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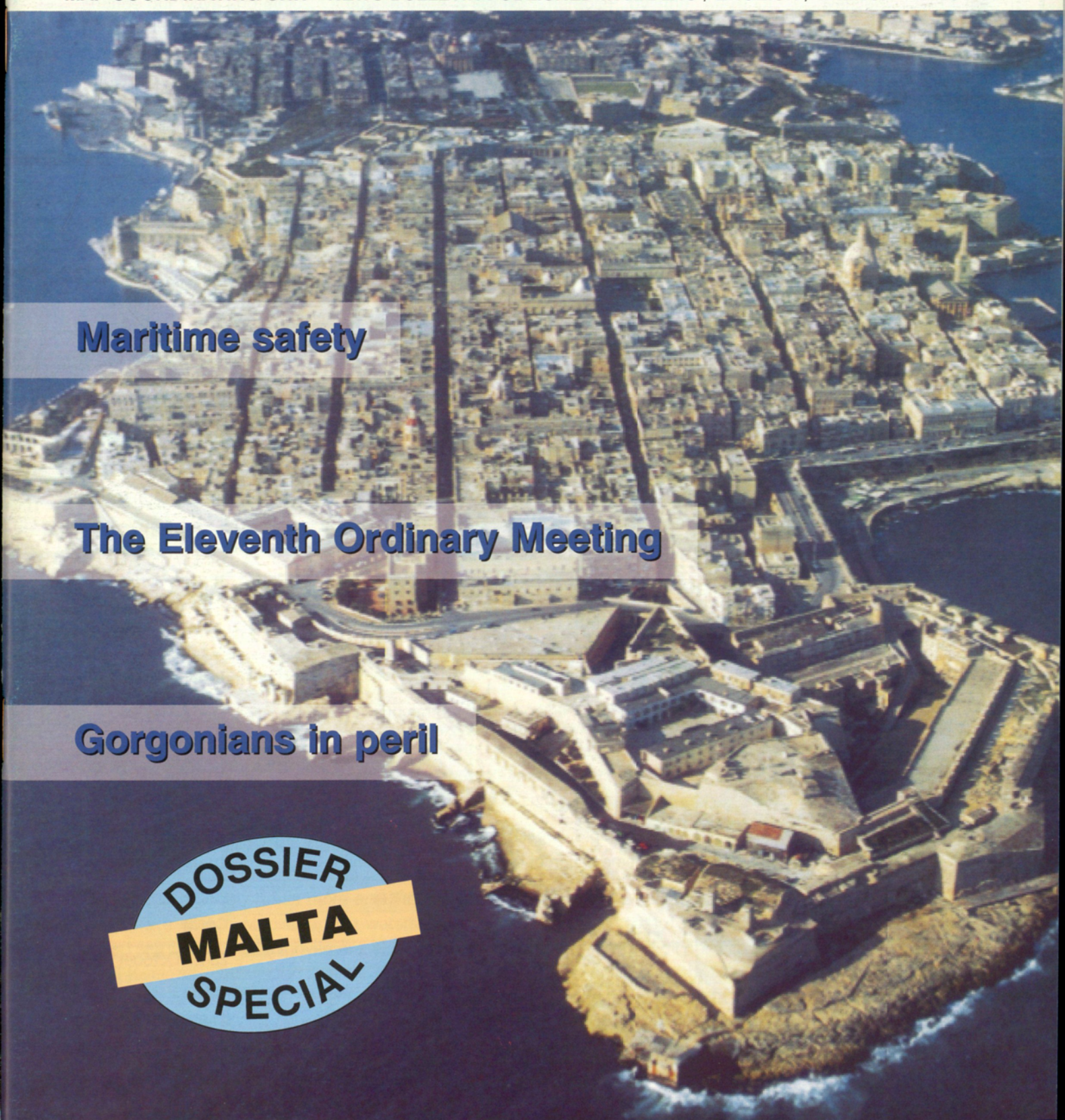
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The Eleventh Ordinary Meeting

Gorgonians in peril

**DOSSIER
MALTA
SPECIAL**



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WHAT IS MAP?

The Mediterranean Action Plan (MAP) is dedicated to the protection of the environment and the development of the Mediterranean Basin. It was adopted in Barcelona (Spain) in 1976 by the Mediterranean States and the EC, under the auspices of the United Nations Environment Programme (UNEP). Its legal framework is made up of the Barcelona Convention (1976, revised in 1995), and six Protocols on specific aspects of environmental protection. It is composed of a Coordinating Unit based in Athens, six Regional Activity Centres scattered throughout the Mediterranean, and a MED POL programme for monitoring and controlling pollution. The Mediterranean countries and the EU meet every two years to decide on MAP's budget and programme.

