



MEDWAVES

MAP CO - ORDINATING UNIT • NEWS BULLETIN PUBLISHED IN ENGLISH AND FRENCH • ISSUE No 12/1 1988

ACTION PLAN FOR THE PROTECTION OF THE MONK SEAL IN THE MEDITERRANEAN

Its principles were defined by the expert consultation and were favourably received by the first meeting of the MAP Scientific and Technical Committee.

The Mediterranean monk seal can from now on depend on the co-operation of the coastal States and the international scientific community for the protection of both the species and its habitats in the region. This is the result of a whole series of developments in the last few months, the high point of which was the expert consultation meeting on the conservation of *Monachus monachus* in the Mediterranean which was held in Athens, January 11 and 12, 1988. This consultation was convened jointly by UNEP and IUCN (the International Union for the Conservation of Nature), in collaboration with the MAP Co-ordinating Unit. The aims of the meeting were mainly to establish the actual situation as concerns the monk seal in the Mediterranean, to assess the activities and programmes proposed by the Contracting Parties and institutions concerned and to come up with a mechanism to co-ordinate all activities undertaken for the safeguarding of the species. At the conclusion of the two-day meeting, the delegates and experts from 10 countries, having examined and amended the Draft Action Plan submitted to them, adopted it and approved a series of actions to be carried out as soon as possible.

Outcome of a long process

For the species threatened with extinction in the Mediterranean, such as the monk seal *Monachus monachus* and the sea turtle *Caretta caretta*, the turning point came on 3 April 1982 when the Mediterranean coastal States adopted the Protocol on the Specially Protected Areas. Four years later, the Protocol entered into force. To date, it has been ratified by 8 Mediterranean countries and the EEC, whereas five more have signed it and are in the process of ratifying it as well. The Articles of the above mentioned Protocol are of a special interest for the monk seal: Art. 7 provides for each Specially Protected Area "the



regulation of fishing and hunting and of the capture of animals..." while Art. 9 stipulates that exemptions granted in matters of protection "must not be of a nature to cause either the extinction or the substantial reduction in the number of individuals making up the species or animal populations..., particularly migratory species and rare, endangered or endemic species...". The creation of Specially Protected Areas is certainly a long-term process, whereas the dangers for certain species call for urgent measures; however the Protocol constitutes the institutional and legal framework for any subsequent action to be taken.

For its part, the European Community has launched a Programme for the conservation of the monk seal, through the Royal Institute of Natural Sciences of Belgium (IRSNB) which works in close collaboration with the competent services of the Commission of the EEC. The European Programme brings together the Environment Minis-

tries of Greece, Italy and France, the Universities of Athens, Salonica and Munich, the Sea Mammal Research Unit of Cambridge (UK) and the Institute for the management of nature of the Netherlands. These various institutions reported on their respective activities during the expert consultation held last January.

Finally, the third aspect in the cooperative effort covers the various Non-Governmental Organizations which have spared no effort to make the public aware of the problem of the survival of the monk seal. Such examples come from Germany (Society for protection of marine mammals), Switzerland (World Wildlife Fund) and Spain where recently a Fund for the protection of the Mediterranean monk seal was created. This fund aims at launching a large campaign for the collection of funds; it also plans to extend its activities to cover Morocco and Algeria where large colonies of monk seals are still extant.

400 to 600 survivors

The situation of the monk seal in the Mediterranean is alarming, since all reports that have come out in the last several years show a regular reduction in the numbers of this species. For example, the monk seal has practically disappeared in Spain where only a few errant individuals are sighted occasionally. As for Italy, only in Sardinia does the species survive (5 individuals sighted in 1987). The IUCN/UNEP meeting had formed a working group to put a figure on the current population. According to the report of this working group, there are probably at this time 400 to 600 individual monk seals, 50 to 100 in the Western Mediterranean and 200 to 500 in the Eastern Mediterranean. To explain this lack of certainty, the group stated: "These are not accurate figures but are based on the lowest and highest values reported from each country. The reliability of these results varies greatly: Some are purely anecdotal, others are based on direct observat-

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ions". For comparison, let us mention that the monk seal population in the Atlantic (the coast of Mauritania, Morocco and of the Portuguese island of Madeira) is assumed to be between 200 and 400 individuals.

Studies carried out in Greece have shown considerable variations in the numbers of individuals in the same area, depending on both the season and animal behaviour. Thus it is obviously difficult to give an exact number of the monk seals in the Mediterranean. This will only be possible when census taking activities can be carried out throughout the year, without however disturbing the populations observed: one could for instance install automatic "camera traps", thus avoiding direct intervention by observers.

For a peaceful coexistence of fishermen and seals

Why does the number of seals decrease in such an alarming way? It is a valid assumption that the phenomenon is linked to various human activities: fishermen killing seals, seals being entangled in the nets, tourists flocking to the seals' biotopes and more generally the effects of chemical pollution on the marine environment (floating plastics, dumped harmful substances etc.) For the time being, the major concern of conservationists is to defend the threatened species against the behaviour of fishermen. The problem is delicate, given that here too, as in other cases, there is a conflict between a profession anxious to safeguard its economic interests and an animal population which illustrates the ecological heritage of the whole region. This conflict is fed by a competitive attitude: fishermen kill the monk seals because they believe that the latter eat the fish and thus damage their production. Scientists are divided on this issue; some believe that the species of fish that the seals eat are not the commercial species that fishermen catch. While awaiting the outcome of the studies on the feeding habits of the monk seal which would clarify the question, it is indispensable to carry out, without delay, (as stipulated in the IUCN/UNEP Action Plan) "an urgent information campaign among fishermen in all areas where the seal occurs in order to neutralize their antagonism to the monk seal and win their support for protective measures".

