monk seal in the Atlantic Ocean: General situation

1. Mr. El Kabiri, from the Bonn Convention, showed how the Monk seal appeared in Appendix I and Appendix II to that Convention, reflecting a status of the species that requires strong protection and co-operation between range states. The Atlantic Range States, Morocco, Portugal (Madeira), Mauritania and Spain, had adopted an Action Plan within the Convention and were operating a Memorandum of Understanding (MoU), coordinating with the CMS to implement the plan. He mentioned the principal identified threats, which are mainly massive mortality of the young animals and interaction with fisheries. He encouraged the Conference to homogenize viewpoints and programmes for both Atlantic and Mediterranean sides. Finally, he thanked the Turkish Government for hosting the Conference and hoped Turkey would join CMS.

2. On behalf of Mr. Oliveira, Mr. De Larrinoa gave a historical overview on the pre- and post-protection era in Madeira Archipelago. From 1990, the Desertas Islands had both partial and strict reserves. Today the seals were re-occupying the beaches in the Desertas and were seen in Madeira. He gave details about conservation actions such as rehabilitation, monitoring, guarding and awareness.

3. Mr. Aguilar spoke about experience and perspectives in Cap Blanc, which contains the only Mediterranean Monk seal colony in the world, with around one-third of the world population. In 1992, they started work in the area, collecting information on the biology, population structure and behaviour of the species for future conservation action. He spoke of the 1997 die-off and the explanations given. Asking why the population had not recovered, he suggested the low pup birth and survival rates and the low genetic diversity.

4. Mr. De Larrinoa returned to the subject of Cap Blanc and the continuing monitoring activities, and spoke of human impact-related issues and the improvement of fishermen's conditions through the ongoing project. He mentioned workshops with fishermen on sustainable fisheries, contact with pupils and teachers, an information network and setting up a bio-station.

¹ The abstracts of the presentations done during the conference appear in annex IV

The Monk seal in the Mediterranean Sea: General situation

1. Ms. Ben Nakhla from RAC/SPA spoke of the history of RAC/SPA intervention and the Action Plan for the Management of Monk Seal in the Mediterranean. She discussed threats and progress made in the riparian states. Political enforcement endorsement resulted from the November 2005 Portoroz Declaration, by the Contracting Parties to the Barcelona Convention, which made conservation legally and morally binding.

2. Mr. Vlaikos, representing the Fishermen Cooperative and Ecological Movement of Alonnisos, Greece, gave a historical summary about the long co-existence between fishermen and Monk seals; the common enemy was the large scale fisheries. He insisted that the protection call had come from below. The local fishermen should be involved in all Monk seal conservation actions.

3. Mrs. Miliou, of the Institute Archipelagos Aigaiou, expressed anxiety about Monk seal survival, and proposed local participation. Also, since there was one common Monk seal population between Greece and Turkey, there should be common action by both countries for its conservation.

4. Mr. Altıparmak, from the Turkish Ministry of Environment and Forestry, mentioned that the last Conference on Monk Seal Conservation, the 4th one, dated back to 1991 and had been held in Antalya too. It resulted in the forming of the National Monk Seal Committee and the National Strategy. He then gave an overview of current conservation action in the country.

5. Mr. Güçlüsoy, from SAD-AFAG & DEU-DBTE, overviewed the Monk seal status on the Turkish coasts and informed the participants about the concrete conservation results, for example the ban on entry to Monk seal caves, the ban on beach seines, allocation of patrol boat in the Cilician coasts, new maritime traffic regulation in important Monk seal habitats, long term and nation-wide PA&EE activities, rescue and rehabilitation efforts for monk seals, oil spill clean up operation to save monk seal habitats and the studies on determination of 17 Important Monk Seal Sites in Turkey.

6. Mr. Gücü, from METU-IMS, spoke on his data research to test the hypothesis of whether the protection measures along the western Mersin coasts of Turkey are effective. He mentioned fisheries management in the area and its positive results for Monk seals and artisanal fishermen. He concluded that conservation measures worked in the area and that priority should be given in that area to protecting weaning pups and juveniles.

7. On behalf of Mr. Boutiba, a paper transmitted by him was read by Ms. Ben Nakhla, from RAC/SPA, about the situation in Algeria. He excused the absence of the Algerian Environmental Survey Network owed to the recent discovery of a pup during its ongoing RAC/SPA field mission in the country. Ministries, local groups, NGOs and users were all involved in conservation. The recent birth of a pup was a sign of the survival of a Monk seal reproductive population in the western Mediterranean.

8. Ms. Mo, from ICRAM, described monitoring in Morocco, Tunisia and Libya in collaboration with RAC/SPA, National Authorities and IFAW. The fishermen were surveyed on the status of Monk seals as well as the fishing effort; monitoring was done to discover potential Monk seal caves. Monk seals have been sighted in these countries. She stressed capacity building of artisanal fishing communities. She spoke about ICRAM and GFMI's work and their joint survey effort. There are occasional Monk seal sightings along the Italian coasts.

9. Ms. Almasri, from the Syrian Ministry of Local Administration and Environment, said that seals appear in the north of Syria and are disliked by fishermen. He furnished a video recording a Monk seal nearshore Lattakia.

10. Mrs. Hadjichristoforou, from the Cyprus Ministry of Agriculture, Natural Resources and Environment, reviewed the conservation status of the Monk seal since the 1970s, and insisted on the importance of habitat protection. She remarked that the Monk seal areas should not be used to attract tourists.

11. Mr. Kapedani, from the Albanian Ministry of Environment, Forest and Water Administration, spoke on the data gathered within the recent monitoring surveys mainly the 2004 Survey for collecting information from professional and artisan fishermen by professional questionnaires, he informed that this Project was financed by Principality of Monaco and coordinated by IFAW.

the second survey was conducted in collaboration with RAC/SPA in 2005 and had showed good suitable habitats along the coast of Karaburun peninsula. He then gave an overview of current conservation action in the country.

12. The Monk seal habitat and population survey of Croatia done in collaboration with RAC/SPA in 1995 was presented by Mr. Cebrian (RAC/SPA), since the Croatian representative kindly excused his absence owed to last moment constraints. The study had confirmed the extinction of the reproductive population in the eighties and the sporadic sighting of dispersing individuals, probably arriving from Greece. According to Croatian scholars, since 1995 there had been several observations, but it was possible that Monk seal sightings still concerned visiting individuals from other areas.

13. In the discussion session, questions concerned whether conservation methods in Cap Blanc had much hope of success, whether the recent EU fisheries agreement with Mauritania has any direct impact on populations, whether how many Greek fishermen's cooperatives were supportive of conservation, how many pups per year were born in Madeira, and whether violations came from outside the Foça Protected Area or not. Answers included asserts that that at least 10 years were needed to evaluate the success of the conservation measures in Cap Blanc; that there was no expected impact of the EU-Mauritania agreement since it does not overlap the seals foraging area; that there was only one functional fishing cooperative; that the yearly number of pups had increased from 1 to 3 in Desertas; and that there was as yet no agreement on whether violations were internal or external in the Foça Protected Area.

18 September 2006

Institutional, Legal & Financial Aspects

1. Mr. Guglielmi, from INFO/RAC, spoke on the Information and Communication Plan (IC) to support Monk seal conservation. In the May 2006 meeting, in Cyprus, on Mediterranean Strategy for Sustainable Development many points were raised: awareness campaign, capacity building, educational and information management, vision for the IC Strategy was approved. An IC Advisory Group was formed and the activities of the regional and sub-regional groups were examined. He stressed the importance of multi sector partnership involving governmental organisations, political leaders, the private and business sector, and NGOs and the general public. He said that INFO/RAC was developing *InfoMAP* a technical tool for the conceptual design and partnership agreements. He mentioned the creation of a fully dedicated section for Monk seals in the online EcoMedia Magazine (www.ecomediomagazine.org) to highlight success stories and spoke of the technical feasibility of making links with other specialised media.

2. Ms. Lasén Diaz, from the Bern Convention Secretariat, spoke about the legal aspects of Monk seal conservation. She gave an overview of the working of the Bern Convention and its provisions and recommendations regarding the conservation of the Mediterranean Monk seal. In particular, she referred to the need for Contracting Parties to take measures to strictly protect this species and its habitats, including the need to ensure that no capture or killing of Monk seals takes place, nor damaging of their breeding or resting sites, as this species requires specific habitat conservation measures.

3. Mr. Romijn, speaking on behalf of IFAW, talked about alternative financing mechanisms and possibilities, including: private, foundations/charities, multilaterals, governments, individuals. He said the effort should be stepped up, there should be real cooperation across national and organisational boundaries, transparent management of funds, and clear conservation priorities. He mentioned various types of funds, of management body, of the need that the beneficiaries should not be on that body, and long-term funding etc., giving examples.

4. Ms. Miliou gave a detailed report on the Aegean Seal Trust, a community based pilot project for the conservation of the Monk seals, in the northern Dodecanese Islands. She gave the rationale behind this geographically large project, stressing its urgency, spoke of rewarding fishermen for their support, and talked about capacity building of the local fishing communities.

5. Questions on the second day included whether EcoMedia could be used for Monk seal action plan coordination activities, how the Bern Convention enforced its rules, whether a trust fund is needed, and whether fishermen groups should be rewarded for contributing to Monk seal conservation. Answers were that EcoMedia could be used for this purpose; persuasion rather than force enabled Bern Convention rules to be observed; trust funds had certain advantages such as reinforcing scarce resources for specific purposes; and that fishermen were in general too busy to actively work on seal conservation, only reporting when they observed one, but that a proper support scheme for artisanal fisheries would increase empathy to the species.

Working groups²

Working group A: Possibility of a common work programme CMS – MAP - RAC/SPA. Link between the two action plans

This working group discussed the main priorities feasible to be commonly addressed by Barcelona and Bonn Conventions. It was clear that there was already a general framework and the necessary instruments to set up a common programme; it was therefore unnecessary to create a new legal framework. Following examination of the two existing action plans, discussions focused on the different elements of a global coordinated programme.

Working group B: Coordination and follow up mechanism: Steering committee?

This working group discussed the possibility to establishing a steering committee as a practical tool to advise the improvement and optimisation of actions planned and developed on monk seal conservation issues. It concluded that a Steering Committee is needed to be established. While it was considered that the steering group should be composed of

² The keynote of the two working groups discussion subjects appears on annex II

representatives of the three conventions as well as of the main sectors regarding the Monk seals, e.g. fisheries sector, conservation scientist and conservation NGOs, part of the group considered that it was critical that this steering Committee should embrace individuals, with no conflict of interests with the implementation of the Actions Plans. One representative underlined the need of setting up the Steering Committee and a Fund raising mechanism within the legal framework of the three conventions

Working groups' results and proposals

WG A: The participants agreed that the content of the two existing Action Plans for the Monk seal (for the Eastern Atlantic and for the Mediterranean) should serve as the basis to initiate coordinated action on behalf of the species.

The following axes for global coordinated actions by the concerned conventions, with regard to both action plans were proposed:

1. Establishing mechanisms to coordinate and finance the conservation actions of both Action Plans
2. Undertaking population monitoring and surveying actions to achieve further knowledge about this species, its habitats and the problems affecting it.
3. Reducing Monk seal mortality rates
4. Developing habitat protection actions
5. Promoting information exchange, awareness and social support and involvement
6. Creating a protocol for coordinated actions in emergency situations

A permanent working group should be set up for the Mediterranean Sea of the kind that already exists in the Action Plan for the Eastern Atlantic

WG B: A steering committee should be established. The objectives of the steering committee should be to stimulate, steer and monitor, the implementation of the actions of the two existing plans for *Monachus monachus*, along all its range area, with the following tasks:

- Advise, stimulate and guide the implementation of actions
- Identify newly emerging initiatives and approaches
- Monitor progress on specific actions

The composition of the steering committee should be further defined in order to have a detailed proposal to transmit to the respective Convention bodies;

The Conventions of Barcelona, Bonn and Bern as well as their individual Parties should step up their activities for the protection of the Monk Seal, fully participate in any existing conservation actions for the Monk Seal, as well as open in their budgets a specific line to support these activities;

The Steering Committee to be created should establish a resources mobilisation group with the objectives of:

- Defining funding strategies for Mediterranean Monk Seal Conservation
- Assess the feasibility of a Mediterranean Monk Seal Conservation fund to implement the Conservation Actions for the species

Additional final proposals

- Strengthening relevant institutional capacities
- Establishing common electronic information, coordination and cooperation system amongst the Conventions for the conservation of the Mediterranean Monk seal.

Closure of the Meeting

The Meeting was closed by the RAC/SPA Director, Mr Gannoun, on Monday, 18 September 2006 at 7.30 p.m. who recalled that this conference was an opportunity to exchange information on conservation experiences of the Monk seal and to restore the dialogue between the main actors in the region. He acknowledged the participants for their efficient work and valuable contribution to the success of the conference.

19 September 2006

Closure of the BLUEweek-MEDday

The BLUEweek-MEDday event was closed on Tuesday, 19 September 2006 by Mr. Paul Mifsud, Coordinator of the Mediterranean Action Plan, after the representatives of the three RACs presented the results of their respective gatherings, including RAC/SPA common meeting with the Bonn and Bern Convention representatives.

Annex I
PROGRAMME

**Conference on Monk Seal Conservation
Antalya-Turkey, 17-19 September 2006**

PROGRAMME

September 17th 2006

9.45 / 10.00 Official opening: Host country, Bonn, Bern and Barcelona Conventions, IFAW.