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P A M C A L E N D R A R

Experts Consultation Meeting to Update The Criteria for the Prioritisation of Pollution «hot spots» and sensitive Areas	21-22 March 2000 Athens, Greece
Workshop on the Development and Implementation of the National Contingency Plan	9-11 April 2000 Beirut
Capacity Building for Desertification/ Erosion Control Management in the Mediterranean Region	18-20 April 2000 Valletta
Final Presentation Conference on CAMP «Israel»	24 May 2000 Jerusalem
«Comité de pilotage» for the Strategic Review for the Year 2000 (MCSD)	11 -12 May 2000 Monaco
Meeting of the Bureau of the Contracting Parties	9 -10 May 2000 Malta
Workshop of Legal Experts on the Implementation of the Barcelona Convention	8-10 June 2000 Tunis
4th Meeting of the Steering Committee of the MCSD	22-23 June 2000 Corfu
Meeting of REMPEC Focal Points	23-27 October 2000 Malta
6th MCSD Meeting	21-25 November 2000 Tunis

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Valetta, Malta



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ERIKA, MARITIME SAFETY AND THE REVISION OF THE «EMERGENCY» PROTOCOL

The new millennium has arrived with a vengeance, with a dual warning of what it has in store for us in the non- too-distant future unless we radically change our ways and ethics. Of course there is still no proof that the «unusual storm»-to use the climatologists' parlance- which hit Western Europe between 21 and 24 December 1999, beginning with France whose forests and architectural heritage were seriously damaged, but also affecting the United Kingdom, Germany, Switzerland, Italy and Spain, can be put down to climate change and is one of the «extreme events» which the IPCC experts are predicting. But lack of scientific proof in this field can be no excuse for simply twiddling our thumbs. Research into climate change should continue and increase and, whilst awaiting the proof which will guide political choices we are bound by the precautionary principle to respect the minimum commitments entered into in Kyoto in order to control the greenhouse effect.

For the other event which occurred several days previously, however, there is no doubt as to the cause. The shipwreck off the coast of Brittany of the oil tanker Erika on 12 December 1999 and the spillage of heavy fuel which polluted the coastline, wiped out tens of thousands of seabirds and devastated the economy of a whole region was the result of a sequence of failures. Enquiries underway will establish the nature of these failures, and who was responsible. Twenty years after the Amoco Cadiz when the rallying cry was «never again!» the same causes have once again produced the self same effect and the proven facts at our disposal recreate the appalling reality: outdated vessels (57.3% of oil and gas tankers are more than 25 years old) still seaborne and carrying dangerous cargoes, inadequate control and inspection procedures, inefficient technical means of intervention for certain accident conditions, paucity of investment in the technologies which would make them more effective. And what of the Mediterranean in all of this? Although not directly affected, she is concerned in several respects. Given the ship's itinerary, a few hours more and the vessel's hull would have split in Mediterranean waters. As a quasi closed sea with little tidal movement, exposed to exceptional levels of oil transport (which, according to IMO data, accounts for around one fifth of world traffic for an area representing 0.7% of the world's oceans, or 280 million tonnes in 1999 for a world total of 1,403 million