In order that such a campaign be effective and not coercive, it must be accompanied by measures for the local communities of fishermen: improved nets that the seals cannot damage, or be entangled in, additional installations and opportunities for fishing, tax rebates etc. The point is not to dissuade fishermen through repressive legislation but to explain to the professionals involved that their foremost interest lies in preserving the wealth and variety of the Mediterranean flora and fauna. In a word, to win the monk seal battle by winning the support and trust of fishermen, tourist agents and local populations.

Creation of marine reserves

MEDWAVES has already drawn the portrait of the monk seal in its special issue on the protected areas and the species threatened with extinction (No 8, 1/1987). Suffice it here to point out

that the most considerable colonies of the monk seal in the region are located in the Eastern Mediterranean (Greece, Turkey). The Action Plan provides for the drawing up of a list of caves around the Mediterranean, in order to identify the breeding sites and include them in a network of protected areas. This activity has already started in Sardinia (Gulf of Orosei), in Tunisia (Galite) and in Greece where the marine park in the Northern Sporades Islands shelters 30 to 40 monk seals and will in the future be fitted with a complete research station with two basins for taking care of sick animals. According to the Action Plan, these monk seal reserves will naturally include both the caves which serve as habitats and breeding sites for the animals, but also 40 km marine "buffer areas". This re-

presents the distance that seals travel in order to feed. In these areas, commercial fishing activities would be regulated, monitored, if not altogether banned; the same would hold for tourist access so that the animals would not be disturbed during the period of breeding and caring for the young.

Conservation alternatives

According to the Action Plan adopted in the expert consultation in Athens "scientific opinion is divided as to what is appropriate or unwise. Some possible actions are controversial and may involve some risk to the seals involved. The species is known to be sensitive, and its reactions to close observation or capture are uncertain". The French delegate, when presenting the activities of his country described the breeding programme for monk seals undertaken in the national park of Port Cros with seals captured in Morocco and bred in captivity; the final goal is to reintroduce them in the natural environment of their country of origin. The expert consultation agreed however, that, before deciding on the advantages of the various protection activities, it is necessary to collect more data on certain aspects of the life and breeding habits of the monk seal: seal movements, biology, feeding habits etc. The meeting concluded its report by stating that: "if it proves to be necessary for the survival of the species, young seals from healthy colonies, and possibly isolated seals under threat should be transferred to build up well protected breeding colonies. Grouping undersized colonies together may also need to be considered".

A Mediterranean Strategy

In order that the Action Plan be implemented in a reasonable time frame, good co-ordination and adequate financing should be secured. On the first point, the solution proposed at the end of the Plan has the Co-ordinating Unit at Athens undertaking the main responsibility for co-ordination: data collection, establishment of an information network, creation of Specially Protected Areas for monk seals, promotion of regional research projects on the species. As concerns financial support, various additional sources will be needed beyond direct government support and support from the Mediterranean Trust Fund. Individual donors and NGOs could provide invaluable support to the whole operation. Already, the Scientific and Technical Committee recently created by the Contracting Parties to the Barcelona Convention examined the Action Plan for the monk seal adopted by the expert consultation and "took note with interest". The plan itself recommends that the status of the monk seal and the content of the management programme be assessed every two years by a regional expert meeting and that the report of the latter be submitted to the Meeting of the Contracting Parties for their approval. In the light of the latest developments and the interventions already launched in several Mediterranean coastal States, it is safe to assume that in the next expert consultation a reversal in the reduction trend in the numbers of the monk seal population in the region will be registered. One of the many bets entered into by MAP looks as if it is going to be won.

THE MONK SEAL: A CONCERN FOR THE COUNTRIES

"The idea of launching the Fund for the Seal in the Mediterranean followed the great success of similar initiatives undertaken in Spain in relation with other endangered species, and it received the economic support of over 10,000 people from all over the country".

(Fund for the Mediterranean Seal, Palma de Majorca, Spain)

"In Italy, the Institute Tethys was contracted by the Ministry for the Environment to collect information on monk seal sightings, strandings and captures and to conduct an information campaign among schoolchildren in Sardinia which will take place in the first half of 1988. Tethys is currently raising funds for an awareness campaign among local communities in Sardinia to take place at the peak of the tourist season and for organizing an emergency rescue system for orphaned and wounded seals in Sardinia".

(Institute Tethys, Milan, Italy)

"We talk to the fishermen honestly, indicating that our aim is absolutely not their isolation but their integrated role in the broader ecosystem through a variety of appropriate and fair activities".

(Statement of the officer responsible for the relevant Programme of the Ministry of the Environment of Greece)

The Unit has developed a relatively cheap "camera trap". If these traps are properly deployed they can provide information to estimate the rise of local populations and the amount of interchange between neighbouring populations".

(Sea Mammal Research Unit, London, UK)

FROM 4 TO 10 JULY

THE MEDITERRANEAN CELEBRATES THIS YEAR ITS FIRST ENVIRONMENT WEEK

During their Fourth Ordinary Meeting in Genoa in 1985, the Contracting Parties in their Declaration on the second Mediterranean Decade "invited the Governments to proclaim an annual Mediterranean Environment Week to serve as the rallying point for local, national and regional initiatives for its protection". On 18 February 1988, the Bureau of the Contracting Parties meeting in Athens decided that the Mediterranean Environment Week would for 1988 be celebrated between 4 and 10 July. On this occasion, the Bureau invited the Governments of the coastal States to take advantage of the experience acquired within the framework of the European Year of the Environment and use the audiovisual material already available at the Athens Unit (brochures, posters etc.). Because this year there was insufficient time to allow for a concerted effort by all Governments to celebrate this Environment Week, each country will organize activities within the framework it deems most suitable to raise the public's awareness. Malta for instance will host MAP's tra-

velling exhibit; in Cyprus the members of the diplomatic corps will be invited to the Lara reserve to see for themselves the success of the operation for the protection of the sea turtle.