Conference on Monk Seal Conservation : general situation and concrete Experiences

Chair : Mr. Mustafa Kemal YALINKILIÇ

- 10.00/10.20 The monk seal in the Pacific Ocean: General situation.
(National Oceanic and Atmospheric Agency of the U.S.)
- 10.20/10.40 The monk seal in the Atlantic Ocean: General situation
(M.L. El Kabiri, Bonn Convention)
- 10.40/11.00 Experience and perspectives in Madeira
(P. Oliveira, Madeira Natural Park)
- 11.00/11.30 Coffee break
- 11.30/12.00 Experience and perspectives in Cap Blanc (1)
(A. Aguilar, University of Barcelona)
- 12.00/12.30 Experience and perspectives in Cap Blanc (2)
(A. BENT JIDDOU, IMROP. M. Idrissi & P. F Larrinoa, Action Plan for the
Monk Seal in Eastern Atlantic)
- 12.30/14.00 Lunch break

Chair : Mr. Hemmo Muntingh

- 14.00/14.20 The monk seal in the Mediterranean Sea: General situation
(L. Ben Nakhla & D. Cebrian, RAC/SPA - Barcelona Convention)
- 14.20/14.35 Some experience and perspectives in Greece (1)
(A. Miliou, Archipelagos Aigaiou)
- 14.35/14.50 Some experience and perspectives in Greece (2)
(G. Vlaikos, Alonissos´ Fishermen Cooperative and Ecological Movement)
- 14.50/15.10 Experience and perspectives in Turkey (1)
(A. Altiparmak, Turkish Ministry of Environment and Forestry)
- 15.10/15.30 Experience and perspectives in Turkey (2)
(H. Güçlüsoy & C.O. Kiraç, SAD - AFAG)
- 15.30/16.00 Coffee Break

- 16.00/16.20 Experience and perspectives in Turkey (3)
(A.C. Gucu & M.Ok, METU)
- 16.20/16.30 Algeria (Z. Boutiba, Université d'Oran)
- 16.30/16.50 Morocco (Mediterranean) & Tunisia. (G. Mo, RAC/SPA & IFAW)
- 16.50/17.00 Libya (G. Mo ,A. Hamza, EGA, Libya : Environment General Authority)
- 17.00/17.10 Syria (M. Jony & A. Almasri : Syrian Ministry of Local Administration and Environment)
- 17.10/17.15 Cyprus (M. Hadjichristoforou : Cyprus Ministry of Agriculture, Natural Resources and Environment)
- 17.15/17.20 Albania (R. Kapedani, Albanian Ministry of Environment, Forest and Water Administration)
- 17.20/17.25 Croatia (D. Holcer, Croatian Natural History Museum)
- 17.25/17.30 Italy (G. Mo, ICRAM)
- 17.30 / 18.30 Discussion on priority issues for monk seal conservation

September 18th 2006

Conference on Monk Seal Conservation : Institutional, Legal & Financial Aspects

Chair : Mr. Moulay Lahcen El Kabiri

- 9.00/9.20 An Information and Communication plan to support the monk seal conservation (P. Guglielmi, INFO/RAC)
- 9.20/9.40 Legal aspects of the conservation of monk seal (B. Lasen, Bern Convention)
- 9.40/10.00 Alternative financing mechanisms. Monk seal fund? (B. Romijn, IFAW)
- 11.00/11.00 Presentation of concrete project proposals on main priorities
- 10.00/11.30 Coffee break
- 11.30/12.30 Discussion on financing aspects
- 12.30/14.00 Lunch break

Chair : Mr. M'Hamed Idrissi

- 14.00/16.00 Working group A: possibility of a common work programme between CMS – MAP - RAC/SPA. Link between

Chair : Mr. Bart Romijn

14.00/16.00 Working group B: coordination and follow up mechanism. Steering committee?

16.00/16.30 Coffee Break

Chair : Mr A. Gannoun

16.30/17.30 Presentation and discussion of working groups' results

17.30/18.00 Preparation of recommendations

18.00/18.30 Presentation of recommendations and conclusions

September 19th 2006

BLUEweek-MEDday conclusions

9.30 / 9.45 Conclusions of the Conference on "Monk Seal Conservation"
(A. Gannoun, RAC/SPA Director)

Annex II

KEY NOTES TO FOCUS WORKING GROUPS DISCUSSIONS

Key notes to focus Working Groups discussions

This endangered species has a very small World population size but a very wide distribution area, which concerns many different stakeholders, including multiregional bodies with responsibilities and/or concern for its recovery. Amongst them are the Conventions of Bern, Bonn and Barcelona, FAO-GFCM, IUCN, as well as the Environment Directorate-General of the European Commission, responsible Body for the Habitats Directive implementation at EU level. The two working groups envisaged during the gathering will address important cooperation subjects where concerned stakeholders may play important roles.

Working group A: Possibility of a common work programme CMS – MAP - RAC/SPA. Link between the two action plans

Within the framework of the CMS, a recovery plan for the Atlantic population of monk seals was finalised in October 2004 and adopted on November 2005. At the same time, an Action Plan for the Management of the species exists since 1987 in the Mediterranean area under the umbrella of the Barcelona Convention. Given the critical status of the species, it is necessary that activities to pursue its recovery should not be dealt-with in an uncoordinated manner at both sides of Gibraltar Strait, since the conservation of widely distributed species with much reduced population needs a transboundary approach, also from the point of view of responsible international bodies dealing with them.

This working group will discuss the main priorities feasible to be commonly addressed by both conventions and how to do it.

Working group B: Coordination and follow up mechanism. Steering committee?

Regarding implementation of Monk seal conservation activities including habitat preservation, key roles are played by the Bern Convention and the EU Habitats Directive in the majority of its distribution area. The SPA/BD Protocol is an International Treaty, the DG Environment and the

Bern Convention might contribute to facilitate putting in practise this treaty at European and Convention space level, fact which calls for the need of coordination and synergy, especially at the level of projects development on the species management as well as inventory, protected status designation and monitoring of key sites, including all breeding caves.

The General Fisheries Commission for the Mediterranean (GFCM) of FAO may play a catalytic role on addressing the problem of conflicts between fisheries and monk seal conservation.

Furthermore, IUCN - Mediterranean Cooperation Centre has highlighted the lack and need of an evaluation of the actions undertaken during at least the last ten years for the monk seal, as a learning base in which to properly develop future actions. IUCN's Species Survival Commission has a Pinniped Specialist Group which might also get involved with the conservation of the monk seal in the future.

Steering committees have shown to be practical tools to advise the improvement and optimisation of actions planned or developed on conservation issues. e.g. ACCOBAMS Scientific Committee, Wider Caribbean Marine Mammal Action Plan Steering Committee, SAPBIO Advisory Committee).

Mediterranean monk seal is one of the endangered species that receive least funds for conservation in the world and establishment of an international fund will help increase efficiency

of monk seal conservation in its range. The results of this working group discussions will help to found the grounds for functional coordination, scientific assistance and fund raising set to address and optimise the recovery of the monk seal within all its range.

Annex III
LIST OF PARTICIPANTS

**Conference on Monk Seal Conservation
Antalya – Turkey, 17-19 September 2006**

PARTICIPANTS

Mr. Alex AGUILAR

Dept. Biologia Animal (Vertebr.)
Facultad de Biologia
Universidad de Barcelona
08028 Barcelona
Spain
Tel: 34 93 402 14 53
Tel: 34 670409826 Mobile
Fax: 34 93 403 44 26
E-mail: aaguilars@ub.edu

Fax: 222 5745081

E-mail : azzajiddou@yahoo.fr

Mr. Yilmaz EMRE

Med. Fish. Resh. Prod. And Training
Institute (MEDFRI)
Turkey
Tel: 90 242 505 277 35 44
Fax: 90 242 251 05 84
E-mail: yemre57@yahoo.com

Ms. Aroub ALMASRI

SS CN
Damascus B.O.P. 3839
Syria
Tel: 963 11 6819673
Tel: 963 94 775113 Mobile
E-mail: aroub@mail.sy

Mrs. Berna BAYDARLIOGLU

General Secretary
YALIKAVAK ENVIRONMENTAL & SEAL
RESEARCH, ASSOC
Cevre ve Fork Arastirmalari
Dernegi 2006
Merkez Mah. Eser Cad N°:9
Yalikavak 48430 Bodrum-MUGLA
Tureky
Tel: 90 532 25 64514
Tel: 905322564514 Mobile
Fax: 90 252 38 53 708
E-mail : berbaydar@gmail.com

Mr. Ahmed AFLI

Institut National des Sciences et
Technologies de la Mer
28, rue du 2 mars 1934, 2025 Salammbô,
Tunisie
Tel: 216 71 730 420 / 71 277 735
Fax : 216 71 732 622
E-mail: afli.ahmed@instm.rnrt.tn

Mr. Pablo Fernández DE LARRINOA

CBD Habitat
Proyecto de Conservacion de la
Foca Monje en Mauritania
Fundacion CBD-Habitat
Nieremberg 8, Bajo A
28002 Madrid
Spain
Tel: 34 91 415 60 52
Fax: 34 91 413 54 92
E-mail: pablo.fernandezdelarrinoa@cbd-habitat.com

Mr. Abdellatif BAYED

Professeur
Institut Scientifique
Université Mohamed V - Agdal
Unité d'Océanologie Biologique
Avenue Ibn Battota
BP 703, Agdal – 10106 Rabat
Maroc
Tel: 212 37 60 1054
Fax: 212 37 77 45 40
E-mail: bayed@israbat.ac.ma ;
uob_isr@yahoo.com

Mr. Toni FONT

Observer
Balearic Government
Balearic Islands Species Conservation
Unit - Servei de Protecció d'Espècies.
Govern de les Illes Balears
C/ Manuel Guasp, n°10
PALMA -7006-
Tel: 34 670 658 599
Fax: 34 971 279536
E-mail: toni.font@ono.com

Ms. Azza BENT JIDDOU

Conseillère du Directeur de l'IMROP
Coordinatrice de la Cellule : « Etude et
Suivi des Mammifères marins »
B.P. 22 – Nouadhibou
Mauritanie
Tel : 222 5745124
Tel : 222 636 08 70 Mobile

Mr. Luis Mariano GONZÁLEZ
Ministerio de Medio Ambiente
Servicio de Especies Amenazadas
Subdirección General de Vida Silvestre
C/ Gran Vía de San Francisco 4
Madrid 28005
PAIN
Tel: 34 91 596 49 38
Fax: 34 91 596 49 38
E-mail: LMGonzalez@mma.es

Mr. Ali GUCU
Institute of Marine Sciences and
technology
Ali Cemal Gücü,
Assoc. Prof.
Middle East Technical University
Institute of Marine Sciences
P.O.Box. 28 Erdemli 33731 Mersin
TURKEY
Tel: 90 324 521 3434
Fax: 90 324 521 2327
E-mail: gucu@ims.metu.edu.tr ;
alicemalgucu@yahoo.com

Ms Myroula HADJICHRISTOPHOROU
Senior Fisheries Officer
Ministry of Agriculture, Natural Resources
and Environment
Department of Fisheries and Marine
Research
Nicosia
CYPRUS
Tel: 357 22 30 3901
Fax: 357 22 775 955
E-mail: andrecws@logos.cy.net

Mr. M'Hamed IDRISSE
Head Bio economist
Institut National de Recherche Halieutique,
INRH
Regional Center for Northern Atlantic
Gibraltar Strait and Western
Mediterranean
P.O. BOX 5268, Dadeb Tangier 90000
Kingdom of Morocco
Tel: 212 39 325 134
Fax: 212 39 325 139
E-mail: mha_idrissi2002@yahoo.com ;
m.idrissi.inrh@gmail.com
m.idriss.inrh@gmail.com

Mr. Mohammad JONY
Independent environmental activist
Ministry of Agriculture

Fisheries Department, Directorate of
Agriculture
P.O. Box 4, Latakia,
SYRIA
Email: mohammadjony@gmail.com
Tel: 963 93475525
Tel: 963 93 475 525 Mobile
Fax: 963 41 311 113
E-mail: mohammadjony@gmail.com

Mrs. Fulya KAYA
Seal Rehabilitation and Research Centre,
(SRRC)
Hoofdstraat 94a
9968 AG Pieterburen
The Netherlands
Tel: 31 252 3855200
Tel: 31)06-53816506 Mobile
Fax: 31 595-528389
E-mail: fulya@familykaya.com

Mr Ismail KAYA
Kemer DKMP Mükendisi
Turkey
Tel: 90 242 8141507
Fax: 90 242 8141507
E-mail: odeniz@hotmail.com

Mr. Rezart KAPEDANI
Aquaculture Specialist
Ministry of Environment
Fishery Development Project, Rr.
Muhamet
Gjollështa Nr. 56, Tiranë,
Albania
Tel: 355 69 2107019
Fax: 355 42 53345
E-mail: rezikap@yahoo.com

Mrs. Anastasia MILIOU
Hydrobiologist – Scientific Director
Archipelagos Aigaiou
Institute of Marine & Environmental
Research of the Aegean Sea
P.O. Box 1, Rahes 83301, Ikaria
Greece
Tel: 30 22750 41673
Tel: 30 6974744949 Mobile
Fax: 30 22 750 41 673
E-mail: anastasia@archipelago.gr ;
info@archipelago.gr

Ms. Giulia MO

ICRAM

Istituto Centrale per la Ricerca Scientifica
e Tecnologica Applicata Al Mare
Via di Casalotti, 300- 00166 Rome
Italy

Tel: 39 06 615 70 444

Fax: 39 06 61561906

E-mail: giulia.mo@icram.org ; giulia-mo@virgilio.it**Mr. Bayram OZTURK**

TUDAV

Fisheries Faculty - Istanbul University
Turkish Marine Research Foundation
P.O. Box 10 Beykoz/ISTANBUL
Turkey

Tel: 90 216 424 07 72

Fax: 90 216 424 07 71

E-mail: tudav@superonline.com ;
ozturkb@istanbul.edu.tr**Mr. Bart ROMIJN**

Partner

IFAW Consultant

Warner Strategy & Fundraising
Veerdijk 42R, 1531 MS Wormer
P.O. Box 183 – 1520 AD Wormerveer
The Netherlands

Tel : 31 75 640 55 77

Tel: 31 06 21 85 86 37 Mobile

Fax: 31 75 622 0165

E-mail: romijn@wsfr.nlwww.wsfr.nl**Mr. Theodoros TSIMPIDIS**

Director

Archipelagos Aigaiou
Institute of Marine & Environmental
Research of the Aegean Sea
P.O. Box 1, Rahes 83301, Ikaria
Greece

Tel: 30 22750 41673

Tel: 30 6932 274235 → Mobile

Fax: 30 2275041673

E-mail: thodoris@archipelago.gr ;
info@archipelago.gr**Mr. Peter J.H. van BREE**

Curator emeritus at the Zoological
Museum of the Amsterdam University
P.O.Box 94766, 1090 GT
Amsterdam, the Netherlands. Phone
number in the morning

Tel: 020-5255437

Fax: 13126525238

E-mail: vanbree@science.uva.nl**Mr. Yiannis VLAIKOS**

Ecological and Cultural Movement &
Fishermen Cooperative of Alonnisos
Patitiri 37005

Alonnisos

Greece

Tel: 00 30 424 65789

Fax: 00 30 424 65131

E-mail: vlaikos@hol.gr**Mr. Uysal YILMAZ**

Med. Fish. Resh. Prod. And Training
Institute (MEDFRI)
Turkey

Tel: 90 505 491 4944

Fax: 90 242 251 05 84

E-mail: uysaly@yahoo.com**Ms. Martha ZEIN**

GUB

Balearic Islands Species Conservation
Unit

Servei de Protecció d'Espècies.