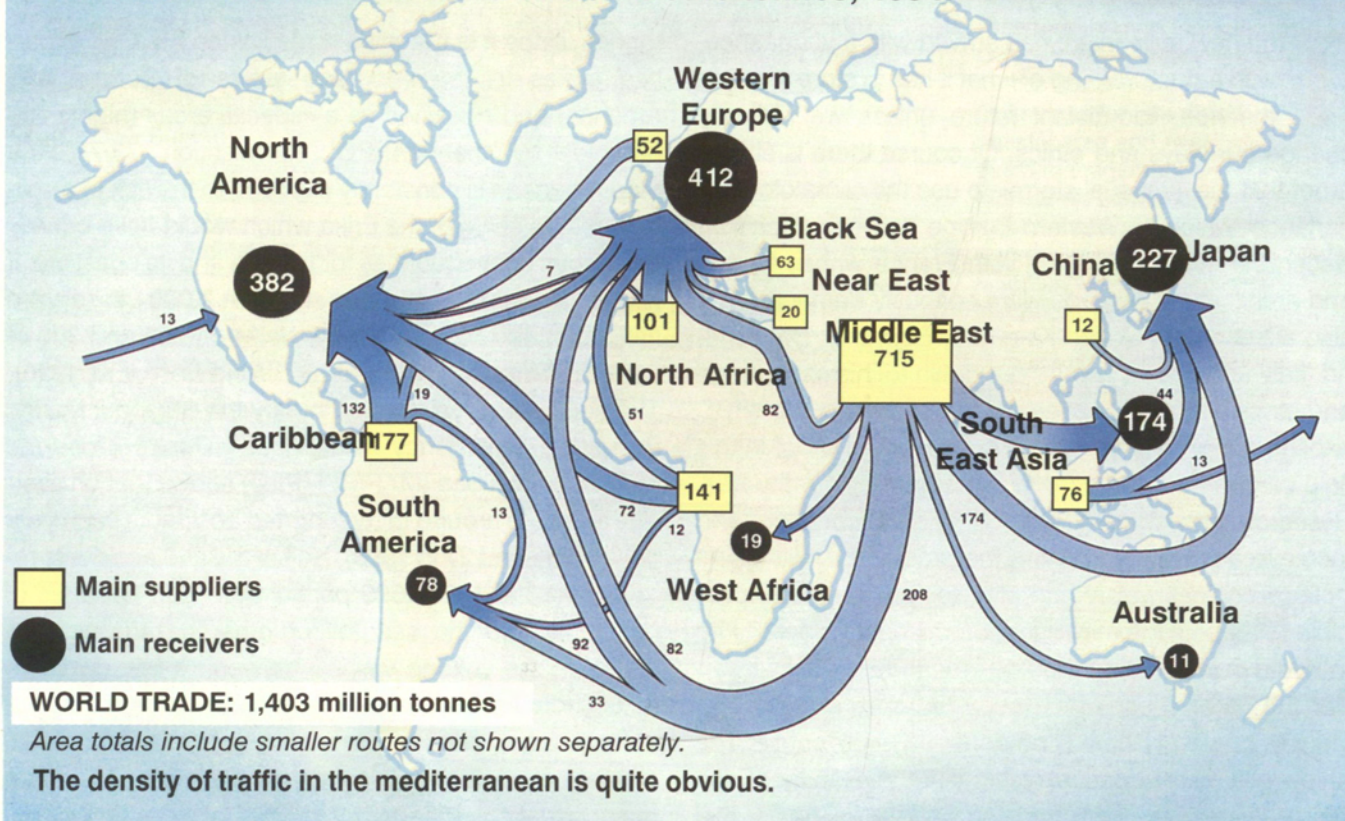
tonnes, since it is the main route linking the Gulf exporting states to the importing states of Europe and America) and classified as a «special area» (highly vulnerable) by the MARPOL Convention 73/78, the Mediterranean is constantly exposed to the risk of a spillage on the scale of the Erika which would have equally disastrous consequences for the sea and its coastline. It is estimated that at any one moment 2,000 vessels are navigating the Mediterranean, between 250 and 300 of them oil tankers (UNEP, 1989; World Bank/EIB 1990). The accident survey carried out by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (MAP/REMPEC) shows that on average there are around thirty reported accidents each year (24 in 1998 and 27 in 1999). Half of the 249 accidents reported for the 1990-1999 period were with spillages of pollutants into the sea (oil or other hazardous substances), the volume varying between a few dozen to 12,000 tonnes. In decreasing order the causes of the accidents were: fires/explosions, groundings, collisions, sinkings and other causes, and in each case there are major variations in terms of the size of the spillage, depending on the specific circumstances surrounding the accident- particularly the weather conditions.

The main shipping axis runs east to west and vice versa, past Sicily and Malta and along the coastline of the Maghreb, although there is also an important flow from North Africa to the northern, European banks. The areas most frequently affected by accidents and at major risk are the Straits of Gibraltar and Messina, the Suez Canal, the Sicilian Channel and the approaches to the Straits (Dardanelles/Sea of Marmara/Bosphorus), and several ports such as Genoa, Livorno, Venice, Trieste, Piraeus, Limassol, Larnaca, Beirut, and Alexandria. One bottleneck which has become a major concern over recent years is the 10 km long Straits of Bonifacio between Corsica and Sardinia, given the hazardous shipping conditions and an increase in traffic of at least 40% since 1985 (IMO, 1993), mainly made up of tankers transporting oil and hazardous chemicals.