However, starting in 1989, the Mediterranean Environment Week will become a collective effort; the coastal States have therefore been invited to submit proposals in that direction. The object is obviously to make as great an impact on the public in each country as possible and to put emphasis on their common heritage. Greece and France have already formulated proposals. Greece suggests that a Steering Committee be created (one member per country) to co-ordinate a Mediterranean media campaign with the support of personalities and concerned organizations. School children and youth organizations would be the first groups targeted; their active participation would be sought for the preparation and implementation of the various activities within the framework of the Mediterranean Environment Week.

France proposes to extend the "Blue Flag" operation already launched in several countries under the auspices of the Foundation for Environmental Education in Europe: each beach, port or boat receives a "blue flag" after it has signed a chart, a solemn undertaking and adhered to very precise criteria for the protection of the environment. In other words, the operation aims at making known to the public and especially to summer vacationers those towns that can demonstrate that they have taken or are taking exemplary action to preserve their environment, the quality of bathing waters, the reception of tourists, the esthetic value of the landscape and the quality of life. Such actions would - in the framework of the Mediterranean Environment Week - be assessed by national selection committees and the prizes (the Blue Flag, that is) would be awarded by MAP. This action would, in the opinion of its promoters, create a beneficial spirit of competition among Mediterranean sea resorts.

THE 1988 RECIPIENTS OF UNEP'S GLOBAL 500 AWARD HAVE JUST BEEN SELECTED

In our last issue we had presented the 8 Mediterranean personalities and organizations, recipients of UNEP's Global 500 award given for the first time in 1987. This award was created by UNEP in 1987 and between now and 1991 will have been given to 500 persons for their contribution in the protection of the environment. On June 4th, the eve of the International Environment Day, UNEP disclosed the names of the 1988 winners. Among the 94 persons and organizations selected, 13 come from Mediterranean countries. In the spirit of UNEP's Global 500 award, recipients include famous personalities and "anonymous" citizens who rightly become known thanks to UNEP's initiative. Here are the names of those honouring our region this year:

MICHEL BATISSE: Consultant to the French government and UNESCO in environmental matters; he contributed to the formulation of international programmes, such as the Mediterranean Action Plan, Man and Biosphere and the Project on Arid Lands. He has published many articles on world ecosystems.

JACQUES YVES COUSTEAU: Well-known to the general public through his books, lectures and films, Commander Cousteau is an indefatigable explorer of the sea bed and the inventor of an autonomous diver's suit. He has directed several oceanographic cruises of *Calypso*.

ANDREAS DEMETROPOULOS: He has led many intensive campaigns which resulted in the

creation in 1986 of the first national park in the Akamas peninsula and in the protection of the threatened species of the sea turtle.

OLFAT DESSOUKY ELSEBAIE: An Egyptian who since 1973 has carried out research in the fields of water quality, environmental health, solid waste management and village sanitation. Her recommendations led to the taking of concrete measures for the supply of drinking water. She has also created TV programmes on public health and the environment.

FRANJO GASPARIVIC: An engineer who co-ordinated the project on the Adriatic coast between 1967 and 1978. He contributed to the establishment and promotion of MAP as well as to environmental management and urban development at international level.

PIERRE MALYCHEF: A pharmacist and ecologist from Lebanon who established the properties of rare medical plants and who worked intensively in the fields of pollution control and reforestation. He is also a specialist in the genetic engineering of high yield wheat varieties.

ABDEL WAHAB MARAKCHI: Being the field agent of the Agriculture Ministry of Tunisia, he has made an important practical contribution to the stabilization of sand dunes, the improvement of pastureland and the anti-erosion schemes in several arid regions of Tunisia.

MARE VIVO: This Italian Non-Governmental Organization is active in the field of combating

marine pollution. Through its campaign on floating plastics, *Mare Vivo* contributed to the good quality of coastal waters and made a large public aware of the problems of marine pollution.

VICTORIA SOTIRIADOU: active in research on the rehabilitation of urban centres and on the formulation of environmental policy in Greece. She has represented her country in international environmental organizations.

COLETTE SERRUYA: carried out research and monitoring of the waters of lake Kinnereth which supplies one third of the territory of Israel with fresh water. In 1979 she was awarded the Israeli environmental award for her contribution in fresh water management.

IRINA VASILEVNA SPINGUEL: a scientist who, since 1977, has carried out work on vegetation in the Egyptian desert and studies on the ecosystem of the islands of the first cataract in Aswan which led to the adoption in 1986 of legislation for their protection.

TURKISH ASSOCIATION ON NATURE CONSERVATION AND NATURAL RESOURCES: a Non-Governmental Organization which strives to raise the awareness of the public in reforestation projects and anti-industrial pollution schemes.

NICOLAS ZALAORAS: a well-known Greek journalist, author of several articles on environmental matters, such as acid rain, pollution and species threatened with extinction.

KASTELA BAY, YUGOSLAVIA: A GOOD EXAMPLE OF CO-OPERATION BETWEEN THE PRIORITY ACTIONS PROGRAMME AND NATIONAL AUTHORITIES

The project, which was just launched and concerns Kastela Bay on the Dalmatian Coast, came out of the convergence of two parallel concerns: on the one hand that of the Yugoslav authorities, which were aware of the alarming state of pollution on certain segments of their coast, and on the other, that of UNEP and other international organizations which aim at ensuring the type of land development in the coastal areas that makes respect for the environment a priority.

At the suggestion of interested Contracting Parties to the Barcelona Convention, PAP has taken an active part (together with other MAP components and with relevant national and international institutions) in solving particular problems in environmentally imperilled zones.