Govern de les Illes Balears

C/ Manuel Guasp, nº10

PALMA -7006-

Tel: 34 971 17 68 00

Tel: 34 66 9759688 Mobile

Fax: 34 971 78 49 53

E-mail: produccionesorganicas@yahoo.es

TURKISH MINISTRY OF ENVIRONMENT AND FORESTRY

Mr. Aybars ALTIPARMAK

Expert
Ministry of Environment and Forestry,
(MoEF)
10 Nolu Bina Cevre ve Orman Bakanlgi
Sögütözü – Ankara
Turkey
Tel: 90 312 207 5920
Fax: 90 312 212 28 04
E-mail: altiparmakaybars@gmail.com ;
aybarsozlem@yahoo.com

Mr. Adem AGIR

Ministry of Environment and Forestry
10 Nolu Bina Cevre ve Orman Bakanlgi
Sögütözü – Ankara
Turkey
Tel: 90 312 207 5816
Fax: 90 312 212 28 04
E-mail: ademaqir@yahoo.com

Mr. Izamettin EKER

Ministry of Environment and Forestry
10 Nolu Bina Cevre ve Orman Bakanlgi
Sögütözü – Ankara
Turkey
Tel: 90 312 2075403
Fax: 90 312 2075454
E-mail: izameker@yahoo.com

Mr. Aytug Izat

International Blue Crescent
Tel: 90 599 539 2411
Authority for the Protection of Special Areas
Ministry of Environment and Forestry
10 Nolu Bina Cevre ve Orman Bakanlgi
Sögütözü – Ankara
Turkey
Tel: 90 312 287 9555/167
Fax: 90 312 212 28 04
E-mail: gnerergn@yahoo.com

Fax: 90 216 464 6881

E-mail: aizat@bluecrescent.net

Mr. Guner ERGUN

Mr Yahya KESIMAL

Ministry of Environment and Forestry
10 Nolu Bina Cevre ve Orman Bakanlgi
Sögütözü – Ankara
Turkey
Tel: 90 533 261 4082
Fax: 90 312 207 63 03
E-mail: yahyakesimal@yahoo.com

Mr Fehmi SAHIN

Ministry of Environment and Forestry
10 Nolu Bina Cevre ve Orman Bakanlgi
Sögütözü – Ankara
Turkey

Ms. Sazer KAYA

Turkey
Tel: 90 312 207 5895
Fax: 90 312 212 28 04
E-mail: altiparmakaybars@gmail.com

Prof. Dr. Kemal YALINKILIÇ

Ministry of Environment and Forestry
10 Nolu Bina Cevre ve Orman Bakanlgi
Sögütözü – Ankara
Turkey
Tel: 90 312 207 6061
Fax: 90 312 207 59 51
E-mail: mustafa61@yahoo.com

BERN CONVENTION

Ms. Carolina LASEN DIAZ

Natural Heritage Division/
Division du Patrimoine Naturel
Directorate General IV
Council of Europe
F-67075 Strasbourg Cedex
France
Tel: 33 3 90 21 56 79
Fax: 33 3 88 41 37 51
E-mail: Carolina.lasen-diaz@coe.int

BONN CONVENTION - CMS

Mr. Moulay Lahcen EL KABIRI

Deputy Executive Secretary
UNEP/CMS Secretariat
UN Campus
Hermann-Ehlers-Str. 10,
53113 Bonn
Germany
Tel: 49 228 815 2407
Fax: 49 228 815 2449
E-mail: lelkabiri@cms.int

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

COORDINATING UNIT FOR THE MEDITERRANEAN ACTION PLAN

Mr. Paul MIFSUD

Coordinator
UNEP/MAP
PO Box 18019
48 Vassileos Konstantinou
Avenue 11635 Athens
GREECE
Tel: 30 210 72 73 123
Fax: 30 210 72 53 197/6
E-mail: paul.mifsud@unepmap.gr

REGIONAL ACTIVITY CENTRE FOR SPECIALLY PROTECTED AREAS (RAC/SPA)

Mr. Abderrahmen GANNOUN

Director
Bd du Leader Yasser Arafat
B.P. 337 – 1080 Tunis CEDEX
TUNISIA
Tel: +216 71 206 649 / 485 / 851
Fax: +216 71 206 490
E-mail: gannoun.abderrahmen@rac-spa.org ; car-asp@rac-spa.org

Ms. Lobna BEN NAKHLA

Programme Officer
E-mail: lobna.bennakhla@rac-spa.org

Mr. Daniel CEBRIAN

Programme Officer
E-mail: daniel.cebrian@rac-spa.org

Mrs. Habiba MAKHLOUFI

Secretary
E-mail: car-asp@rac-spa.org

Mr. Laid HAFSI

Financial
E-mail: car-asp@rac-spa.org

Mme. Stéphanie ALOUECHE

Interprète

Mme. Anne MURRAY

Réviseur

Mr. Ridha SALHI

Interprète

**REGIONAL ACTIVITY CENTRE FOR INFORMATION AND COMMUNICATION
TECHNOLOGIES (INFO/RAC)**

Mr. Sergio ILLUMINATO
Director General INFO/RAC
Barcelona Convention
Via Cagliari, 40-00198 Rome
Italy
Tel : 39 06 85305147
Fax: 39 06 8542475

E-mail: director@inforac.org

Mr. Spyros Kouvelis
MedWet Ecofilms
Greece
Tel: 30 210 808 9270
Fax: 30 210 808 9274
E-mail: kouvelis@medwet.org

Mrs Paola RICHARD
INFO/RAC
Barcelona Convention
Via Cagliari, 40-00198 Rome
Italy
Tel: 39 06 853 05147
Fax: 39 06 854 2475

E-mail: prichard@inforac.org

Mr. Paolo GUGLIELMI
Programme Manager
E-mail: pguglielmi@inforac.org -
info@inforac.org
www.inforac.org - www.unepmap.org

Mr. Elio PIAZZA
AIROME MAGAZINE
Rome
Italy
Tel: 39 333 461 82 44
Fax:
E-mail: 777879@tin.it

Mr. Harry TZANIS
Athens News Agency
Tel: 30 69 76413512
Fax: 30 210 6400 560
E-mail: frs2004@ana.gr

CLEANER PRODUCTION/REGIONAL ACTIVITY CENTRE, RAC/CP

Mrs. Virginia ALZINA
Director
CP/RAC-CLEANER
PRODUCTION/REGIONAL ACTIVITY
CENTRE
C/Paris, 184 – 3^a Planta
Barcelona 08036
Spain
Tel: 39 93 4151112
Fax: 39 93 2370286
E-mail: valzina@cema-sa.org

IFAW

Mr. Hemmo MUNTINGH

Senior Policy Advisor
International Fund for Animal Welfare
(IFAW)
13 Rue Boduognat
B-1000 Brussels
Belgium
Tel: 32 2 230 9717
Tel: 31 629 576 938 Mobile
Fax: 32 2 321 0402
E-mail: hmuntingh@ifaw.org

Mrs. Lesley O'DONNELL

Director
IFAW
EU Office
13 rue Boduognat
B-1000 Brussels
Belgium
Tel : 32 2 282 0694 Direct
Tel : 32 2 230 9717 General
Tel : 32 478 84 32 31 Mobile
Fax : 32 2 231 0402
E-mail: lodonnell@ifaw.org

SAD-AFAG

Mr. Cem Orkun KIRAÇ

Chairman of Board SAD-AFAG
Underwater Research Society
Mediterranean Seal Research Group
PK 420, Yenisehir 06444, Ankara
Turkey
Tel: 90 312 231 4553
Fax: 90 312 231 9259
E-mail: afag_ankara@yahoo.com
www.afag.org

Mr. Harun GUCLUSOY

SAD-AFAG & DEU-DBTE
MEU-DBTE Institute of Marine Sciences
and Technology
Baku Bulvari, 100, 35340, Inciralti / Izmir
Turkey
Tel: 90 232 278 5565 – ext 140
Fax: 90 232 278 5082
E-mail: harun.guclusoy@deu.edu.tr
www.afag.org

GREENPEACE MEDITERRANEAN

Ms Canan Sarac

Oceans Campaigner
Denizler Kampanyasi
Sorumlusu
Valikonagi Cad N°: 35/2 D.5
Harbiye 34371 Istanbul
Turkey
Tel: 90 212 248 03 31/117
Tel: 90 533 595 18 58 Mobile
Fax: 90 212 248 18 59
E-mail: csarac@diala.greenpeace.org

Annex IV
ABSTRACTS OF COMMUNICATIONS

HAWAIIAN MONK SEAL (*Monachus schauinslandi*): STATUS AND CONSERVATION ISSUES

George A. ANTONELIS¹, Jason D. BAKER¹, Thea C. JOHANOS¹, Robert C. BRAUN², & Albert L. HARTING³

1 NOAA National Marine Fisheries Service, Pacific Islands Fisheries Science Center, 2570 Dole Street, Honolulu, HI 96822

2 Contract Veterinarian, 44-299 Kaneohe Bay Dr., Kaneohe, HI 968844

3 Contract Wildlife Specialist, 8898 Sandy Creek Ln., Bozeman, MT 59715

The authors detail pertinent information on the history, current status, and conservation of the endangered Hawaiian monk seal (*Monachus schauinslandi*). The present population is estimated at about 1,200 to 1,300 seals, a decrease of 60% since the 1950's. Counts declined about 5% yr⁻¹ from 1985 to 1993, remained relatively stable through 2000, and then declined again from 2001 to 2003. Population trends have been variable at the six main reproductive subpopulations in the Northwestern Hawaiian Islands. Over the last few decades, pup production has averaged about 200, but overall juvenile survival has declined at most sites. The largest subpopulation is at French Frigate Shoals, where counts have dropped by 60% since 1989 and the age distribution has become severely inverted due to high juvenile mortality over the last decade. Overall demographic trends and parameters suggest that the total population will likely continue to decline, at least in the short term. Monk seals occur throughout the Hawaiian Archipelago, and although most are found in the NWHI, a small but increasing number haul out and pup in the main Hawaiian Islands. Monk seals typically use isolated beaches for resting, molting, parturition, and nursing offspring; and forage on demersal and epibenthic prey. Past and present sources of anthropogenic impacts to monk seals include hunting (during 1800's and early 1900's), disturbance (e.g., past military activities beginning in WWII), entanglement in marine debris, and fishery interactions. Primary natural factors affecting monk seal recovery include predation by sharks, aggression by adult male monk seals, and reduction of habitat and prey associated with environmental change. Identification and mitigation of these and other possible factors (e.g., disease) limiting population growth represent ongoing challenges and are the primary objectives of the Hawaiian monk seal conservation and recovery effort.

THE MONK SEAL IN THE ATLANTIC OCEAN

Lahcen EI KABIRI

Deputy Executive Secretary
UNEP/CMS Secretariat, Bonn
Convention on Migratory Species of Wild Animals (CMS)

In a general way, monk seal populations were in the focus of scientists ending to actions of conservation since 1986. Then, the international community became aware of the true threat having been an obstacle to this species conservation, regarded as rare and in danger of extinction.

Thus, several evaluation works made it possible to note that hardly 500 individuals still survive in the area, including 200 individuals in the two principal colonies of the Atlantic East coast region among Mauritania, Morocco, Spain and Portugal.

Consequently, the species had been listed by the Convention on Migratory species of Wild Animals (CMS) in its Appendices I & II, reflecting its status as “endangered species” and prohibiting any exploitation and recommending its total protection by the Range States. And also as “species with unfavourable status” for which the Range States should undertake Concerted Actions and co-operate for its conservation in order to bring back monk seal populations to a “favourable” level. In this spirit, the Fourth Conference of the Parties to CMS (1994) recommended a Concerted action for the species *Monachus monachus*.

Consequently, many activities were carried out in order to identify the threats and to establish a Plan of rehabilitation of the species in the Atlantic. Among the principal identified threats, massive mortalities of the young animals appear due to the tides, the reduction of the habitats, in particular by the collapse of the caves as well as the interaction between the monk seal and the fisheries. In situ conservation is the means considered more adapted by the scientists to guarantee the durability of the species by ensuring some population stability. In this way, protection measures were already implemented by some countries (marine reserve of Madeira in the islands - Portugal & fishing reserve in Morocco), however the effort must be constant for the installation of a “network of marine protected areas” in the Atlantic region.

The Range States carried out since 1998, within the framework of a working group on the monk seal many research and evaluations, under the leadership of Spain, following the 8th meeting of the Scientific Council of the CMS, for the development of an Action Plan. This Plan was finalized by the States in Morocco (2004) and was ratified by the 13th meeting of the Scientific Council having preceded the 8th Conference of the Parties to CMS (2005).

The aforementioned Conference invited the Range States to work out a Memorandum of Understanding (MoU) to support the implementation of the Action plan (Resolution 8.5). For this reason, Spain submitted to the Secretariat of the CMS a preliminary document of MoU, which will be discussed and adopted by the Range States.

The implementation of the Action plan and MoU requires financial means, particularly for coordination, the program of work and the meetings, which requires voluntary contributions of the concerned actors, including the countries, NGOs and Organisations involved in the conservation of the monk seal.

In conclusion, the Conference on the conservation of the seal monk is certainly a tool of great importance to reactivate efforts already made in the Atlantic area and to homogenize viewpoints and programs to the species benefit. Although the Action plan does not comprise quantified projects, it is of importance to consider the delicate status of the two colonies of the Atlantic. Important too is developing in situ conservation projects with the participation of the Governments and the Civil Society, which is mobilized more and more towards this objective.

The development of an Action plan common to the Atlantic and the Mediterranean will simplify surely the task of the concerned actors for planning and follow-up, search for funds and determination of priorities. However, right now the Coordination Unit installed in Nouadhibou (Mauritania) constitutes the utmost step of coordination and regional and international co-operation. It is seen as a first milestone for the Action plan implementation, as well as for the MoU under negotiation by Range States.

Significant of the efforts to come should be dedicated to on-the-ground conservation activities such as they are clearly defined in the Plan. In the other hand, the new Global Plan will gain if geographically individualized so as to specify and thereafter follow on objectives and their realization for both Mediterranean and Atlantic zones.

MONK SEALS IN MADEIRA: Experience and Perspectives

Rosa PIRES

Parque Natural da Madeira Service
Quinta do Bom Sucesso
Caminho do Meio 9064-512 Funchal -Portugal
rosapires.sra@gov-madeira.pt

The archipelago of Madeira comprises two inhabited islands (Madeira and Porto Santo) and two uninhabited sub-archipelagos: the Desertas and the Selvagens Islands. Historically, when the Portuguese colonized the island after 1419, seals were abundant on the main island; five centuries later, in 1979, they were already considered rare. In 1988 there were only 6-8 individuals at the Desertas Islands. The factors concurring to this decline were hunting for commercial purposes (historical), habitat degradation and loss due to human activities and the negative intentional and accidental interaction with fisherman.

In 1988, the Parque Natural da Madeira Service (PNMS) began a program to protect the species following three main orientations: 1. the effective protection of the species and its habitat; 2. the monitoring and study; and; 3. the public awareness. In 1990 the Nature Reserve of Desertas Islands, which includes a Partial Area where fishing is allowed, was created. Moreover, threatening fishing methods (e.g. the use of nets) were replaced by alternative ones. To ensure its effective protection the area is permanently warded since its creation. More recently a small rehabilitation centre was built.

The main objectives of the study and of the monitoring scheme established are: to follow population status, determine the demographic parameters and understand habitat use and the activity patterns. The methods are non invasive and based on direct observations conducted from 24 lookout-sites, which are located throughout the three islands of Desertas.