Whilst it is the oil slicks which hit the headlines, there are other forms of oil pollution which in terms of annual volume spilled in the Mediterranean in particular, far exceed them, although it is difficult to attach any figure: although they are strictly forbidden, gas and ballast removal operations continue at sea in the absence of any

CRUDE OIL SEALBORNE TRADE

Main inter-area movements in million metric tonnes, 1994.



effective regional coastguard and aerial and satellite monitoring system, borne witness to by the lumps and blobs of tar which strew the coastline; leaks during port loading and unloading operations; diffuse pollution from non-oil vessels which run on heavy fuel, fuel oil, and lubricants spilt during minor but recurring incidents; and finally the insidious pollution from cabotage and pleasure cruising.

At their Eleventh Ordinary Meeting in Malta last October, the Contracting Parties to the Barcelona Convention agreed to complete their revision of the «Emergency» Protocol, which has been in force since 1978, and is the only one from the former Barcelona system not to have been updated. With a second meeting of the technical and legal experts planned for the year 2000, followed by a plenipotentiaries conference whose task it will be to adopt these amendments, this work, under the aegis of MAP and REMPEC in particular, has become more topical and pressing than ever in the present situation. The Malta meeting also mandated REMPEC to develop the programme for the implementation of port reception facilities which is eligible under the community MEDA instrument, and will provide all vessels- including oil tankers putting into Mediterranean ports- with the means

to dispose of their bilge waters and other oily waste. If all the major ports around the Mediterranean were equipped with adequate reception facilities, this would at least limit the problem of deballasting at sea, although it would not completely solve it (most tankers crossing the Mediterranean do not actually enter any of her ports). This new area of Mediterranean maritime law must be established on the basis of concertation and coordination at all levels of competence and responsibility, and updating the «Emergency» Protocol cannot but take advantage of the demand being made today for drastic reforms to be introduced without delay, starting with placing more responsibility on the shoulders of the main operators. Recent discussions within the national parliaments of several Mediterranean riparian states and in the European Parliament during its January 2000 session, and the meetings of charterers, shipowners and political leaders following the Erika shipwreck have shown that there is a broad consensus in support of reforming the law and increasing its effective enforcement in this crucial area. This is an opportunity not to be missed if we want to avoid a repeat of ecological disasters which have nothing to do with fate.

Medwaves

What exactly is an ordinary meeting of the Contracting Parties to the Barcelona Convention?

It may perhaps be useful to provide a brief explanation for those readers who are concerned about the future of the Mediterranean without being conversant with the terms used by the politicians, experts and scientists who have a direct part in the Mediterranean programme. The «ordinary meeting» is the highest decision taking body of the «Contracting Parties»- i.e. all the Mediterranean riparian states plus the EC, who have been «party» to the Barcelona Convention and its Protocols since 1976. At this meeting which is held every two years and- according to time-honoured practice- in a different Mediterranean country each time, the activities of the past exercise are reviewed, and MAP's programme and budget for the forthcoming biennium discussed. The ordinary meeting is held at ministerial level (ministers or heads of ministerial departments). The preparatory work is carried out by a meeting of the «focal points» (usually civil servants in the ministries who act as contact points between MAP and the governments), which takes place two to three months previously and deals with the technical aspects in order to «clear the way» for the politicians. For its part, the Secretariat of the Barcelona Convention which is provided by UNEP (United Nations' Environment Programme) and is made up of the Athens-based MAP Coordinating Unit and its Regional Activity Centres, draws up and presents a progress report centring on the items on the agenda, and which serves as the working document for the meeting. Apart from national delegations and the EC, the United Nations institutions as well as inter-governmental and non-governmental organisations (IGOs and NGOs) may also send observers (in Malta last October six United Nations institutions and 18 IGO/NGOs were represented on that basis). Observers take part in discussions on an equal footing with national delegates but they have no voting rights (which are only rarely used in any case, decisions being taken by consensus). This openness towards civil society which has increased over the last few years, is the most outstanding feature of Mediterranean cooperation. In 1996 it culminated in the setting up of the Mediterranean Commission for Sustainable Development, an advisory body to MAP in which local authorities, socio-economic players and NGOs are represented on an equal footing with the countries. At each ordinary meeting the Contracting Parties elect their new Bureau, which is made up of 6 Contracting Parties, and which is responsible for dealing with any matters which may arise between the ordinary meetings, and for issuing instructions to the Secretariat. At the close of each ordinary meeting the Parties adopt a meeting report (in English, Arabic, Spanish and French) which serves as the reference document and in a sense the Parties «official remit» for the activities to be carried out and the amounts spent over the following biennium, for the various components in the programme.