This action is integrated in the working plan of the PAP which was approved, along with the corresponding funds, for the 1988-1989 biennium. Some funds from the 1988 budget have been allocated to the implementation of various national pilot projects within the framework of the priority action "Integrated Planning and Management of the Mediterranean coastal zones".

The Yugoslav initiatives

Since Yugoslavia hosts at Split the Regional Activities Centre of PAP, it was only natural that the Kastela Bay, one of the "critical areas" of the Dalmatian coast, become very quickly a central focus for studies and the formulation of scenarios in the context mentioned above.

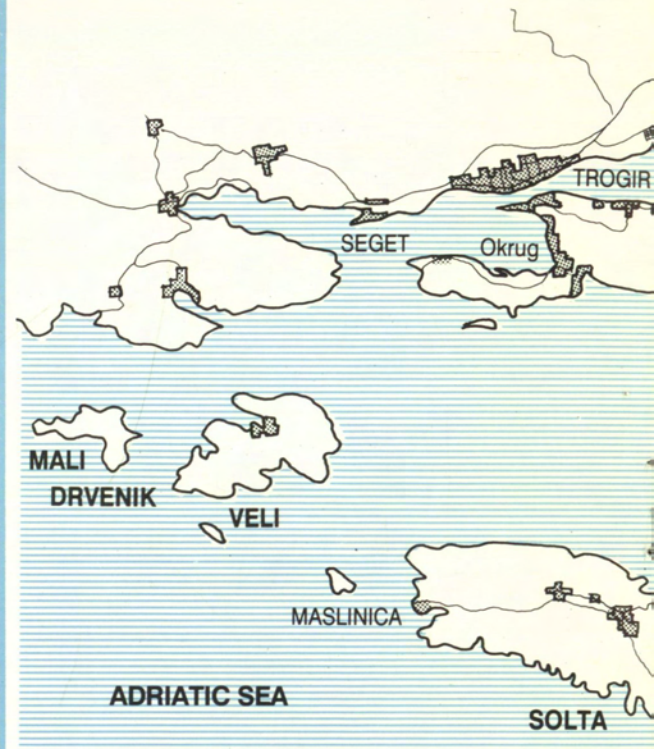
For many years, the Federal Authorities in Belgrade and the Authorities of the Republic of Croatia (to which the Split region belongs) have understood the problem presented by the Dalmatian coast which is not only one of the main centres of European and international tourism but one of the hubs of national economic development as well. The Authorities have allocated considerable funds for the improvement and protection of Kastela Bay. Together with the Municipality of Split, they have initiated the project "Management of Natural Resources of the Kastela Bay" with the main objective to produce an optimum development plan in accordance with the region's potentials and limits.

A common project

It is precisely this project that drew the attention of UNEP and WHO/EURO since it met both their thinking and their activities in the field.

A UNEP expert mission was sent to Split in order to learn more about the project, subsequently making proposals for its continuation. This was the beginning of collaboration, after which the Yugoslav authorities felt that their project would benefit from a new impulse with international technical and financial backing. They thus proposed that one part of the project be worked out through the co-operation between PAP/RAC and Yugoslav institutions. Following the necessary consultations, it was decided that co-operation would cover the activities contained in a draft sub-project bearing the title "Definition of criteria for the disposal of wastewaters in Kastela Bay". It should be pointed out that some of these activities involve MED POL in addition to WHO/EURO. Furthermore, it is envisaged that complementary external assistance, in the form of consultant missions, data base software support and the procuring of some vital equipment, would be sought. Deliberate and dynamic commitment of the country concerned, interest and support of qualified international organizations: these are the two poles that should in the future guide any action for the protection of a common heritage so as not "to insult the future".

As is stated in the draft sub-project issued by PAP/RAC in February 1988: "The Kastela Bay problem is a problem first and foremost for the city of Split; however Split cannot solve it by itself. It is a problem of a larger community and this was recognized by the Conference on the protection of the Adriatic Sea in the Resolution III that it is issued".



POLLUTION: A PRICE FOR VERY S AND FOR A TOURIST A

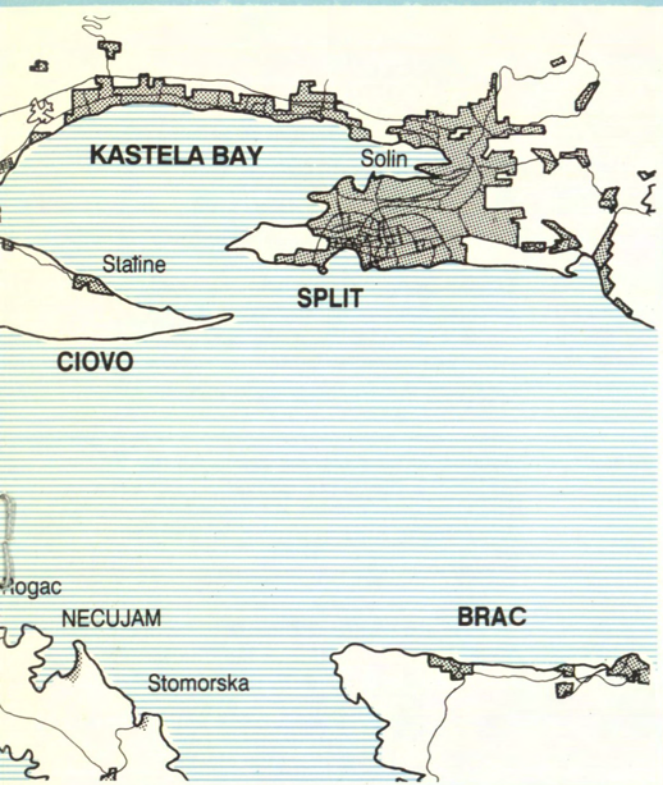
Kastela Bay, a tourist pole of the Central Dalmatian coast for many decades, at the centre of the large summer migratory flows, is both the beneficiary and the victim of the attraction of its natural beauty. The name Kastela is derived from the seven bathing resorts which along the coast form the Riviera of the Kastels (or castles), vestiges of mediaeval fortifications. To the NW lies the new Split airport. Just by looking at a map we can see immediately how complex the ecology of the bay is and thus how difficult its pollution problems. The bay is of the semi-enclosed type. The only communication with the Adriatic is a narrow channel separating the peninsula, on which the city of Split is built (240,000 inhabitants) - a city which is both an important port and the economic hub of the region - from the island of Ciovo which is adjacent to the continent and is linked with it by a mobile bridge. On the narrow coastal strip, to the back of which lies the mountain mass of Kozjak, are located many industrial plants, especially shipyards. Some figures illustrate the development of the area: In 1945 the population around