In 2000 a Monk Seal Information Network was established on the island of Madeira. The aim of this initiative which involves general public and diving centres, amongst others, is to collect standardized information on seal sightings

In addition, in 1993, 1999 and 2001 a habitat survey was carried out at the São Lourenço Peninsula (Madeira Island) and Desertas Islands to assess and confirm the location of potential monk seal shelters

Public awareness campaigns are one of the priorities of this project, which was intensified more recently with the increase of the number of Monk seal sighted in Madeira Island.

The results of these eighteen years of continuous program are: Positive population trend, now estimated to be between 25 and 35 individuals; The average number of annual births increased from 1 to 3; Since 1997, seals began to use open beaches showing that they are reacquiring original habits and; The distribution area of the species expanded to Madeira.

Nowadays the main threats for the species are: the negative interaction with fishermen (recently there were 34 reports of damages caused by seals); and the fact of the breeding season coincides with the sea storms season (from a total of 6 deaths that were detected, 4 were preweaned pups after heavy storms).

Considering this, future perspectives are:

1. To maintain the habitat protection since it remains the outstanding priority for the conservation of the species in the archipelago. For that it is important to know the monk seal habitat around Madeira. Moreover, more strict legislation measures are being prepared.
2. Considering the expanding trend of the Monk seal towards the island of Madeira and the potential conflicts arising with humans, scientific research should emphasize on investigating these interactions.
3. Intensifying awareness efforts towards specific target groups such as fishermen and people using the sea, will play a key role in the future re-establishment of resident monk seal colony at Madeira.

EXPERIENCE AND PERSPECTIVES IN CAP BLANC (1)

Alex AGUILAR

Department of Animal Biology
University of Barcelona
Spain

Hopes for the conservation of the Mediterranean monk seal had often focused on the western Sahara population because it inhabits one of the best preserved habitats of the species, it is not subject to human pressure, it is quite large as compared to other subpopulations, and it is the only cohesive aggregation still maintaining a colonial social structure. In 1992 we started a research project to investigate the biology, conservation status and population dynamics of that colony. In this presentation I summarize the main conclusions relative to the reproductive aspects of this research and briefly discuss how these can be applied to shape conservation initiatives.

Fostering was a common behaviour. Some females were seen nursing more than one pup simultaneously, one of which was obviously non-filial. Although fostering is widespread among phocids, confirmation in monk seals is good news because it indicates that pups can survive on other mothers if eventually abandoned. When we investigated lactation and mother care behaviour we found that pups suckled in most cases for at least over 100 days and some for up to 150 days. Such a long nursing period almost doubles the maximum periods reported in other phocids and would be impossible to sustain under continuous fasting by mothers, as occurs in other phocids. Thus, through the use of time depth recorders applied to nursing females we found that, after the first 10 days after birth, they started to perform trips to the sea. The average duration of these trips was 9.5 h and the maximum duration recorded was 17.4 h. Also, weaning was gradual, as opposed to other phocids. The pup was very dependent from the mother during the first two weeks, but soon after that date it started swimming by its own, often to considerable distance from the caves. This pattern of protracted nursing, with frequent absences of the mother and precocious behaviour of the pup is critical to conservation because for years it had been believed that the finding of a lone pup on a beach implied that this pup had been abandoned by the mother and that it was therefore needed of human care. These findings show that this perception was wrong and demand revision of protocols for intervention.

We also investigated pup mortality. Weather at cap Blanc is rough and, when storms occur, the caves become a trap for young pups, which are knocked against the rocks or taken out of the cave and driven far away by the sea currents. In some months, nearly 70% of the pups may die because of this reason. This finding led in the past to two arguable proposals for action. The first was a proposal to modify the caves in order to attempt to make them more secure. The idea was to build stone barriers in the mouth of the caves to stop the swell. However, the consequences of modifying the caves were unpredictable and could render the caves useless, meaning that a really important habitat would have been lost for ever. On these grounds, the proposal was strongly rejected by a IUCN-Life Steering Committee and it was never implemented.

The second proposal was the so-called “preventive rescue”. This proposed to use the monthly incidence of storms to identify beforehand periods of the year when the pups were at higher risk, and then take pups out of the caves before the supposed arrival of a storm. These pups would be then brought to a rehabilitation centre and kept there until the juvenile stage, when they would be reintroduced back into the wild. However, the statistics of rehabilitation do not certainly provide support for this action because: i) it offers a lower probability of survival than that in the periods of worst meteorological conditions, and ii) it appears unable of providing effective integration of the “rescued” pups into the colony.

On the other hand, continuous observation of identified mothers and pups allowed to determine the number of births and to calculate the gross annual natality rate of the population at 0,3-0,43. Such rate, which is roughly half of that almost universally determined in other pinnipeds, is alarmingly low. The causes for such reproductive failure are unknown. However, the results of the genetic studies we performed on the population may give a clue on at least part of the problem. Both mitochondrial and nuclear DNA analyses showed that genetic variability was among the lowest ever found in a marine mammal. Heterozygosity was 53% lower than in other pinnipeds and the population showed evidence of having gone through a severe bottleneck. Modelling suggested that at the moment of sampling (1996), the colony, which was composed of 320 individuals, represented only about 3% of its original population size. To this it should be added that the genetic studies mentioned were made on samples collected before the occurrence of a die-off in 1996 that reduced the population to one third of its original number; modelling showed that the event reduced diversity even more, probably in a further 15%. Thus, the genetic profile of the colony would be today even worse.

The adverse effect of inbreeding and reduced heterozygosity on population fitness and adaptability on mammals has long been known. Some studies have shown that paternity success in male northern elephant seals, another species that also has very low genetic variability, is lower than in the congeneric southern elephant seals, which enjoys much greater variability. This suggests reduction in male fertility in the former species, an effect that in mammals is associated to a bottleneck. In non-pinniped mammals, inbreeding avoidance has been extensively reported, and this behaviour is particularly severe in very small subpopulations such as those at which the Mediterranean monk seal has been reduced. High pup mortality has also been associated to inbreeding depression in a number of mammals. Finally, greater disease susceptibility as a consequence of reduced genetic variation has been claimed to occur in several mammals and it can be speculated whether it was also behind the extended mortality observed in 1996 in Cap Blanc when the colony was exposed to a toxin of phytoplanktonic origin.

If genetic erosion is the main force obstructing recovery, extraction of individuals for ex-situ activities is unlikely to produce any conservation gain. Such extraction, which would have to involve a relatively numerous of individuals given the low fitness of seals raised in captivity, will inevitably represent a drain of genetic variability, perhaps critical, for the population. Moreover, if the extant Cap Blanc population suffers biological dysfunction because of impoverished genetic patrimony, any subsample of individuals would not do better.

To summarize, neither preventive rescue nor dispersal of individuals for reintroduction programs are supported by the population biology or the current status of the species. On the contrary, even in countries where protection is in force, human-produced mortality continues being a drain to populations. It is critical that funding concentrates on the strict in-situ protection of the species and its habitat and, very particularly, on: i) the immediate eradication of deliberate aggressions to seals, ii) the elimination of conflictive fishing gear, and iii) the alleviation of fishing pressure to permit increase in prey abundance.

MEDITERRANEAN MONK SEALS IN CAP BLANC - CAP BARBAS EXPERIENCES AND PERSPECTIVES

Pablo Fernández de Larrinoa¹, Azza Mint Jiddou², M'hamed Idrissi³, Antonio Araujo⁴, Hamdi M'Barek¹ and Luís Mariano González⁵

¹Fundación CBD-Habitat. Madrid, Spain. ²Institut de Recherche Océanographiques et des Pêches, Nouadhibou, Mauritania. ³Institut National de Recherche Halieutique, Casablanca, Morocco. ⁴Parc National de Banc D'Arguin, Nouakchott, Mauritania. ⁵Spanish Ministry of Environment, Madrid, Spain.

The coastline between Cap Blanc and Cap Barbas holds one of the largest populations of Mediterranean monk seals that survive in the world, and the last one that keeps a colonial structure. The colony breeding caves and some hauling-out areas used by adult males are located on the Cap Blanc peninsula, protected by a Moroccan no-fishing area and a Satellite Reserve depending on a Mauritanian National Park. North of Castillete de la Mesa area, only occasional sightings are currently performed, although the area has not been properly surveyed yet. This area is protected by a Moroccan fisheries protected area.

From 1993 to 1998, the research actions performed in the Cap Blanc monk seal colony, allowed to identify the main threats of the population; disturbances in the breeding caves, illegal setting of fishing gears, overfishing, and lack of social support for monk seal related activities. Since 2000 until today, under the frame of the Action Plan for the Recovery of the Mediterranean monk seal in the Eastern Atlantic, conservation measures began to be implemented, mainly focused on the effective implementation of the mentioned protected areas, the awareness of local populations, the improvement of the living and work conditions of fishermen, and the control and monitoring of the monk seal population.

The reinforced surveillance on the Cap Blanc breeding caves area eliminated the presence of fishing gears illegally placed, as well as the presence of goose barnacle pickers and fishermen. From 2001 until to 2006, 800 artisan fishermen have been trained in security at the sea, and provided with security materials, 80 vessel masters have been trained in repairing out-board engines, a first aid post has been repaired at the fishing harbour, and courses about sustainable fisheries have been performed among fishermen that work in the colony area. Awareness and information actions focused mainly on school students and teachers, and on artisan fishermen, conducted to a better understanding of the monk seal conservation actions, and an involvement of local population on them. During these years, the monitoring of the population allowed to photo-identify the members of the colony, as well as to detect the births of each breeding season among other parameters.

The joint action of surveillance measures, awareness and information, and improvement of living conditions of fishermen, lead to a decrease in the number of monk seals (old than pups) found dead, to a notably increase in pup production, to an increase in the presence of seals in the breeding caves, as well as to a re-colonization by adult males of surrounding areas.

THE MONK SEAL *Monachus monachus* IN THE MEDITERRANEAN SEA: GENERAL SITUATION

Daniel CEBRIAN
UNEP-MAP RAC/SPA
Bd du Yasser Arafat
B.P. 337 – 1080 Tunis CEDEX
TUNISIA

The Mediterranean monk seal is one of the mammal species most threatened with extinction. It has been classified as Critically Endangered by IUCN and legally protected in virtually all countries within its range of distribution. However, important gaps exist in law enforcement. Deliberate killing and disturbance to seals still constitute a major threats to the species at several locations.

Not reliable estimations exist for the Mediterranean seal population when it was still a common species in the Mediterranean coasts, but its former presence and reproduction all around the region is well documented. The remaining number of individuals, in the new century, is under 350 in the whole Mediterranean. Most remaining individuals inhabit Greece and Turkey while the pinniped is almost vanished from the west basin

The main reason for local vanishing is scientifically established: human-related mortality, either by direct killing (mainly with shotguns or dynamite, carried onboard) or by entanglement in static nets (trammel and gill nets).

Legal protection is granted since long ago in the riparian countries where the species remains, but the reduction of killings favoured by full legal protection is not enough to halt the extinction, because there is an extremely poor enforcement. Such passive attitude in the Mediterranean contrasts with measures taken by nations in other world regions to preclude vanishing of big mammals (rhinoceros, pandas, tigers, etc), even with very limited resources.

Habitat loss or degradation constitute another major threat to seals. The establishment of protected areas, aimed at protecting important seal habitats, is recommended by the MAP action plan, but the number of protected sites encompassing seal habitats is still extremely limited in the Mediterranean, and existing ones are not always conveniently managed. The adequate protection and management of important seal habitats is recognized as a priority by the experts.

Even although national laws and international conventions protect the species from perturbation to its critical habitat (resting caves, feeding reefs), tourist activities develop close to, and even within, those habitats. Curiously, Mediterranean countries use to efficiently prevent equivalent activities on land, such as disturbance to endangered bird nesting sites.

Visits to seal caves and their surroundings are widespread in the region and scheduled tourist boat trips including their entrance in caves (also very polluting and extremely dangerous with regard to maritime traffic safety) are being allowed. Tourist surveys show that tourist themselves are not demanding such damaging activities from the operators. Proper regulations would not affect tourism.

Destruction of monk seals critical habitat still continues, even in areas already well identified. Such destruction frequently affects other sensitive coastal habitats and species covered by the SPA/BD Protocol.

Terrestrial habitat is also degraded by marine pollutants and debris (oil, floating garbage) provoking the unsuitability of resting and whelping sites.

In spite of the highly threatened status of the species, there is relatively few basic knowledge on population size and parameters, habitat use and movement. This lack of know-how constitutes a hindrance to the identification of adequate conservation measures.

Nevertheless, sound management actions for the recovery of the species can be already undertaken based on the present knowledge. Most of the species' breeding caves existing in the areas where the biggest populations remain are identified. It has been also verified that monk seal interactions with static nets conspicuously decrease when distance between seal caves and net settings increases.

Ad hoc protection of the surroundings of inhabited caves is necessary not only to implement protection of the critical habitats (while respecting conventions and national laws), but to avoid conflicts between coastal fisheries and the species. Local communities, notably local fishermen, have been for too long forgotten basic stakeholders at the time of designing local conservation frameworks. Only properly tailored projects involving in the management the different coastal communities, and linked to a synchronic enforcement of the law, have chances to succeed in the long-term.

Efforts by RAC/SPA within the countries along the last biennia

In spite of being a critically endangered species, strongly depending on the conservation of critical habitat, previous efforts for this seal, (notably support from the European Union) have concentrated on the few biggest existing populations, while the remaining countries possibly hosting colonies and habitat of unknown status needed to cover that basic knowledge

Support to actions to identify seal critical habitats and populations in those countries, involving national official institutions (ministries, universities, etc) and the formation of local research and conservation teams, is still under way. RAC/SPA field missions were undertaken in Albania, Croatia, Syria, Tunisia, Algeria and Morocco, and are ongoing in Libya and Cyprus. However, available funds for the species are too scarce.

As stated above, enough technical knowledge to protect the species exists, but national commitments to protect already identified critical habitat, even for the most important populations of the region, are not enough.

Further research, alone, will not much help at this moment to protect the species in the Mediterranean. A political take of position to improve the chances for the most endangered seal in the world has been seen as a real need at this stage.