THE ELEVENTH ORDINARY MEETING OF THE CONTRACTING PARTIES IN MALTA (27-30 OCTOBER 1999)

The twenty riparian states and the European Community adopted their programme budget for the 2000-2001 biennium and approved a set of specific measures: more effective protection of threatened species and vulnerable habitats, moving into the operational phase of the Strategic Anti-pollution Actions Programme (SAP), revising the «Emergency» Protocol, admitting the new members to the MCSD, the MCSD's recommendations and programme of action, information strategy.

Calls to speed up ratification of the revised Barcelona system

This is currently the major legal problem facing MAP, since until the required number of ratifications has been reached neither the amendments introduced in 1995 nor the new Protocols adopted («Offshore» and «Hazardous Waste») can come into force, thus placing the new Barcelona system in a state of gridlock on certain points which represent major headway in international law: the precautionary principle, the «polluter pays» principle, strict controls on conformity with current legislation, use of clean technologies, rational coastal management. All delegates stated that they would like to see this come into force in the year 2000, but it is taking a long time for good intentions to become anything more (see table of ratifications by country, page 6). There is some good news, however: on 12 December 1999 (i.e. six weeks after the Malta meeting) the Protocol on Protected Areas and Biodiversity came into force (like any new instrument it only required six ratifications, as opposed to fifteen for the amended Convention and Protocols). Things can now start moving in this field at least (see page 18).

Information, Participation, Cooperation

Having adopted three new sets

of recommendations from the MCSD (see page 9), the meeting then approved the list of its new members as reviewed by the Bureau, representing the «local authorities» (4), «socio-economic actors» (3), and the NGOs (3), with three members having their mandate renewed.

Participants then turned to the MAP Information Strategy. They unanimously supported the initiative taken by MAP in this field, which should increase the programme's visibility and credibility vis a vis both players and public opinion. For this purpose the MED Unit would recruit an information officer by changing the status of an existing post.

Participants furthermore invited the Secretariat to strengthen its links with international conventions and organisations active in the region (WHO, IAEA, WMO, Ramsar, the Convention on desertification, etc.) within their spheres of competence, to prepare projects eligible for funding by the European Union (MEDA/SMAP), and to increase cooperation with MAP's NGO partners, giving priority to ones from the south and east.

Marine and coastal pollution

The Strategic Action Programme (SAP) which was adopted in 1997 is now moving into its operational phase, under the aegis of GEF/MED POL/MAP, and will be instrumental in ensuring that some of the new provisions in the ./..

WHAT IS THE STATE OF PLAY ON RATIFICATION OF THE BARCELONA CONVENTION, ITS AMENDED PROTOCOLS AND ITS NEW ONES?

Ratified:

- The amended Barcelona Convention (1995): **EEC, Croatia, Spain, Malta, Monaco, Tunisia**
- The amended «Dumping» Protocol (1995): **EEC, Croatia, Spain, Malta, Morocco, Monaco, Tunisia**
- The amended «L.B.S.» Protocol (1996): **Spain, Malta, Morocco, Monaco, Tunisia**
- The «Specially Protected Areas/Biodiversity» Protocol (completely new text from 1996 replacing the 1982 one): **EEC, Spain, Italy, Malta, Monaco, Tunisia** (came into force December 1999)
- The «Offshore» Protocol (new, 1994): **Morocco, Tunisia**
- The «Hazardous Waste» Protocol (new, 1996): **Malta, Morocco, Tunisia**
- The «Emergency» Protocol is currently undergoing revision and the amended version could be adopted by the end of the year.

Looking back to the 1976 Barcelona Convention and its first Protocols, on average it took 2-3 years from when they were adopted to when they came into force; it is now already 4-5 years since the revised or new instruments were adopted, and only the «Protected Areas» Protocol has come into force. There are many complicated reasons for this delay: the fact that the first instruments are already in force means that the amended instruments may not have the same urgency as existed back in 1976 when there was a total legal void; some countries were or are still going through a period of political change or uncertainty. Also, at international level, there is intense legal activity in the environmental field, with many new conventions on desertification, biodiversity, climate change, etc., which has given rise to a procedural «logjam» within national parliaments. On top of that, the number of Mediterranean countries has risen from 16 (in Barcelona in 1976) to 20 today (Albania joined MAP in 1988, and Bosnia and Herzegovina, Croatia and Slovenia came into being following the break-up of ex-Yugoslavia); and international experience has shown that the more countries there are, the longer it takes to ratify.