Priority given to public health

The definition of criteria, for the disposal of wastewater in a bay with such special characteristics as those of Kastela Bay, must of necessity be based on the following very precise questions: what are the wastewater quantities that can be released in the bay? Where and how can they be released if we are to take into consideration *inter alia* the various uses of the sea, all the sources of pollution which affect the water quality in the bay and the various alternatives for the development of the area?

Specifically, the research objective is to determine the required scientific information to be used as the basis for decision making with regard to the suitability of the environment for a desired use, recognizing the fact that public health is of primary interest and that it can be affected either directly or indirectly or both.

According to the defined criteria, the appropriate structural and non-structural control measures will be determined to ensure the planned quality of sea water with respect to the character of the eco-system, public health,



SPECIAL GEOGRAPHIC CONDITIONS AND ECONOMIC BOOM

the bay was 50,000, today it is 350,000. However, this number is practically doubled during the summer season; in 1987 565,000 overnight stays were recorded, 335,000 of these by foreign tourists. Over the years, the municipalities of Split, Trogir, Solin and the 7 Kastels have been facing problems which have been progressively more acute as concerns waste disposal and environmental management. The situation becomes even more complex when one takes into account the larger geographic context within which the bay is integrated. In effect, the bay is surrounded by an almost continuous string of islands - Mali Drvenik, Veli, Solta, Brač; these islands are the site of about 20 famous sea resorts which add, during peak periods, to the pollution of the Bay and form, vis-à-vis the continent, a second natural barrier which limits water exchange, so necessary for pollutant mixing and removal to the open sea. It is therefore obvious why the Yugoslav authorities have proposed Kastela Bay as a pilot area for the implementation of the PAP national project in Yugoslavia. This example of international co-operation should be useful to other Mediterranean countries.

living resources, aesthetic values and to planned sea uses (waste disposal, maritime traffic, leisure activities etc.).

In the view of these goals, one can state that the results of this project will be of practical use to other Mediterranean regions facing similar problems.

Project tasks

In order to meet the project objectives, ten different types of activities have been proposed, among which are the following:

- preparation of a critical review of all relevant literature and the collection of as much relevant information as possible;
- identification of physical, chemical and biological characteristics, including variability in space and time, which influence the desired use or property of the environment;
- identification of the critical factors on which particular water uses depend and determination of the relative importance of each;

- determination of the amount of stress being applied to the water mass to be protected for different disposal alternatives in order to define the magnitude of the problem;
- determination of the portions of the population that are subject to different degrees of risk in order to derive local standards and calculate rates of input;
- formulation of local effluent and stream standards for all inputs, point and diffuse, in order to define the necessary pre-treatment and the method of disposal of wastewater;
- determination of the complete monitoring of the environment which ensures the efficient control of sea water quality.

This project was proposed as the first and most important phase of the large project "Management of Natural Resources of the Kastela Bay" which is needed for the successful completion of the on-going activities, namely the preparation of the sewerage system sketch design for the Kastels, Solin and Split and the sewerage system proposal for the town of Trogir and the settlements of the Ciovo island. Therefore, the results of this project will be used immediately in implementing the measures for the improvement of the state of Kastela Bay.

A very precise timetable

For each of the proposed activities, a precise timetable has been established accompanied by a workplan, a description of the research methods to be used, the composition of the research team, along with the duration of the contract for each one of the members, the total fees to be paid and the expense of the implementation of the project. The ten tasks decided upon have been staggered over the two-year period that the total operation will last. The Split Water Authority, the Regional Water Authority of Dalmatia, scientific research funds and PAP/RAC will all share in the cost of the project. The local, municipal and communal institutions have taken various measures to check the damage to the ecosystem and to reduce possible environmental risks. However, all these efforts have been limited in scope and could not reach full effect. This on-going project brings about new perspectives for Kastela Bay which is going to develop all its potential, but within the framework of respect for its natural beauty to be put to best advantage.

Less than 18 months after the recommendation was adopted in Genoa,

A FLOATING RECEPTION FACILITY HAS STARTED OPERATION IN YUGOSLAVIA

In September 1985, at their 4th Ordinary meeting held in Genoa, the Contracting Parties to the Barcelona Convention had pointed out the need to equip Mediterranean ports with reception facilities for wastewater and oily residues from tankers and ships. This was one of the points included in the Genoa Declaration adopted on this occasion. This wish has just become reality with a floating reception facility in Rijeka, Yugoslavia, which started operation on 18 March. Rijeka is one of the main Yugoslavian ports situated on the NE coast of the Adriatic; it is an important centre of oil shipping and refining; shipyards are also located there. The unit itself is in fact an old oil tanker converted and fitted out for its new role in the shipyard of Rijeka. It will contribute to the improvement of the quality of the marine environment in the region, which is especially important given the fact that this part of the Adriatic coast is a high spot for tourists from many countries. The authorities of Rijeka would like to complete the functions of the system with equipment to fight accidental oil pollution.