Table 1: Records on Mediterranean monk seal populations remaining along the species' range to be updated in the Conference on Monk Seal Conservation (Kemer, Antalya, 17-19 September 2006)

Population	minimum N° of seals reported	Last scientific record	Last reproduction data	Source or endorsing authority
West Sahara coast	+109	2005	2005	Aguilar pers. com. Gonzalez pers. com. Forcada et al 1999
Canaries	Vanished	1992	1441	Monod 1948; I.R.S.N.B. & S.M.R.U. 1993
Madeira & Desertas	23	2005	2005	Costa-Neves pers. Com. R. Pires pers. Com.
Mediterranean Morocco	Vanished?	2004	1981	RAC/SPA 2004; Mo et al 2004
Chafarinas islands	Vanished?	2001	2000	González 1989; Cebrian pers. com.
Algeria	10	2006	2006	Lefevre et al. 1989, Boutiba 1993
La Galite	Vanished	1986	1983	Gonzalez 1989
Mainland Tunisia	Vanished	1986	1975	Gonzalez 1989; Ktari-Chakroun 1978
Libya	+2	2002	1968	Norris 1972, Boutiba 1993, Mo et al 2002
Egypt	Vanished	1981	No records	Norris 1972; Marchessaux 1989
Israel	Vanished	1968	around 1928	Bertram 1943; Marchessaux 1989
Lebanon	Vagrants	1997	No records	Marchessaux 1989, RAC/SPA 2003
Syria	Vagrants	2003	No records	RAC/SPA 2003
Cyprus	+ 2	2003	1994?	Hadjichristophorou & Dimitropoulos 1994; Ozturk 1994. Cebrian pers. com.
Turkey	100 (overlap with Greece)	2003	2001	Gucu et al 2004; Guclusoy et al 2004
Russia	?	No records	No records	Cebrian 1998
Ukraine	Vanished	No records	No records	Ozturk 1994
Romania	Vanished	1960	No records	Schnapp et al. 1962; Ozturk 1994
Bulgaria	Vanished	1975	1950-60	Schnapp et al. 1962; Avellá 1987; Ozturk 1994
Greece	250 (overlap with Turkey)	2005	2005	Cebrian 1998; Cebrian and González, pers. com.
Albania	Vanished?	80's	1944	Lamani pers. com. ; Vaso pers. com.
Serbia & Montenegro	Vanished	No records	No records	Cebrian 1995
Bosnia	Vanished	No records	No records	Cebrian 1995
Croatia	Vanished	1993		Cebrian 1995
Slovenia	Vanished	No records	No records	Cebrian 1995
Mainland Italy	Vagrants	2003	1976	Di Turo 1984; Marini 1994; RAC/SPA 2003
Sicily - Pantelleria	Vagrants	1998	No records	González 1989; Marini 1994; RAC/SPA 2003
Sardinia	Vagrants	2001	1986	Marchessaux 1989; Marini 1994; Mo pers. com.
Malta	Vanished	1997	No records	Marchessaux 1989; Mo pers. com.
Mainland France	Vanished	1990	1930-35	Duguy & Cheylan 1978; Maigret 1990
Corse	Vanished	1982	1947	Troitzky 1953; Marchessaux 1989
Mainland Spain	Vanished	1984	1950	Avellá 1987; Marchessaux 1989
Balearics	Vanished	1977	1951	Avellá 1987
Mainland Portugal	Vanished	1817	1797	Avellá 1987

**AEGEAN SEAL TRUST : A Community-based Project for the Conservation of Monk Seals
in the Islands of Patmos, Lipsi, Arki, Agathonisi and Farmakonisi**

Giuseppe NOTARBARTOLO DI SCIARA¹, Anastasia MILIOU², & Theodoros TSIMPIDIS²

1Tethys Research Institute, Viale G. B. Gadio 2, 20121 Milano, Italy,

2 Archipelagos Aigaiou: Institute of Marine & Environmental Research of the Aegean Sea,
Rahes, 83301 Ikaria, Greece info@archipelago.gr; www.archipelago.gr

During the recent decades it has become evident that the continued decline of monk seals in the Mediterranean can be reversed only if deliberate killing of the seals by some members of the local fishing communities – still ongoing in the Aegean Sea – is stopped. That seal killings continue to this date in spite of all the awareness campaigns conducted thus far is a clear sign that there is an urgent need for a real strategic change. In our opinion the problem needs to be addressed locally, by establishing a tight relationship based on mutual trust, between monk seal conservation scientists and activists, as well as the fishing communities where mortality events are still known to occur.

In the Northern Dodecanese islands of Patmos, Lipsi, Arki, Agathonisi and connected islets we have established such relationships with the local fishing community and the local authorities, as a result of continued presence in the region for the past 5 years, and efficient collaboration with them in various issues related to marine conservation. We have detected a very strong interest from the local communities, to participate and acquire an active role in activities related to the conservation and management of the marine environment, monk seals included. We thus propose to undertake a combination of initiatives, which will include:

- (a) the involvement of the local communities in monk seal-related activities, concerning both the monitoring of the local population and the building of local awareness;
- (b) the establishment of a permanent fund-raising scheme (which will include local fund-raising capacity building), mostly targeting the islands' authorities, professional associations (especially those related to tourism), as well as other relevant sponsors to create a "seal-generated" fund. Co-management of this fund between scientists, fishing community and local authorities, will ensure the efficient allocation of it, as well as the evidence of its correct use. This fund will be allocated to the local fishing communities as a "reward" for their participation in the monk seal conservation, and it will be provided either in the form of netting material to repair the damages done by monk seals, or as other forms of support to the fishing communities.
- and (c) to support the development of marine-ecotourism initiatives on the islands, (while ensuring that none of the ecotourism activities will focus on the monk seal) which will contribute to a diversification of the tourist offer, an increase in revenues, and an increase in local and tourist awareness.

MONK SEAL CONSERVATION IN THE “NATIONAL MARINE PARK OF ALONNISOS – NORTHERN SPORADES”:

The point of view of the local traditional coastal fishermen supported by the Ecological and Cultural Movement of Alonnisos

Yannis VLAIKOS

Ecological & Cultural Movement of Alonnisos, representing also the Fishermens' Cooperative of Alonnisos, 370 05 Alonnisos, vlaikos@hol.gr

The National Marine Park of Alonnisos – Northern Sporades was the first attempt of establishing a marine protected area in Greece.

Its establishment, which aimed in the protection of the Monk Seal population of the region, was the result of an initiative of the Fishermen's Cooperative of Alonnisos in collaboration with the German Biologist Dr. Thomas Schultze-Westrum. The latter managed to convert the fishermen, from enemies into active protectors of the Monk Seal, already from the end of 70's. The management of this protected area was supposed to give some advantages to the local coastal fishermen as form of compensation - support for their active contribution in the protection of the Marine Park and the Monk Seal.

These advantages included:

- stop of the large scale fishing by trawlers within the park
- effective monitoring of the fishing activities, to ensure that they follow the management measures as defined by the law of the Marine park
- systematic scientific studies in relation to fish stocks and marine ecosystems
- development of fishing tourism and of alternative economic activities to stop fishing during April and May - the main reproduction season for fish.

However, since the establishment of the park and until today, all those fishermen and other members of the local community who contributed greatly to the creation of this Marine Park, were constantly being ignored and are faced as a “foreign body” in the Marine Park without having any role or say. This occurs despite the fact that international practice has shown that *“no protection can be achieved without the active participation of the local communities”*.

The fishermen of Alonnisos have a close cooperation with the local Ecological & Cultural Movement of Alonnisos and have been making all these years a conscious voluntary effort for the protection of the monk seal populations and of the ecosystems of the Marine Park overall, hence giving an excellent example that humans and nature can coexist in harmony. But we think that this has clearly not been a result of efforts of the relevant NGO or of the authorities, but of the voluntary will of the local communities and of the positive influence of certain individual scientists.

Through their every day work at sea, the fishermen of Alonnisos have also been observing the factors that threat marine ecosystems and the monk seal populations. Based on their experience they are proposing a series of management and monitoring measures that need to be adopted for the conservation of marine ecosystems and the monk seal of the region, aiming to give practical and realistic solutions for efficient protection. However, our opinion that the authorities and NGOs who carry out the decision making for this Marine Park, have been disregarding all these years the views and efforts of the fishermen and of the local communities.

As a result of this disregards of the local communities in issues of environmental conservation, the Monk Seal in Greece remains unprotected, despite the fact that millions of euros have been used for “the protection of the monk seals”.

The Marine Park of Alonnisos is one of the few parts of the Greek Seas where the Monk Seals are protected and coexist in a friendly environment with the human. But we defend that this has been

result of the voluntary and conscious efforts of the local communities and fishers, and not of the managers of the Marine Park, who may believe that scientists can achieve conservation independently from the local communities.

In April (7-8) ECMA and *EURONATUR*, in cooperation with the *Fishermen's Cooperative of Alonnisos* (FCA) and the Municipality of Alonnisos organized International Workshop for the fisheries and the protection of the Marine Park.

Fishermen from Kimolos, Kalymnos, Skiathos, Volos, representatives from the Prefecture, the Ministry of Agriculture etc. participated too.

The Workshop gave very significant conclusions and proposals put on the "declaration" of the workshop, an important document for further study and discussion.

The recently re-established Management Body of the Marine Park should take in account the proposals and the dynamic participation of the coastal fishermen at the management of the Park for the effective protection of the seals and other rare species.

MONK SEAL CONSERVATION EFFORTS IN TURKEY

Aybars ALTIPARMAK

Ministry of Environment and Forestry
10 Nolu Bina Çevre ve Orman Bakanlığı Söğütözü – Ankara, Turkey
Tel: 90 312 29 64 000/2336
Fax: 90 312 212 28 04
altiparmakaybars@gmail.com
aybarsozlem@yahoo.com

Turkey is formed of Anatolian and Thracean peninsulas surrounded by four different seas -the Mediterranean Sea, the Aegean Sea, the Marmara Sea and the Black Sea, all having very different ecological features. Salinity is 18 per thousand in the Black Sea, 23 per thousand in Marmara Sea, 32 per thousand in Aegean Sea and 38 per thousand in the Mediterranean Sea. There is no other country in the world with such a high variation on salinity levels along its shores and the variations in ecological structure of these seas affect the life forms, which inhabit them, from phytoplanktons and seaweeds to fish and marine mammals such as dolphins. It boasts the highest biological diversity in the Mediterranean system.

Despite increasing environmental problems, Turkey is among one of the very few countries that retained most of its natural structure. There are still many species that forcibly survive through special artificial means in other countries which are found living in their wild and native forms in Anatolia.

When the Mediterranean Action Plan (MAP), came into force in 1988, the “Council of Environment Protection” was formed for the plan to achieve its general objectives, and the concept of “Specially Protected Area” gained legal status. The Law Decree (no 383) was published in 1989 and put into force in order to protect environmental values of specially protected areas declared in accordance with Article 9 of Environment Law, to address their present environmental problems, to preserve and develop their historical and cultural values as well as their biological and ecological resources. There are 14 SPA declared in Turkey. These are particularly important with respect to conservation and sustainable use of biodiversity especially for being marine turtle nesting sites and habitats of the Mediterranean monk seals.

Foça being a district of İzmir in the Aegean region, is important both for natural and historical properties and has a valuable place in mythology. The importance of the areas comes from the monk seals living here for thousands of years, which even gave their name to Foça. Foça was 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” in 1990.

Restrictions were imposed upon human activities and recreational use of this area was prohibited. The procedure has been started from Foca Specially Protected Area. Enlargement procedure for Foça Specially Protected Area, which amongs the five priority monk seal conservation areas, have been continued.

MONK SEAL CONSERVATION IN THE MEDITERRANEAN: EXPERIENCE AND PERSPECTIVES IN TURKEY

Harun GÜÇLÜSOY^{1,2} & Cem Orkun KIRAÇ¹

1 The Underwater Research Society-Mediterranean Seal Research Group
SAD-AFAG, P.O. Box 420, Yenisehir, 06444, Ankara, Turkey
Tel: +90.533.488 5858, E-mail: info@afag.org, URL: www.afag.org

2 Dokuz Eylül University – Institute of Marine Sciences and Technology
Bakü Bulv. 100, Inciralti, Izmir, Turkey
Tel: +90.232.278 5565; Fax: +90.232.278 5082, E-mail: harun.guclusoy@deu.edu.tr,
URL: www.deu.edu.tr/imst

The eastern part of the Mediterranean basin comprising Turkish and Greek coasts hosts the largest population of the critically endangered monk seals in the world. Although the species is presumed to be effectively extinct from the Turkish Black Sea Coasts, around 100 animals estimated surviving along the remaining coasts of the country. In Turkey, the main threats upon the *Monachus monachus* over the last decade were found to be habitat destruction, deliberate killing, entanglement in fishing gear, and depletion of fish stocks due to overfishing & illegal fishing. Though fragmented research were carried out by several scientists and conservationists during last five decades, the monk seal conservation actions have truly started in 1987. SAD-AFAG, the pioneering national NGO established in 1987, has been effectively contributing monk seal conservation to date in the country. This presentation aims to assess the performance in monk seal conservation front in Turkey in terms of major achievements and concrete results which can be given under the following distinct fields;

1. the research and acquiring scientific data (e.g. distribution, status, ecology and biology of *M. monachus*),
2. sustainable management of aquatic resources (e.g. legislative regulations on fishing and entry into monk seal caves, no-fishing zones establishments, banning certain fish species),
3. protected areas and sustainable management plans (e.g. declarations of 1st degree zones, establishment of Foça Pilot Marine Protected Area, regulating navigation around Ayvalik, Foça and Bodrum Archipelagos, and stopping habitat destructive coastal developments)
4. public awareness and lobbying activities.
5. restoration of the monk seal habitats
6. networking for intervention to sick, wounded and dead monk seals (rehabilitation, reintroduction and necropsy studies)

Despite aforementioned achievements, the weaknesses in the monk seal conservation field in the Turkey can be listed as follows:

1. lack of coastal zone management planning in protected areas, especially within the 5 top-priority Important Monk Seal Sites of Turkey (IMST),
2. lack of adequate protection status and sustainable conservation measures within the remainder of the 12 IMSTs,
3. insufficient coordination, cooperation and consensus among the National Monk Seal Committee members including relevant NGOs, universities and public bodies,
4. inadequate patrolling and inspection of coastal NPs, SPAs. Illegal or not well-designed activities continue to undermine the quality of these habitats and disturb the species, and a lack of qualified personnel compounds the problem,
5. Local Monk Seal Committees have shown little sign of functioning adequately on their own,
6. funding remains erratic and in chronically short-supply, hampering monk seal research and conservation efforts and hindering long term planning.

The above weaknesses should be considered seriously in order to attain positive developments for the future prospects on monk seal conservation. As a matter of fact, staff of relevant public bodies - from managers to experts level- change quite frequently. Therefore, importance of institutionalized conservationist NGOs should be underlined because simply these organizations are “the memories” for a continued policy in a country. Such NGOs have the accumulated knowledge and experience that will ensure sustainable marine & coastal zone management for habitat protection, a key element for the conservation of the Mediterranean monk seals.

HOW FAR THE CILICIAN MONK SEAL COLONY WILL GO WITH THE EXISTING REGULATIONS?

Ali Cemal GUCU & Meltem OK

Middle East Technical University Institute of Marine Sciences
P.O. Box 28 Erdemli Mersin, Turkey

gucu@ims.metu.edu.tr

meltemok@ims.metu.edu.tr

Northeastern Mediterranean coasts of Turkey host the most crowded Mediterranean monk seal colony in that region which has also tended to further expand in last years. Status of this colony has been monitored since 1994 by Middle East Technical University, Institute of Marine Sciences. During past and present studies, various data which are related to size, demographic structure, and vital parameters of the colony have been obtained and evaluated. The analysis of the data reveals positive responses, such as increased breeding success, expansion of habitats and re-population on the abandoned habitats. On the other hand, parallel to the increased size in the colony, mortality has also increased blurring the future of the colony.