L.B.S. Protocol (regulating land-based polluting activity) are implemented even before they have actually come into force, since the SAP contains some specific country commitments which preempt many of these provisions. The SAP centres on pollutants requiring priority action, establishes the limits to be reached within a certain period of time, and encourages the construction of waste water treatment plants. The Global Environment Fund (GEF) contributes 6 million dollars to this programme (i.e. a sum which exceeds MAP's annual budget), and a further 1 million dollars come from the French GEF; these funds will initially be used for feasibility studies, followed by anti-pollution investment concerning the 109 «hot spots» (critical sites) which have been identified in the Mediterranean.

In order to adopt the amendmen-

ts to the «Emergency» Protocol, the topicality of which is highlighted by the events surrounding the shipwreck of the oil tanker «Erika» (see editorial, p. 3) it was decided that a meeting of plenipotentiaries should be convened, with the proviso that outside funding be found. The new text includes in particular provisions on pleasure cruising, a major source of pollution in the Mediterranean. Finally, in application of the «Dumping» Protocol (which governs the offshore dumping of substances), the meeting adopted some very strict guidelines on the «management of dredged material» (produced by a very common port activity). It also recommended initiatives for promoting «cleaner» industrial production techniques.

The protection of biodiversity

The last two years have been

marked by some major work undertaken by the Tunis Centre on protected areas and biodiversity. Firstly, the three action plans for the conservation of threatened Mediterranean species (sea turtles, the monk seal and cetaceans) were updated, and the action plan for the conservation of marine vegetation was drafted. In parallel, the Centre also developed a series of instruments with which countries can be assisted and guided in biodiversity management: reference classification for types of marine habitat in order to harmonise inventory listings, and standard data sheets for the national inventories of natural sites of conservation interest. These documents, the last of which will be finalised at a meeting to that end, are the foundations for any serious classification and inventory work, without which the protec-

tion of biodiversity is a non-starter.

Coastal management, integration of environment and development, backing for the MCSD

The Regional Centres for the Blue Plan (BP/RAC, Sophia-Antipolis), the Priority Actions Programme (PAP/RAC, Split), Remote Sensing (Palermo), and MED POL are working closely together on two types of project: the Coastal Areas Management Programmes (CAMPs), under which the whole of MAP's expertise is mobilised in order to assist a given country in planning and managing the development of all or part of its coastline, and the MCSD themes for which they provide fundamental technical support. Moreover, each Centre also does its own job within its own sphere of competence, through specific activities, workshops and training courses: integrated coastal zone management (ICZM) and its instruments for the PAP, systemic and prospective analysis, indicators and environment-development observatories for the BP, satellite information techniques for ERS, and extending their use. The Malta meeting thus adopted several recommendations to ensure a more systematic application of ICZM at national level, it confirmed that CAMPs were to be prepared and implemented in Algeria, Lebanon, Malta, Morocco and Slovenia (these are the so-called «3rd generation CAMPs»). Finally, the Secretariat was invited to prepare, submit to the EC and launch a regional coastal management programme under the MEDA financial instrument (Euro-Mediterranean partnership). ■

THE «INVENTORY» DRAWN UP BY THE RIPARIAN STATES IN MALTA

The Eleventh meeting of the Contracting Parties was held at St. Paul's Bay, Malta, from 27-30 October 1999. Representatives of the 20 riparian states and the European Community took part. Mrs. Faiza Kefi, the Minister for the Environment and Land Use Planning from Tunisia and President of the outgoing Bureau opened the meeting. She recalled her country's commitment in the Mediterranean to promoting the cause of sustainable development- particularly through the revision of MAP which was adopted in 1995, and the creation of the Mediterranean Commission for Sustainable Development in Rabat one year later- as well as the major projects which her government had launched in areas as varied as waste management, combating industrial pollution, and the protection of biodiversity. For his part, Mr. Francis Zammit Dimech, the Maltese Minister for the environment, welcomed all participants and stressed the «Euro-Med process» and the front seat role which the European Union now plays in the Mediterranean in the environmental field, by encouraging the networking of activities. As for Mr. Chabason, MAP Coordinator, he pointed out that the prospect of the Barcelona system coming into force would mean, for one, a tighter ban on dumping operations, the protection of the most threatened species and habitats, regulation of the transport of hazardous waste, and new rights on information and participation being granted to the public. Once it had elected its new Bureau (see box page 8) the meeting adopted its agenda and the Coordinator presented his activity report on the implementation of the Mediterranean Action Plan over the 1998-1999 biennium, focusing on