The name of the converted tanker, ECOMAR, is indicative of the co-operation between the European Economic Community and the Yugoslav authorities to implement the project launched at the beginning of the European Year of the Environment and completed just before the Year ended.

The Rijeka port is not alone in taking advantage of the unit, since the Rijeka port authorities intend to offer its services to the Yugoslav ports of Koper and Zadar and later on to the port of Trieste through the "Associazione Regionale Interadria". Furthermore, the ports of Patras in Greece and Port-Said in Egypt are in the process of fitting out floating facilities which will become operational this year.

PAP ACTIVITIES

MEETINGS AND TRAINING COURSES HELD RECENTLY

Meeting on the scenarios in coastal zone planning, Sophia Antipolis, France, 7-8 January 1988

A meeting of experts convened in order to review the report on "Development of the Coast and Coastal Regions". This report is one of 18 specialized reports to supplement the main report of the Blue Plan on the Mediterranean scenarios. These reports will form a more thorough study of the various scenarios by subject matter and examine specific prospects for various economic sectors (analyzed in greater detail than was possible in the main report). They will also highlight the main geographical features of the area.

Meeting of the Bureau of the Contracting Parties to the Barcelona Convention, BUR 31, Athens, Greece, 18 February 1988

The first Bureau meeting in 1988 was held in Athens on February 18. It was chaired by the Minister for the Environment of Greece, Mr. Evangelos Kouloumbis; Mr. Y. Rodrigue (France) and Mr. Y. Balkas (Turkey) were vice-chairmen, Mr. Y. Elmehrik (Libya) rapporteur. The members of the Bureau examined the latest MAP developments since the meeting of the Contracting Parties in September 1987.

MEDIPOL 1988, ROCC premises, Manoel Island, Malta, 8-18 March 1988

In order to fulfil one of its main functions as expressed in Resolution 7 of the Barcelona Convention, ROCC has once again organized a general training course on marine pollution combating-MEDIPOL 88. The first course of this kind was held in Marseille, France in 1981 and since 1986 MEDIPOL has been organized at ROCC's premises on Manoel Island, Malta.

MEDIPOL 88, like previous MEDIPOLS is a general training course covering all aspects of prevention and combating of marine pollution by oil and other harmful substances. It is aimed at staff responsible for pollution related problems, as yet not possessing a general knowledge of the subject.

ROCC offered sponsorship, within its budgetary limits, to candidates from the Mediterranean coastal States nominated officially by their respective Focal Points.

The topics covered included an introduction to marine pollution by oil and

other harmful substances, international conventions and regulations, prevention, contingency planning, means of alert and surveillance, oil combating techniques and equipment, examples of past accidents, financial aspects and a case study.

In recent years, the EEC has sponsored candidates from European countries (Mediterranean or not) to participate in this training course. This has resulted in useful and wider exchange of experience, so vital for those working in this domain.

Meeting of the Working Group on the epidemiological study of the low-level, long-term effects on health of organophosphorus pesticides, Athens, Greece, 10-15 May 1988.

The Co-ordinating Unit at Athens hosted this meeting on the activities of a project by European Governments supported by UNDP, within the framework of the regional WHO/EURO programme on chemical products in collaboration with FAO, ILO, OECD, UNEP/IRPTC and the World Bank.

The working group assessed the final phase of the epidemiological study and developed a methodology for data processing and analysis. It defined the main axes of future activities for the participating countries.

The conclusion drawn at the meeting was that the prevention measures against pesticides must be strengthened. WHO is in the process of elaborating a proposal to be submitted to the participating Centre of Milan, the aim of which would be to create a body entrusted with helping the various countries develop their own protection measures.

MEETINGS AND COURSES SCHEDULED

Socio-Economic Committee Meeting, Athens, Greece, 27-29 September 1988

The first meeting of the newly established Socio-Economic Committee will take place in Athens from the 27th to the 29th September 1988. The Committee was established by a decision of the last meeting of the Contracting Parties (Athens, September 1987). The Committee will review the progress achieved in the framework of the Blue Plan and the Priority Action Programme, as well as the workplan and budgetary requirements for 1989.

Training Course on renewable sources of energy in the Mediterranean region, Almeria, Spain, 3-14 October 1988

A joint PAP/Spain training course on renewable sources of energy in the Mediterranean region will be held in Almeria, Spain, from the 3rd to the 14th of October 1988. This year the course will be given in English; a second course will be organized in 1989 and given in French.

Meeting of the Enlarged Bureau of the Contracting Parties to the Barcelona Convention, Athens, Greece, 1st and 2nd November 1988

In accordance with the decisions of the Fifth Ordinary Meeting of the Contracting Parties, the meeting of the Enlarged Bureau (open to all Contracting Parties) will be held in Athens on 1 and 2 November 1988. It will be preceded by an afternoon meeting on 31 October of the Restricted Bureau which will prepare the Enlarged Bureau meeting.

The main objectives of the Enlarged Bureau meeting are a) to analyze the Executive Director's proposals on the reorientation of the Mediterranean Action Plan and b) to carry out the apportionment of the 1989 MAP budget.



Mayor Dalan of Istanbul, a recipient of UNEP's Global 500 award in 1987, visited Athens in May at the invitation of its Mayor, Mr. Evert. He is seen here signing the visitors' book at an exhibition organized by the Association of Professional and Business Women on Mediterranean themes. The UNEP-MAP posters figured prominently at the exhibition.

The Technical Centre for Environmental Protection of the Libyan Arab Jamahiriya published in Arabic in April 1988 the first issue of its news bulletin. It deals with various national and international activities concerning the environment. The lead article of the issue is devoted to the World Health Day - 7 April.