After 12 years of study and 6 years of conservation efforts, we have decided to evaluate past, present and future status of the Cilician colony. The questions needed to be answered were listed as

- 1) What are the positive and negative implications of conservation measures applied in the area on the colony's demography?
- 2) What are the potential risks waiting the colony in the future?
- 3) Is there a need to change or revise existing conservation strategy?

To answer these question, demographic changes in the colony is evaluated. Firstly, the census carried out in 1994 was used as the starting point. The demographic structure estimated in 1994 was updated with the number of dead seals and pups found in every proceeding calendar year (Table 1). Secondly, the data is average over the period from onset of the study to the date (1999) when the MPA was designated (pre-conservation phase). The rest of the study period is processed as the post-conservation phase. Thirdly, Ramas Ecolab (Akcakaya and Root, 1998) was used to conduct age structured Population Viability Analysis of the Mediterranean monk seal colony.

Table 1: Identified Cilician colony members with their estimated minimum ages.
†: the monk seal which found or reported as death from 1994 to 2005.

Sex	Name Years	Pre-conservation phase						Post-conservation phase					
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
F	Tekin	17.38	18.38	19.38	20.38	21.38	22.38	23.38	24.38	25.38	26.38	27.39	28.39
M	Yula †	9.38	†										
F	Kokona	8.38	9.38	10.38	11.38	12.38	13.38	14.38	15.38	16.38	17.38	18.39	19.39
F	Kir †	8.38	†										
F	Dede †	8.38	†										
F	Meryem	7.38	8.38	9.38	10.38	11.38	12.38	13.38	14.38	15.38	16.38	17.39	18.39
M	Kamash	7.38	8.38	9.38	10.38	11.38	12.38	13.38	14.38	15.38	16.38	17.39	18.39
M	Bombacı	7.38	8.38	9.38	10.38	11.38	12.38	13.38	14.38	15.38	16.38	17.39	18.39
M	Japon †	7.38	†										
M	Cecan †	7.38	†										
F	Yasli	6.38	7.38	8.38	9.38	10.38	11.38	12.38	13.38	14.38	15.38	16.39	17.39
M	Yagiz	5.38	6.38	7.38	8.38	9.38	10.38	11.38	12.38	13.38	14.38	15.39	16.39
F	Bozzy †	5.38	6.38	7.38	8.38	†							
F	Anac	4.38	5.38	6.38	7.38	8.38	9.38	10.38	11.38	12.38	13.38	14.39	15.39
M	Yakisikli	3.38	4.38	5.38	6.38	7.38	8.38	9.38	10.38	11.38	12.38	13.39	14.39
F	Melek1	3.38	4.38	5.38	6.38	7.38	8.38	9.38	10.38	11.38	12.38	13.39	14.39
F	Meltem	2.38	3.38	4.38	5.38	6.38	7.38	8.38	9.38	10.38	11.38	12.39	13.39
F	Charlie †	0.66	†										
F	Ceren		0.44	1.45	2.45	3.45	4.45	5.45	6.45	7.45	8.45	9.45	10.45
F	Umit †			0.38	†								
M	Arap			0.15	1.15	2.15	3.15	4.15	5.15	6.15	7.15	8.15	9.15
M	Ferit Jr.			0.08	1.08	2.08	3.08	4.08	5.08	6.08	7.08	8.09	9.09
F	Charlie				0.25	1.25	2.25	3.25	4.25	5.25	6.25	7.25	8.25
M	Askim				0.16	1.16	2.16	3.16	4.16	5.16	6.16	7.16	8.16
F	Ney					0.38	1.38	2.39	3.39	4.39	5.39	6.39	7.39
M	Saklikuzu					0.22	1.22	2.23	3.23	4.23	5.23	6.23	7.23
F	Sedef						0.21	1.21	2.21	3.21	4.21	5.21	6.21
F	Sanda						0.19	1.19	2.19	3.19	4.19	5.19	6.19
M	Yalcin							0.14	1.14	2.14	3.14	4.15	5.15
M	Uykucu								0.34	1.34	2.34	3.34	4.34
F	gelincik								0.34	1.34	2.34	3.34	4.34
M	Tarcin									0.24	1.24	2.24	3.24
F	Zeynep †										0.46	†	
F	Lal †										0.24	1.24	†
M	Afag †											0.26	†
F	Kay											0.26	1.26
M	Luigi											0.09	1.09
F	Rane											0.08	1.08
M	Levant												0.19
M	Tahta												0.13
F	Lamas												0.02

Normally, a pup undergoes various growth phases throughout its lifespan. In each phase, she faces different threats altering survival rate. On the other hand, durations of each phase are variable. For the applicability to the PVA model we assumed that each of the first 6 years represents a growth phase with different survival rate. Therefore we used 7 stages to build a Leslie Matrix, 7th representing 6+ age.

The main model parameters are survival and fecundity rates. Since the sample size is small, survival rate was estimated over the pooled data incorporating all age classes. Average annual fecundity was calculated as number of pups per parents (female and male). Both demographic and environmental stochasticity were estimated from the total variance of survival and fecundity and incorporated into the model.

Our approach to get answers from the model outputs;

- i) We calculated model parameters (survival and fecundity) for pre-conservation period (1994-1999), seeded the model with these inputs and run for 6 years. The output of the model is a prediction reflecting what would be the demographic structure of the colony at year 2005 if no conservation was applied.
- ii) We have compared model predicted demography with the actual numbers obtained during 2005 census to see the impact of conservation measures. We have observed highly significant difference (chi-square: $P > 0.01$) between observed and estimated values. This clearly indicated that conservation efforts improved the survival of the colony. If no conservation measure was applied, the number of seals would be less than 10 today as oppose to 30 specimens identified. Also future projections indicated that the extinction risk of the the Cilician monk seal colony within the next 50 years was almost inevitable.
- iii) To verify the model, population parameters were estimated for the post-conservation phase and the model is run for 2000-2005 period. The output was compared with the actual demography. In this case we have found no difference between observed and estimated demography, which verifies the model.
- iv) We have run the model for the next 20 years with the same parameters estimated for post-conservation period. The output was used to evaluate the future of the colony under existing environmental and demographic stochasticity. There is a 42.1 % risk that the monk seal population abundance will fall below existing level at least once during the next 20 years.
- v) Finally, we have tested various conservation scenarios to improve the probability of survival of the colony. The model outputs clearly indicates that the mortality is very high at age 1 and 2. The mortality at this ages associate with limited food availability. The weaned pups, switching from suckling to hunting are not as familiar with the fish net as the elders; yet, they are not strong enough to break free when entangled. In search of fish, they are attracted by the fishes trapped in the nets. We run the model once again keeping the parameters used in step iv, and changed the mortality rate for 1 year old youngster. Only 10% reduction in the mortality has decreased to risk of extinction within next 20 years by a factor of 10.

We concluded that existing conservation strategies certainly have a positive effect on the colony's survival. However, there is still considerable risk that overshadows the future of the colony. The model results urged us to set new tasks addressing reduction of mortality rate at early life stages of the seals.

We are grateful to Dr. Rasit Akçakaya for his valuable comments

STRATEGIE ADOPTEE POUR LA PROTECTION DU PHOQUE MOINE EN ALGERIE

Zitouni BOUTIBA

Réseau de surveillance environnemental;
Département de Biologie, Faculté des Sciences,
Université d'Oran Es-senia, Algérie

INTRODUCTION

La situation actuelle du phoque moine (*Monachus monachus*), nous oblige de chercher avant tout à définir concrètement les possibilités de sa conservation. Ces possibilités concernent à la fois les actions prioritaires qui doivent être établies en vue d'une stratégie élargie et le développement d'une compréhension partagée et commune vis-à-vis du statut du phoque en moine en Algérie.

Le plan stratégique pour la conservation du phoque moine qui émanera du programme d'action à court, moyen et long terme, devra tenir compte des principes suivants :

1. Encourager avant tout la prévention.
2. Promouvoir la coopération entre les différents intervenants.
3. Produire de l'information fiable pour faciliter le processus décisionnel.
4. Soutenir le renforcement des capacités à l'échelle régionale et ajouter de la valeur aux actions locales.
5. Encourager la participation du public à travers des actions d'information et de sensibilisation.
6. Fonder les actions sur les principes scientifiques solides.
7. Promouvoir la mise en place de réseaux d'observation et d'information.

Les échanges facilités par différents acteurs dans la conservation de la biodiversité marine (le phoque moine, en l'occurrence), tels que le Gouvernement représenté par le Ministère de l'Aménagement du Territoire et de l'Environnement, les collectivités locales, les organisations non gouvernementales de conservation et de défense de l'environnement, les peuples autochtones, et en particulier tous les usagers de la mer (marine nationale, protection civile, gendarmerie nationale, pêcheurs, plaisanciers,...) peuvent contribuer largement au plan stratégique de conservation de ce mammifère marin. D'autres initiatives subséquentes peuvent ajouter de la valeur aux efforts collectifs.

ACTIONS ENTREPRISES :

A L'ECHELLE INTERNATIONALE :

Un intérêt certain a été porté par les pouvoirs publics algériens au phoque moine depuis 1983 et des efforts considérables ont été déployés pour sa protection. Dès lors, des actions déterminantes de grandes envergures ont été menées se résumant à des participations :

- aux travaux de la 3^{ème} Conférence Internationale sur les Phoques Moines (Antalya, Turquie, novembre 1987).
- aux 2^{èmes} Rencontres Scientifiques sur les espèces marines à protéger en Méditerranée, organisées à Carry-le-Rouet le 18 et 19 novembre 1989 par l'Association pour la Protection et le Développement de la Côte Bleue, le Club Subaquatique de Carry-le-Rouet, l'Association du Parc Régional Marin de la Côte Bleue et le magazine « Le Monde de la Mer », sous le patronage des Ministères de l'Environnement et de la Mer français, le Secrétariat Général du Conseil de l'Europe et le Centre des Activités Régionales pour les Aires Spécialement Protégées.
- à la mission phoque moine d'Algérie (Secteurs : Littoral algérois jusqu'aux frontières marocaines), réalisée du 01 au 11 août 1989 puis en mai 1990 par le groupement d'Intérêt Scientifique Posidonie (G.I.S. Posidonie) dans le cadre de la convention de collaboration liant

le Parc National de Port-Cros (P.N.P.C., Ministère de l'Environnement Français) et le Centre d'Etudes et de Recherches sur la Pêche (C.E.R.P., Algérie) et financée par le CAR/ASP (PNUE) et le P.N.P.C.

- aux travaux du Comité Scientifique International pour le suivi du programme français de sauvegarde du phoque moine (Paris, 4 juin 1991 ; Paris 1^{er} et 2 juillet 1993 ; Paris 16 et 17 mai 1994).
- aux travaux de la Conférence Internationale sur les Phoques Moines (Tanger, Maroc, 21-26 juin 1992).
- à l'étude sur la faisabilité de nourrissage du phoque moine de Méditerranée en captivité (Parc National de Port-Cros, Hyères, France, juin 1993).

A L'ECHELLE NATIONALE :

PROTECTION LÉGALE DE L'ESPECE :

Sur le plan juridique national, le phoque moine est protégé officiellement par le décret du 20 août 1983 relatif aux espèces animales non domestiques protégées puis en application de la loi du 5 février 1983 sur la protection de l'environnement. Aux termes de cette loi, la destruction, la mutilation, l'enlèvement, le transport, la vente et l'achat des animaux protégés sont interdits.

A L'ECHELLE REGIONALE :

1. ENQUÊTES :

L'objectif des enquêtes et des prospections systématiques du littoral (patrouilles sur terrain et sorties en mer) est, d'une part, de rencontrer et converser avec le maximum de personnes ayant des connaissances précises sur le phoque moine de la Méditerranée et ses habitudes, et d'autres part, de noter la présence éventuelle de phoques en mer le long du littoral, ou à terre. Ces sorties permettent également de recenser et d'autopsier d'éventuels cadavres échoués, de recenser les grottes et les abris utilisés comme habitat par ce mammifère marin, de mettre en place un Réseau d'Observateurs tout le long de la côte algérienne et enfin d'accumuler le maximum de données sur la biologie, l'écologie et l'éthologie de l'espèce.

Le rôle joué par les pêcheurs locaux dans la survie du phoque moine étant ressenti comme primordial, leur intéressement au maintien des individus existants et à leur éventuelle reproduction et même réintroduction dans les habitats fréquentés jadis est remarquable.

Ainsi, les témoignages des pêcheurs doivent être dans la mesure du possible confrontés avec les données pratiques issues des sorties en mer et des patrouilles sur terrain.

Les enquêtes auprès des gestionnaires de la pêche (les pêcheurs en particulier) pourront apporter un élément de réponse à la nature et au degré des interactions entre les activités de pêche et les populations de mammifères marins, le phoque moine entre autre.

2. PROSPECTION SYSTEMATIQUE DU LITTORAL :

Pour la réussite de cette phase d'investigations sur l'espèce *Monachus monachus*, il est nécessaire de mettre à la disposition des enquêteurs, guides, plongeurs et scientifiques des moyens logistiques de déplacement en mer et sur terrain et un matériel audio visuel approprié puisqu'il est question de collectes d'informations, de recensements et d'observations.

3. MISE EN PLACE D'UN RESEAU D'OBSERVATEURS :

Il est souhaitable d'accumuler un maximum de données sur la biologie du phoque moine, la dynamique et la structure de sa population, le lieu et la nature de son habitat. Dans ce cadre, la

mise en place d'un « **RÉSEAU D'OBSERVATEURS** » coordonné et coopératif ou plus encore d'« **D'OBSERVATOIRES** » sur ce mammifère marin à travers tout le littoral algérien est plus que nécessaire, avec des interlocuteurs fournissant des données fiables et ayant la volonté d'intervenir efficacement dans le sens d'une gestion durable de la biodiversité marine.

4. ACTIONS D'INFORMATION ET DE SENSIBILISATION :

En matière de protection de l'environnement et de ses composantes faunistique et floristique, l'expérience des pays développés est de ce point de vue édifiante : tous les problèmes de survie d'espèces animales ou végétales menacées n'ont pu être surmontés que grâce à une grande mobilisation de l'opinion publique au moyen de campagnes d'information et de communication d'envergure qui ont imposé des solutions dont l'évolution se fait sans cesse en faveur des défenseurs de l'environnement.

Cependant, ces solutions ne peuvent être concrétisées et couronnées de succès que si elles sont soutenues par un programme d'éducation environnementale ambitieux et cohérent. C'est à ce niveau qu'intervient le rôle de l'information et de la communication dont l'efficacité impose que soient préalablement définis les publics cibles comportant plusieurs catégories (pouvoirs publics centraux, des officines diplomatiques, des structures et institutions de recherche, administrations centrales, les collectivités locales, les administrations maritimes et portuaires, pêcheurs professionnels et amateurs, plaisanciers, estivants, touristes, le mouvement associatif, les écoliers, les lycéens et étudiants,...) ainsi que les moyens médiatiques adéquats pour les atteindre (affichage public, publi-reportage par voie de presse écrite et le document télévisuel, le spot radio et télé, brochures, prospectus, dépliants, illustrations et bandes dessinées,...).

5. RECHERCHE SCIENTIFIQUE :

Dans le cadre de ce plan d'action et des différents projets de recherche en matière de protection de l'environnement avec sa composante faunistique marine, un programme national de recherche sur le phoque moine devra être partie intégrante et lié aux autres initiatives mises en œuvre dans la région, notamment celles liées à l'établissement des zones protégées. La propriété doit être accordée tout spécialement aux activités suivantes :

- Recensement systématique et périodique des populations et de leurs habitats par observation directe et utilisation de techniques appropriées.
- Réalisation d'études visant à identifier les sites les plus appropriés pour l'établissement des aires protégées spécifiques à l'espèce.
- Réalisation de recherches socio-économiques visant à étudier comment les communautés locales pourraient profiter du processus de conservation et ainsi être encouragées à protéger le phoque moine et son habitat. A cet effet, les pêcheurs ont un rôle fondamental à jouer dans la collecte de données et la conservation de l'espèce tenant compte des différentes interactions qui peuvent surgir à différents degrés selon les localités entre le comportement du phoque moine et les activités de pêche, souvent fatales. Ainsi, et suite aux différentes conclusions émanant de notre expérience à ce sujet, si les pêcheurs sont intéressés à la présence et la protection du phoque en leur octroyant des primes, les choses peuvent évoluer favorablement.

6. CREATION D'AIRES MARINES PROTEGEES :

Il apparaît donc indispensable et même urgent de renforcer les mesures de protection et de veiller à leur application stricte dans les secteurs où l'espèce survie encore. Dans ce cadre, des démarches ont été entreprises auprès des autorités compétentes (Présidence, Gouvernement, Ministère de l'Intérieur, de l'Environnement, de l'Enseignement Supérieur et de la Recherche

Scientifique, et aux différentes wilayas concernées) pour la création de réserve naturelles. Deux réserves ont été proposées :

- **Iles Habibas** : située au sud ouest d'Oran, le site a fait l'objet d'une étude détaillée sur ses caractéristiques et la nature de sa biodiversité pendant l'été 1999 par les chercheurs de l'Institut des Sciences de la Mer et de l'Aménagement du Littoral (ISMAL, Alger) et son classement en aire protégée est en cours.
- **Ile Rachgoun**: localisée au environ de Béni Saf (wilaya de Aïn Témouchent), cette île sera, incessamment le projet d'investigations de l'équipe du Laboratoire de Recherche : Réseau de Surveillance Environnementale, Université d'Oran) en vue de son classement en zone protégée.

De telles réserves seraient, bien entendu, bénéfiques pour tout l'écosystème (biotopes et biotes) des secteurs concernés.

CONCLUSION GÉNÉRALE :

Il est toutefois important de rappeler que *Monachus monachus* fait partie d'un équilibre naturel complexe, et qu'il est de notre devoir de prévenir et d'éliminer toute cause qui risquerait de rompre cet équilibre si fragile. Si le phoque moine arrive à être sauvé, la preuve sera faite qu'un pas dans le sens d'une prise de conscience collégiale a été franchi. Par contre, si ce paisible mammifère venait à disparaître un jour, notre société apparaîtra alors très coupable.

STUDIES ON HABITAT SUITABILITY AND SIGHTINGS OF THE MEDITERRANEAN MONK SEAL IN MEDITERRANEAN MOROCCO AND TUNISIA (2000-2005)

Giulia MO¹, Hocein BAZAÏRÏ², Daniel CEBRIAN³ Sabrina AGNESI¹, Abdellatif BAYED⁴, Atef OUERGHÏ³

1 ICRAM, Via di Casalotti 300, 00166 Rome, Italy; giulia.mo@icram.org

2 Fac.des Sci. Ain Chok, B.P. 5366, Maarif, 20100 Casablanca, Morocco; hoceinbazairi@yahoo.fr

3 UNEP-MAP RAC/SPA, B.P. 337 - 1080 Tunis Cedex. Tunisia; car-asp@rac-spa.org

4 Institut Scientifique, B.P. 703, Agdal, 10106 Rabat, Morocco; bayed@israbat.ac.ma

The present paper provides information relating to four recent Mediterranean monk seal (*Monachus monachus*) habitat and sightings studies conducted along the Mediterranean Moroccan and Tunisian coasts. Habitat suitability studies were conducted in most of the rocky sectors of Mediterranean Morocco while in Tunisia this was carried out only in the Archipelago of La Galite. Fishermen surveys geared at collecting information on monk seal sightings were carried amongst the principal artisanal fishermen communities of Mediterranean Morocco. The recent sighting data indicates the need for specific protection and cave monitoring activities in selected stretches of the Moroccan coast. Further habitat and sighting information studies need to be carried out in northern Tunisia so as to identify a more defined, yet immediate, protection and monitoring strategy for individuals inhabiting this area of the Mediterranean.

Experiences and perspectives in Libya: Mediterranean monk seal sighting and habitat studies (2002-2006)

Abdulmaula HAMZA¹, Giulia MO², Sabrina AGNESI², Khaled ETAYEB³, Ramadan ABDULBARI⁴, Hassan BUKHIREALLA¹, Ibrahim ETABUNI³ and Mohamed ALGUMEZI¹

¹ The Environment General Authority (EGA), PO Box 13793 Tripoli-Libya

² Istituto Centrale per la Ricerca Applicata al Mare (ICRAM), Via di Casalotti 300 - Rome 00166-Italy

³ The University of Alfateh, Tripoli-Libya

⁴ Marine Biology Research Centre, Tajura-Libya

The Libyan north-eastern Cyrenaican coast is a 500 km long coast, described as rich in marine biodiversity yet with a noticeable paucity of data on the presence and abundance of different marine species, amongst which the Mediterranean monk seal (*Monachus monachus*) for which the most recent data dates back to the 1970s. Recent initiatives carried out on this species, within an EGA-RAC/SPA-ICRAM Memorandum of Understanding; which involve a fisher survey, conducted in spring 2002 out of the main active landing sites of the region, provide updated monk seal sighting information. 100 fishers were interviewed and 41% of them recognized the monk seal and were able to provide detailed information on sightings. Analysis of this sighting information as well as the geomorphologic characteristics of the study area highlighted the need to conduct further research in selected stretches of the study area so as to identify potential monk seal caves and shelters worthy of future monitoring activities. Fieldwork on the identification of marine caves of interest for monk seal use was conducted during 2006 in the coastal stretch from Tolmitha to the west of Soussa, on a coastal stretch extending over approximately 100 km. 13 caves were identified, measured, mapped and their location put into a GIS. In order to assess the degree of use of eventual monk seals using this area some of these caves should be the object of future monitoring activities. Future work on the identification of other marine caves of interest for the species should be carried out in other selected stretches of coast further to the east such as the area from Derna to Ras at Tin and Bard'a island. Specific conservation measures need to be implemented to protect the areas with highest monk seal sightings from a number of threats including future plans of coastal development and the use of illegal fishing activities.

THE FIRST CONFIRMED RECORD FOR MEDITERRANEAN MONK SEALS IN SYRIA

Mohammad JONY¹, Amir IBRAHIM²

1 Fisheries department, directorate of agriculture, PO Box 4, Lattakia, Syria.

E-mail: mohammadjony@gmail.com

2 Rector of Tishreen University, P.O. Box: 2230, Lattakia, Syria.

E-mail: president@tishreen.shern.net

Up to 2005 the presence of Mediterranean monk seal has not been verified along the Syrian coasts, mainly because no studies or surveys on this had been conducted with the exception of the quick survey that (Mo G et al, in press) had carried out which showed that the northern parts of the Syrian coastline were suitable for their presence. In addition to the Turkish information about the great possibility of the presence of this seals in the adjacent Syrian coasts (Gucu et al in press). That led us to condense the monitoring and interviews with the fishermen to prove the presence of the monk seal along the Syrian coasts. (To observe the monk seal 26 times in 9 sites along 60 km in different times, can't be accidentally).this was the reason lying behind the works that turned out with the sighting of the monk seal directly 10 km north to Lattakia in the latest of April 2005,and we documented it by video. We again observed it in april2006 in the same location.

Thus, we have the truth that the monk seals exist on the Syrian coasts, at least for nourishment if they weren't inhabitant. It was also noticeable that 15 observations occurred in inhabited places.

One thing left is to prove the monk seals habitation in caves in the Syrian coast. During which time protection has to be held through a mutual or a separated protection area.

MONK SEAL CONSERVATION EXPERIENCES AND PERSPECTIVES IN ALBANIA

Rezart KAPEDANI

Fishery Development Project
Rr. Muhamet Gjollështa Nr. 56 Tirana, Albania
Tel +355 6921 07019
E-Mail: rezikap@yahoo.com

The Albanian Coast is divided into the Adriatic coastline and Ionian Coastline. The historic data confirms that the last scientific evidence of monk seal sightings in Albania date in the early 1980's, while the most recent observed pups are back in 1944. The most important efforts to analyze the possibility of remaining monk seal population in Albania were two:

- (i) The Croatian NGO "Grupa Sredozemna Medvjedica" together with Albanian NGO "Aquarius"
- (ii) The survey coordinated by the IFAW

The first survey was focused more on the Adriatic Sea (the main focus was on Vis Archipelago in Croatia). They reported sightings of the monk seal in the Adriatic Sea, but they do not know exactly where it gets sheltered. Nowadays the monk seal population tends to shelter in sea caves, away from human pressure, thus it seems very improbable that they will shelter in the Albanian Adriatic coastline, which is characterized by lowland coastline and dense urbanization.

The second survey was financed by the Principality of Monaco and coordinated by the IFAW. This survey was conducted in compliance with action 3.1 of collection of information, through interviews with the fishing communities that operate in areas where monk seal presence was hypothesized and needed verification. This area included nearly all of Albanian Ionian coast and nearly 1/3 of the fishermen (professional and amateur) and of the cage culture farmers were interviewed. The results were somehow encouraging (for further details: Mo.G., Agnesi S. 2005 – Survey on *Monachus monachus* sightings and potential habitats. ALBANIA. Final Report. *IFAW Technical Report, Contract Reference n. 050-40MMH026-5109-WHP-FY05, 01/07/04*. 31pp.).

The area of major interest was the western coast of Karaburun Peninsula. In order to prevent the biodiversity of the area (including the possibility of monk seal existence) the Government of Albania has taken the following measures: (a) Declaring a partial area of Karaburun Peninsula a national Park (possibly it will be extended to the whole peninsula) (b) The future approval of the western coast of the Karaburun Peninsula as a Water Protected Area.

The first measure in the future will guarantee lower human pressure (both from tourism and urbanization). While the second measure, will guarantee the control of fishing activity in the area (both licensed and IUU fishing). This improves the possibilities of shelter for the monk seal in case a population is established there or in the nearby area. The proposed measure for the future will be the following:

- a) identification of suitable monk seal caves in the study area with particular attention given first to the rocky cliff sectors surrounding the areas characterised by monk seal sightings
- b) establishment of a medium-long term monitoring of the suitable monk seal shelters in the study area through the use of non-invasive methodologies so as to quantify monk seal presence and coastal habitat use in Albania
- c) set-up of a joint collaboration monitoring scheme with Greek researchers aimed at monitoring monk seal presence in the nearby northern Greek coasts
- d) formulation and reinforcement of a regulation prohibiting trawling on seagrass meadows and at depths <50 m or within 3 nautical miles from the coast so as to safeguard fish nursery areas and sensitive marine biocenosis
- e) establishment of adequate protection schemes for the caves, proven to be utilised by monk seals, through the monitoring activities of point a)

- f) awareness building amongst the local fishery communities to diminish the risk of intentional killing and illegal fishing activity practices and increase the possibility of collecting information on sightings
- g) capacity building of a national team of experts dedicated to monk seal and other protected species investigations

**EXPERIENCES AND PERSPECTIVES IN ITALY: UPDATE ON *MONACHUS*
MONACHUS SIGHTINGS AND HABITAT STUDIES ALONG ITALIAN COASTS (1999-
2006)**

Giulia Mo

ICRAM, Via di Casalotti 300, 00166 Rome, Italy; giulia.mo@icram.org

Despite the fact that the monk seal has been defined as absent from Italian coasts during the last decades, a certain number of sightings have been reported by fishermen and private citizens. The present paper indicates the general details of the reported monk seal observations recorded along Italian coasts since 1999. It also provides a summary of potential monk seal coastal habitat studies conducted in Italy during the same timeframe. The observations indicate that sightings occur along the Sardinian, western Sicilian islands and southern Italian shores and that some observed individuals may have transited along Italian coasts for several weeks. Cave identification studies provide baseline information for future coastal monitoring regimes of southeastern Sardinia. Implications for future conservation initiatives are discussed.

THE CONSERVATION OF THE MONK SEAL UNDER THE BERN CONVENTION

Carolina LASÉN DÍAZ

Secretariat of the Bern Convention
Council of Europe
E-mail: carolina.lasen-diaz@coe.int

A number of global and regional biodiversity conventions are relevant for the protection of the Monk seal: from global treaties such as the Convention on Biological Diversity, the Bonn Convention and CITES, to regional agreements like the Bern and Barcelona Conventions, aimed at the protection of the marine Mediterranean environment and European wild fauna and flora, respectively.

The aim of the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention, 1979) is to ensure the conservation of protected species and natural habitats, as well as the need to take account of wildlife and their habitats in national planning and development policies, and measures against pollution. Another important element of the Bern Convention is the emphasis it places on the need for international co-operation regarding the protection of migratory species. The Convention emphasises the "essential role" played by wild flora and fauna in maintaining ecological balances and recognises that their conservation should be taken into consideration by governments when they set national goals and programmes.

The Convention notes that numerous species of wild flora and fauna are being seriously depleted and focuses its attention on endangered and vulnerable species, "especially endemic ones", and threatened habitats. It therefore provides for a whole set of measures intended to address this situation. The legal obligations undertaken by its 45 Contracting Parties concern the conservation of species and the protection of habitats, and include the need to take legislative and administrative measures to ensure the special protection of the wild fauna species listed in Appendix II (strictly protected species). The Convention's system of "strict protection" includes the prohibition of all forms of deliberate capture, taking and killing, and deliberate damaging of breeding or resting sites of species listed in Appendix II, as well as the possession of and trade in these animals, alive or dead, including stuffed animals.