Quaderni della rivista giuridica dell'ambiente (Environmental Law Review) publishes in its first issue the EEC directives on the environment along with the state of their implementation in Italy. The author, Antonella Capria, analyzes Community policy under the headings: Water, Waste, Air and Conclusions (the latter mainly dealing with the impact of the policy in Italy). The preface to this volume, which is in the format of a practical guidebook, is written by Nigel Haigh, director of the London Bureau of the Institute for European Environmental Policy. Mr. Haigh observes the following: "In countries with a federal or regional structure such as Italy, the problems are different from those in countries with a central governing system, such as France or the U.K."

"The State of the Environment, 1986" was published in English by the Ministry of the Environment of France in order to reach a large international scientific public. The report contains mainly statistical data on the basis of which a quantitative evaluation of the following areas can be made:

- Human activities and the environment
- Natural areas
- Physical environment
- Daily life
- Courses of action

"The Yugoslav-Italian Commission on the protection of the Adriatic Sea from pollution: annual report for 1987" (in Croatian). This annual report in 2 volumes (597 pages) contains the results and conclusions of two cruises carried out in the international waters of Northern Adriatic (21 stations, June and August 1987) and of Central Adriatic (8 stations, May and September 1987). A significant number of parameters covering the meteorological, physical, chemical and biological characteristics of marine ecosystems was measured in the water, biota and sediment. In addition, the activities carried out in 1987 included intercalibration exercises, the development of hydro-dynamic dispersion models and stepped-up development of the databank and of research in ecophysiology.

Assessment of the state of pollution of the Mediterranean Sea by Petroleum Hydrocarbons, MAP Technical Reports Series No 13, UNEP, Athens 1984 (130 pp.) (in English and French).

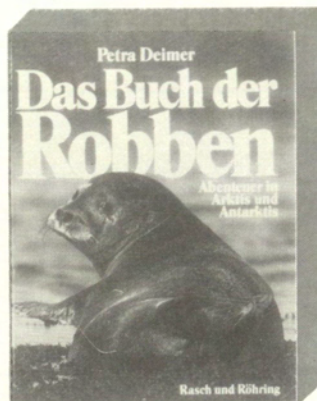
This volume of the MAP Technical Reports Series contains information on the present knowledge of the state of pollution of the Mediterranean Sea by petroleum hydrocarbons. The overall estimates of sources and inputs converge on a figure of 0.6 million tonnes of petroleum hydrocarbons per year introduced in the Mediterranean.

In order to gain uniformity in reported data on concentrations of hydrocarbons in sediment, biota and water, several intercalibration exercises have been carried out covering sampling and ana-

lytical techniques and advances within this field are clearly demonstrated.

The results show that concentrations of dissolved/dispersed hydrocarbons in water vary considerably through the entire area presumably because of the distribution of the various sources. Concentrations vary generally between $0 \mu\text{g l}^{-1}$ and $5 \mu\text{g l}^{-1}$, although a small number of values exceeds $10 \mu\text{g l}^{-1}$. The observations of tar in the period 1969-1985 in the Mediterranean Sea show mean concentrations of pelagic tar in the area of 0.6 to 130 mg m^{-2} and mean quantities of tar on beaches from 0.2 to 4388 g m^{-2} . Thus a considerable variation has been observed. However, measurements of pelagic and beach tar conducted after 1980 suggest a decrease in tar quantity within the last few years, especially in the Eastern Mediterranean.

"Newsletter Asia-Pacific". Published quarterly by the UNEP regional Bureau for Asia and the Pacific in Bangkok, Thailand, this newsletter regularly gives an updating of UNEP activities in that part of the world and provides a forum for an exchange of views and information on various environmental issues. The latest issue thus summarizes the various activities organized by PNEP, the Thai Foundation for the promotion of nature conservation and environmental protection. It also covers the problems concerning rehabilitation and cleaning-up efforts for the river waters in the Chinese historic city of Shaoxing: this long-term project has been undertaken by the national authorities with UNEP assistance. The newsletter also covers the various meetings convened in SE Asia, such as the WHO/UNEP workshop on noise reduction organized in Kuala Lumpur, Malaysia. Finally, there is an article on the dangers for human health from the mycotoxins originating in certain types of cultures. This article is a good example of the regional specificity of environmental problems.



The Basch and Röhring publishing house of Hamburg, Federal Republic of Germany, published in 1987 **"The Book of Seals"** by Petra Deimer, a manual which is essential to all those interested in the survival of the species. With beautiful illustrations, the book reviews the status of the seal around the world, especially in the Arctic and the Antarctic. The monk seal to which this issue of MEDWAVES is devoted is given its just place in the Deimer book. The author has since 1983 been the FRG expert on the protection of the European Seal, within the framework of the Berne Convention.

THE MAP CALENDAR OF MEETINGS

Consultation Meeting on Mediterranean health-related environmental quality criteria	12-16 Sept. Ljubljana
First Meeting of the Socio-Economic Committee	27-29 Sept. Athens
Practical training course on combating oil pollution (MEDEXPOL 88)	27 Sept. - 4 Oct. Ercolano Italy
Meeting of the Task Team on implications of climatic changes in the Mediterranean	3-7 Oct. Split
Training Course on renewable sources of energy in the Mediterranean region	3-14 Oct. Almeria Spain
IX ICSEM/IOC/UNEP Workshop on pollution of the Mediterranean Sea	17-19 Oct. Athens
Meeting of responsible officials from the 100 coastal historic sites	20-22 Oct. Marseille France
Meeting of expanded Bureau open to all Contracting Parties (Bureau 33)	1-2 Nov. Athens
Workshop on modern methods and techniques of geographical data collection and processing for integrated planning of Mediterranean coastal zones	14-18 Nov. Camargue France
Training course on management and maintenance of urban liquid waste treatment plants	Nov. Sophia Antipolis

MEDWAVES is published quarterly by the Co-ordinating Unit for the Mediterranean Action Plan in English and French. It is intended as an informal news bulletin and does not necessarily reflect the official view of MAP or of UNEP.