All species of small cetaceans in the Mediterranean are included in Appendix II, as well as the four species of marine turtle (*Caretta caretta*, *Lepidochelys kempii*, *Chelonia mydas*, *Eretmochelys imbricata*) and the Monk seal (*Monachus monachus*).

With regard to migratory species, Parties to the Bern Convention are committed:

- to co-ordinate their efforts for the protection of the migratory species listed in Appendices II and III and whose range extends into their territories, and
- to take measures to ensure that the closed seasons and/or other established procedures regulating exploitation are adequate and appropriately disposed to meet the requirements of the migratory species listed in Appendix II.

The annual meeting of the Parties to the Bern Convention (the "Standing Committee") makes recommendations to Parties concerning measures to be taken for the further development and implementation of the Convention. Recommendations are adopted based on proposals submitted by the groups of experts set up under the Convention, as a result of independent consultants'

studies carried out in the framework of the Convention, or following the examination of case-files or specific implementation issues on certain issues or sites. The effective implementation of the Convention and related recommendations is supervised by means of a system of case-files, on-the-spot-appraisals, and follow-up to the Recommendations adopted by the Standing Committee.

The Standing Committee of the Bern Convention adopted Recommendation No.6 (1986) on the protection of the Mediterranean Monk Seal, followed by co-operation initiatives with UNEP/MAP and RAC/SPA. Further relevant instruments include Recommendation No. 43 (1995) on the conservation of threatened mammals in Europe, which includes the Monk seal in the list of taxa needing conservation or recovery plans, and Resolution No. 6 (1998) listing the species that require specific habitat conservation measures, and which also includes *Monachus monachus*.

FUNDING MEDITERRANEAN MONK SEAL CONSERVATION QUICK SCAN OF POSSIBILITIES AND CHALLENGES

Bart ROMIJN

Warner Strategy and Fundraising, romijn@wsfr.nl
www.wsfr.nl

Commissioned by International Fund for Animal Welfare
info-eu@ifaw.org, www.ifaw.org

Purpose

The purpose of this paper is to provide input for the strategic discussion about funding conservation of the Mediterranean monk seal. Total costs for monk seal conservation priorities in the Mediterranean area only are roughly estimated at €5 – 7 million a year. No comprehensive overview is available of existing budgets or investments for monk seal conservation. However, all evidence shows that current funding is insufficient and fragmented and that a major, internationally concerted action is needed to secure future funding.

Main funding sources

The paper provides a brief overview of current grants and possible funding opportunities for the conservation of the Mediterranean Monk Seal. It distinguishes five major categories;

1. Governments and their agencies
2. Multilateral institutions
3. Foundations
4. Private sector
5. Individuals

The way forward

A further exploration is needed on sources, and, more importantly, on the potential of further harnessing existing funding relations and commitments. But, stepping up fundraising efforts is not the only issue monk seal conservation is faced with. There are two more key challenges:

- Cooperation on fundraising. This means to avoid duplication and to foster cooperation and optimal synergy between the various stakeholders, governmental agencies, Convention Secretariats and Working Groups, NGO's and others.
- Management of funds raised. This covers the whole range of accountable, efficient, profitable and effective fund management: fundraising, management of available funds and disbursement.

Strategy

In addition to the fundraising itself, these two challenges must be taken into account when developing a funding strategy. The goal of the funding strategy is to ensure adequate and sustainable funding for the conservation of the Mediterranean monk seal. This translates into:

- a. Sufficient funds to be raised,
- b. A stable funding basis, e.g. through deployment of a balanced mix of complementary funding sources and fundraising mechanisms, and
- c. An efficient and effective structure to manage and disburse funds.

The strategy must answer the following questions:

1. Why is conservation of the monk seal urgent?

2. What are the key challenges and priorities of the conservation of the monk seal (based upon the monk seal action plans)?
3. What is the legitimacy and current constituency (legislative, institutional, public)? In other words: who do support conservation of the monk seal, and what are the common grounds of their support?
4. What is current financial support?
5. What is the total budget needed annually (specified for priority categories, areas/countries; based upon the monk seal action plans)?
6. What are the envisaged beneficiaries / implementing agencies?
7. What are the primary target funding sources and basic funding propositions in the various categories: governmental, multilateral, foundations, private sector, individuals?
8. How to co-ordinate and implement the fundraising?
9. How to manage and disburse funds raised, both central and decentralized? This must comprise an assessment of alternative fund management mechanisms.
10. What are the priority actions envisaged and what is the indicative budget to implement the fundraising strategy itself?

Monk Seal Conservation Trust Fund

Pre-empting on the assessment of alternative fund management mechanisms, a monk seal conservation trust fund might be considered. A trust fund touches upon the three vital aspects of funding for the monk seal: fundraising, cooperation and fund management. The objectives of a monk seal conservation trust can be multifold, e.g. funding of nature serves, specific species activities, grants in a competitive system. It can also be limited to priority cooperative actions and actions that can not be implemented and/or financed on a national basis only. In addition to the monk seal, there are many more conservation concerns in the area at stake. This might support an initiative for a broader, Mediterranean conservation trust fund. However, such as trust fund will not be able to address monk seal conservation measures in the Atlantic Ocean. Furthermore, the urgency of stepping up monk seal conservation measures does not allow for a probably much more complicated and longer process to establish a general Mediterranean trust fund.

It goes without saying that the establishment of a monk seal trust fund needs quite some investment in terms of human and financial resources, of which defining the strategy is only a first and easy step. Once a monk seal conservation trust fund emerges as a preferred option, one has to undertake a feasibility study. The table below provides a number of aspects to be assessed.

Advantages and disadvantages of Trust Funds

Advantages	Disadvantages
<ul style="list-style-type: none"> • Due to the long-term nature, Trust Funds facilitate the long-term planning process of monk seal conservation. • Transparent, if well designed. • Provide sustained funding, mitigating risks of unexpected stoppage of funds due to political changes, budget cuts, economic austerity programs, etc. • Since they are independent of government or donor instigated bureaucratic or multiple or complex procedures, Trust Funds can react more flexibly to new challenges. • More capable than large donor agencies of overseeing many small-scale projects, and adjusting requirements to fit local capacity and circumstances. • Facilitate coordination between various actors (donors, government, and civil society). • Leverage effect: Once established, Trust Funds can attract important additional funding from various sources. • Enjoy privileges such as tax exemption that enable full application of available funds to designated beneficiaries. 	<ul style="list-style-type: none"> • Its establishment will take a number of years, which is slow in the light of the urgency of monk seal conservation. • An endowment ties up large amounts of money, which only generate relatively modest income, a part of which is spent on administrative costs. • Minimum size for a Trust Fund to be cost effective is typically € 5 million. • Conservation Trust Funds may sometimes have high administrative costs, especially if the fund's capital is relatively small. • Possibility of low or unpredictable investment returns, especially in the short term. • Existence of a Trust Fund can prompt cutbacks in other conservation funds by host governments and donors for the Mediterranean and the Atlantic coast.

Annex V

SOME NEWS RELEASE

Extracted from EcoMEDIA Magazine n°4 (1 October 2006)

MONK SEAL, SYMBOL OF MEDITERRANEAN BIODIVERSITY **Abderrahmen Gannoun, SPA/RAC Director**

Mediterranean biodiversity is incurring large losses and the pace of this shortfall is attaining worrying speed. The monk seal is one of the most endangered species. Only around 350 individuals remain in the entire Mediterranean area: the time has come to act effectively to avoid the monk seal's complete disappearance from our sea. **The international conference on monk seal conservation** that took place in Kemer, Antalya (Turkey), in the framework of **BLUEweek-MEDday**, examined the strong and weak points, as well as the obstacles that still need to be overcome to invert current trends and to try and improve the biodiversity situation. Undoubtedly, this is an



ambitious objective, but a challenge we must meet.

methods that are able to accelerate the implementation of the action plans for monk seal conservation.

The main conclusions arising from the meeting, organised by the **Regional Activity Centre for Specially Protected Areas, SPA/RAC**, consisted in identifying

The mechanisms proposed by the conference are two-fold: the creation of an investment fund for monk seal protection activities, on the one hand; and the setting up of a shared control system that can monitor the state of implementation of a joint work programme yet to be devised and that can avoid delays and deferments, on the other. Essentially, the idea is to establish a managing committee made up by delegates from the three relevant conventions (Bonn, Bern and Barcelona), but also by experts and scientists and by representatives of the concerned economic sectors, such as the fishing and tourist industry, who interact directly with the Mediterranean's natural resources and with its biodiversity.



It goes without saying that research in this field is of paramount importance. Without research, identified solutions can only be partially effective; because what we are trying to achieve is concrete action directly on the field. And the starting point is to raise awareness among interested stakeholders: the fishermen, the economic actors - such as the tourist industry and maritime transport sector - as well as among the populations living close to the habitats of

endangered species.

Firstly, therefore, there must be increased investment in education and a system based on economic incentives, able to compensate for the economic losses deriving from the limitation of activities that have a negative impact on biodiversity conservation. These tools may turn out to be extremely useful for active collaboration by citizens. The next step should consist in rehabilitating the degraded and deteriorated sites and habitats.

The monk seal is an edifying example of the current biodiversity situation in the Mediterranean. Its current state is the negative result of the irrational exploitation of natural resources of the Mediterranean ecosystem; saving this endangered species is becoming the universal symbol of a challenge to be met. From this moment onwards, we must set the good example and act effectively to extend the conservation effort to other species that are equally threatened by extinction.



STARVATION: ONE OF THE THREATS

Ali Gucu, Researcher Mersin University, Turkey



«In 1994, the Institute of Marine Sciences and Technology of the Middle East Technical University had just completed a 14 year-long survey on fishery stocks in the Cilician coast of southern Turkey, when I first heard of 6 monk seals being slaughtered by fishermen. That it is when I became interested in these elusive marine mammals and I decided to find out more about them». Ali Gucu is a researcher from the Institute of Marine Sciences of the Middle East Technical University. Since 1994, he has been studying the biggest Turkish monk seal colony

situated in the southern coast of Turkey. This is his story.

«I started by interviewing fishermen who, at first, were very reluctant to talk about seals because of their fear of losing fishing grounds. Then I carried out a brief field survey in collaboration with WWF International. We monitored the entire territory with a Zodiac motorboat, swimming into every coastal cave searching either for the animals, or their tracks and trails. We found out that the area hosted the biggest Turkish monk seal colony, currently numbering approximately 30 individuals. Amazingly, we also discovered that what was driving monk seals to extinction was exactly the same threat that was damaging local fish stocks: intensive and industrial fishing practices. Surveys estimate, in fact, that the Cilician coasts have suffered a fifteen-fold drop in fish catches since the 1980s and that seals suffering from starvation have become common.



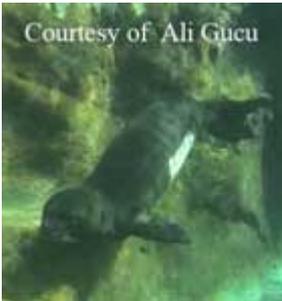
For this reason, in 1999, the area inhabited by the Cilician colony was designated a protected zone, and was regulated by new laws restricting trawl and purse seine fishing along the 16 miles of Turkish coast opposite the island of Cyprus. The trawler owners subsequently agreed to the ban, provided that the coastal 3-mile trawl exclusion zone was reduced to 2 miles in the remaining fishing grounds. These restrictive measures actually improved catches for traditional, small scale fishermen and caused a five-fold increase in the number of seal pups being born every year.

Although there is still no clear evidence to prove this, climate change seems to represent an added threat for the species. A shift in the whelping season was in fact recorded, with more pups being raised during the autumn-winter months

rather than at the end of summer, at a time when violent sea storms are more likely to happen.

Currently, in Turkey, there is a significant number of public and private institutions that are contributing to save the monk seal from extinction, like Levant Nature Conservation Society, TUBÝTAK, the National Scientific and Technical Research Council, the United Nations Development Program (UNDP), the PADI Foundation (USA), and BTC Co. the Environmental Investment Program of a pipeline company.

What still requires urgent attention to save these animals from extinction, according to Ali Gucu, is the adoption of permanent fishing regulations (currently laws are approved on a two-yearly basis). Furthermore, the institution of small no-take zones (NTZ) - areas of sea that are closed to fishing - in front of monk seal caves during the whelping season would greatly increase the survival rate of seal pups, allowing them to become strong reproductive adults».



SIX MILLION EUROS PER YEAR TO SAVE THE MONK SEAL

Simonetta Lombardo, Communication Officer INFO/RAC

350 Monk seals, maybe fewer, currently inhabit the Mediterranean, largely along the Greek and Turkish coasts. An additional 150 live in colonies in the Atlantic Ocean: only 3% of the original extant population. The slaughter of the most endangered marine mammal continues: despite the fact that scientific data collected on the species are increasing, that many countries have established conservation laws and that international regulations exist for its protection. To halt the extinction of the world's rarest pinniped, and one of the representative species of the Mediterranean, financial investments of at least 6 million euros a year are needed to fund research and conservation plans as well as local development projects. Because monk seal conservation cannot be achieved without the participation of local communities, fishermen and the tourist sector, who could be motivated by alternative development opportunities and by financial compensation schemes.

These are some of the main and most interesting conclusions drawn by the 50 or so experts and international officers that gathered in Kemer, in Turkey, for the **International Conference on monk seal conservation**. The meeting organised by **SPA/RAC**, the Tunis-based **Regional Activity Centre on Specially Protected Areas**, was held as a central event in the framework of **BLUEweek-MEDday**, devised by the **Information and Communication Centre (INFO/RAC) of the UNEP/MAP**.

Over eight years have elapsed since the last international meeting was held focusing on this species, symbolising biodiversity conservation in the Mediterranean. The situation that clearly emerged from the meeting leaves no doubts. The genetic impoverishment of the population has been extensively recorded, environmental conditions are worsening, 40% of natural coastline have been lost to coastal development, cities are expanding, tourist centres, holiday homes, illegal fishing practices are on the rise, the progressive decline of fish stocks, and the obstacles hindering the protection of the marine environment are but some of the many "enemies" of the only seal that has lived in the Mediterranean since time immemorial.



In many countries, indeed in the entire northern half of the Mediterranean, this marine mammal is only a sporadic visitor: regular sightings are recorded on the southern shores of Italy and in Sardinia; other individuals have been sighted in Spain and in the Balearic Islands, but the truth is that the species has largely settled in Greece and Turkey, with important and valuable exceptions along the north African coasts. Another important hotspot for the conservation of this species is represented by the Atlantic colonies of Madeira and of the area between Mauritania and Morocco, which suffered a dramatic population reduction in the 90s and is slowly recovering, currently reaching a population of approximately 150-180 individuals.

The data speaks for itself: the monk seal is the world's most endangered marine mammal. And, as many experts in Kemer remarked, their slaughter continues right before our eyes: the problem is widely known and recognised and the warning is issued year after year. Now all efforts need to be aimed at stopping this dramatic loss before it's too late.





UNEP