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A TRAINING CRUISE TOOK PLACE IN THE ALBORAN SEA BETWEEN THE 10th AND THE 17th OF MAY 1988

The Institute of Marine Sciences and Fisheries (ISPM) of Casablanca, Morocco, organized, under the auspices of UNEP (Long - term programme for pollution monitoring and research in the Mediterranean Sea (MEDPOL - Phase II), an international scientific cruise in the Alboran Sea, between the 10th and the 17th of May 1988. The first phase of the activities focussed on the field training of participants in the various sampling techniques; the second, which started after the cruise was completed, concentrated on the analyses in the laboratory of internal reference standard material for the following pollutants: heavy metals, petroleum hydrocarbons and chlorinated hydrocarbons. The results obtained after treating the reference samples in the Moroccan laboratory and the IAEA laboratory in Monaco will serve as reference values. Analysis of this material at regular intervals will ensure control of data quality for routine samples. To ensure the success of the operation, the Casablanca Institute kindly put at the disposal of the cruise its new oceanographic vessel, the "Charif al Idrissi", perfectly equipped for this type of mission, since it is fitted with equipment suitable for sampling at sea and navigation by satellite, the latter allowing it to receive and process pictures sent by satellites.

The scientific team on board the "Charif al Idrissi" was under the direction of Dr. Villeneuve, expert of the IAEA Laboratory in Monaco, assisted by Mr. Varela, Spanish specialist in data processing. The team included three Algerian and four Moroccan trainees.

Having left Casablanca, its port of anchor, the vessel cruised the Straits of Gibraltar to reach the Alboran Sea and carry out sampling at 5 stations along the Moroccan coast. The Alboran Sea, bordered to the North by the Southern Coast of Spain, to the South by the Moroccan coast and to the West by the Straits of Gibraltar which ensure communications with the Atlantic Ocean, is the Western-



most part of the Mediterranean; it is therefore of a special interest, since the values measured in its waters concerning the various physical, chemical and biological parameters make possible a comparison with the respective oceanic values. They illustrate the water exchanges, currents, species migrations and pollutant transfers between the Mediterranean and the Atlantic.

Sediment sampling

At the 5 stations used for sampling in the cruise, the team of scientists took sea water and sediment samples. This is an essential phase for the quality of the results; it is thus imperative to define *a priori* a "sampling strategy". The frequency of sampling and the geographic coverage (i.e. the "station grid") must meet very precise criteria. Moreover, any contamination of the samples by either the boat, or the sampling instruments or handling should at all costs be avoided, if we want to avoid errors in the results of the laboratory analysis. To ensure this, the "Charif al Idrissi" is equipped with a clean "hydrographic winch" (i.e.

free from grease) which is used to lower to the seabed, by means of a cable, a "tube corer", a long tube, that is, with a detachable lining to take out a "sediment core". The tube is fitted at the top with a weight which makes it go down by gravity; it is then hoisted aboard and the various samples are prepared for analysis. Sampling in the Alboran Sea was carried out at a 40 to 60 m depth. Other essential parameters, such as sea water temperature and salinity, were also measured. Furthermore, trawls and nets for plankton furnished biological samples.

Data quality assurance

When the instructors and trainees came back to the ISPM Laboratory in Casablanca, they processed the samples to prepare them for analysis; drying, grinding, shredding and homogenization operations were carried out. The phase which followed the sea cruise concerned data quality assurance which is one of the MED POL priorities. In other words, what this means is, in conformity with the latest recommendations of the Contracting Parties to the Barcelona Convention, to elaborate or, if need be, to amend reference methods, to set out standards and provide reference material, to organize expert visits to laboratories in the various countries aiming at promoting the collaboration with local scientists on sampling, analysis, control procedures and presentation and evaluation of results. Such was the mission of the IAEA expert after the completion of the cruise which he headed. Furthermore, he will make a second visit next September, in order to ensure the follow-up of the training course and concentrate more specifically on sample analysis procedures. In conclusion, this was considered a fruitful and promising cruise which identifies a new form of cooperation within the framework of the MEDPOL programme in the field of training in sampling and analytical techniques.

ECHOES OF MEDITERRANEAN ORGANIZATIONS

The Italian General Confederation of Trade Unions, CGIL, established, in July 1987, a Mediterranean Institute (Istituto per il Mediterraneo, c/o CGIL Corso d'Italia, 25, 00198 Roma). According to its statutes, the aim of the Institute is "to study the economic, social and political conditions of the countries of the Mediterranean region and problems of common interest". To reach its goals, the Institute would like to cooperate with similar institutions in other Mediterranean countries, since it believes that a common approach in the research phase is useful. We welcome the new institute and wish it success in its work.

The Federation of the Friends of the Earth, Spain, organized in Barcelona between the 28th and the 30th of April 1988 an international workshop on the protection of the Mediterranean with the support of both the local and



Slogan on the sticker issued by HELMEPA: "Let us all keep seas and beaches clean".

regional authorities. MAP was represented by its Co-ordinator and the directors of the Blue Plan and SPA/RAC who made presentations. There were also presentations on the protection of sea turtles in Cyprus and the state of health of the coasts in Andalusia and Catalonia.

The Hellenic Marine Environment Protection Association (HELMEPA) has issued posters and stickers to encourage paper collection and disposal of wastes by ships. The campaign is a significant contribution to making the seas cleaner in a country with a very extensive domestic maritime traffic, given the high number of islands with tourist and commercial trade. It should also be pointed out that HELMEPA was entrusted with the "Blue Flag" operation; it awarded the "Blue Flag" to 51 beaches and Marinas in Greece, the ceremony being attended by the President of the Parliament, ministers and EEC representatives.