three main headings: main issues and problems, the responses applied, and the gaps still to be stopped. His report was followed by a series of general presentations on the environment and sustainable development in the Mediterranean, which made up the «ministerial part», and which took up the first two days of work. Delegates from the riparian states and the organisations present as observers took turns to introduce the work they had undertaken, the problems they had encountered, and their hopes of regional cooperation. Some general lines stand out from all of these presentations. Some participants (**Malta, Monaco, WWF, Med Forum, MIO-ECSDE**) appealed for speedier ratification of the Convention, with others (**Greece**) announcing that it was imminent in their country. The need for institutional strengthening was highlighted by many speakers, either by making reference to the recent improvement in water and waste management systems (**Libya, Algeria, Tunisia**), the problem of marine and coastal waste on the beaches (**Israel**), the increase in waste water treatment plants, (**Tunisia, Syria**), the planning and management of the coast and watersheds (**Slovenia, Croatia, Cyprus**) which could be covered by a trans-boundary style legal instrument (**Italy's** suggestion), a more effective intervention system for natural disasters (**France, Italy, and Turkey**- recently struck by a devastating earthquake), continuing illegal offshore dumping operations (**Syria**), the protection of biodiversity (**Greece, Tunisia, Monaco, Croatia**). Other countries spoke of the lack of available means (**Albania, Egypt**), the complexity of a given administrative set-up (**Bosnia and Herzegovina**), ./..

still inadequate maritime security (**Egypt**), the dioxin problem (**Greenpeace**) or the introduction of an eco-tax (**Friends of the Earth**). The European Community stressed the synergy between the Euro-Mediterranean partnership and MAP, a stronger public information and participation policy (a point echoed by the **Lebanon** and **EcoMediterrania**). The joint MAP-EEA (**European Environment Agency**) report on the state of the Mediterranean marine and coastal environment, a preliminary version of which was handed out at the meeting, stressed the pressure exerted by excessive and non-sustainable development of the coastline which is affecting the general adaptability of the Mediterranean sea. According to the EEA, it is not so much the sea as such which is posing the problem as the coastline which is doomed to uncontrolled and usually speculative development. Several countries pointed out how successful the tri-lateral sub-regional agreements to which they were party had been:



A house in Mdina, Malta

France/Italy/Monaco under the Ramoge agreement, **Italy/Slovenia-Croatia** for the protection of the Northern Adriatic, **Cyprus/Egypt/Israel** for a contingency plan for accidental marine pollution. **Morocco** felt that present day consumption and production trends made some countries richer and others poorer, and that free trade agreements should take account of environmental concerns. **Spain** recalled that the economic and environmental aspects of tourism should be reconciled, **Italy** that the United Nations' Convention on combating desertification contains an annex on the Mediterranean, and that the question applies to the whole basin, whilst **Algeria** expressed its concern at globalisation, the debt burden, and the constraints imposed by adjustment policies. Finally, the **Palestinian Authority's** request to participate in MAP's work was favourably received by all delegations. Following discussion of the recommendations and the adoption of the 2000-2001 programme budget, Mr. Jorge Illueca, Deputy Executive Director of UNEP, gave the closing speech on behalf of Mr. Töpfer, the Executive Director, in which he stressed the new life which was being breathed into the conventions and action plans for the regional seas adopted within UNEP, concluding with the following words: *«I believe that a mature and developed convention such as the Barcelona Convention can provide invaluable horizontal co-operation to less developed regional seas conventions and action plans in areas such as land-based sources of pollution, sustainable tourism, marine pollution control and sustainable development indicators»*. Following adoption of the meeting report the date was set for the Twelfth Ordinary Meeting, to be held towards the end of 2001 in Monaco. ■

THE NEW BUREAU OF THE CONTRACTING PARTIES, AS ELECTED IN MALTA

The new Bureau, unanimously elected in Malta, is made up as follows:

- President: **Francis Zammit Dimech**
(Malta)
- Vice-president: **Gabriel Gabrielides**
(Cyprus)
- Vice-president: **Pierre Roussel**
(France)
- Vice-president: **Valerio Cozalaio**
(Italy)
- Vice-president: **Abdul Hamid Al-Mounajed**
(Syria)
- Rapporteur: **Ashur Mohamed Emgeg**
(Libya)

It is to be noted that the only two island states in the Mediterranean, which are also candidates for accession to the European Union, have made their entry, which could provide the opportunity to tackle the singular nature of island development (as stipulated by the EU Amsterdam Treaty, amongst others). Speaking through Mr. Zammit Dimech, from the very start of the meeting Malta made clear its belief that the European Union is now playing a crucial role in regional co-operation, both by its presence in MAP (the Community has been a Contracting Party to the Barcelona Convention since it was adopted in 1976), and through the Euro-Mediterranean partnership, also launched in Barcelona in 1995, and that the two processes should be better linked and integrated. The Libyan Arab Jamahiriya is the only country to have had its mandate renewed, and will provide an element of continuity. The North-South balance is respected with France and Italy on the one side and Syria and Libya on the other, and with Malta and Cyprus acting as links between the two banks of the Mediterranean.

THE MCSD'S RECOMMENDATIONS AND PROPOSALS FOR ACTION AS ADOPTED IN MALTA: «INFORMATION AND PARTICIPATION», «INDICATORS FOR SUSTAINABLE DEVELOPMENT» AND «TOURISM».

Following the adoption in Tunis in 1997 of the recommendations on «water demand management» and «the sustainable management of coastal zones», the Contracting Parties had three new sets before them. Work has thus now been completed on five themes, and should be completed for a further three by the Twelfth meeting of the Parties in Monaco in 2001. Given the considerable amount of work which will have to be put in this year on preparing the Strategic Review for the Year 2000- which is due for submission to the 6th meeting of the MCSD in Tunis next November- the Parties felt that for the time being no new themes should be launched. They should rather take some time out to think carefully so that the new themes can be chosen on the basis of pre-feasibility/feasibility studies, most of which are to be carried out by the support Centres. In Malta, the meeting set up a working party on the MCSD's future work. The group's conclusions were adopted by the meeting and state amongst other things that:

«The Contracting Parties promise to take the necessary measures for the implementation and follow-up of the recommendations adopted; The Parties will endeavour to identify and involve other partners in the implementation of the MCSD's recommendations and proposals for action». Hereafter is a summary-obviously highly condensed- of these recommendations, which are the fruit of many hours of reflection, concertation and drafting in the thematic groups, centred around workshops and meetings held over 3 years, and which have been widely reported on by Medwaves (see in particular our last issue, no.39, pp. 3 and 4 on information, pp. 11 and 12 for the indicators, and no. 38, pp.8 and 9 on tourism). Let us just add that the recommendations are preceded by recitals or followed by explanations which stress the scale and importance of their effective implementation for the future of sustainable development in the region. It is up to all the players concerned to take due account of this as they define their environment-development policies and strategies.

Information, public awareness, environmental education and participation

Information: carry out a reliable cost assessment of the additional investment required in order to collect comparable, reliable information. Organise a two-yearly state-of-the-art exhibition to be held in each Mediterranean country in turn, in the language of that country.

Awareness: Organise a systematic opinion poll and statistically sound assessment of the points of view, perception, behaviour and aspirations of the Mediterranean public in the areas of environment and sustainable development; invite the Contracting Parties to develop and implement national strategies and action plans for awareness in cooperation with the NGOs.

Education: Strengthen the Mediterranean network of environmental educators, encourage the establishment of a Mediterranean register on audiovisual teaching materials.

Participation: Invite the Contracting Parties to select at least one pilot participatory and mobilisation project per country with the active involvement of the public.

Indicators

for sustainable development

- A first set (common core) of 130 basic indicators was selected by the Contracting Parties. MAP, the States and local authorities will endeavour to propose, test and record complementary pressure, state and response indicators.
- The indicators will be harmonised and disseminated in order to facilitate work at the national level.
- The Contracting Parties are invited to contribute effectively to the production and publication by MAP of a 5-yearly report on sustainable development in the Mediterranean. The first report shall be drawn up in the year 2002. It shall be based in particular on indicators for sustainable development, and will show the unity and diversity of situations in the region.
- States are invited to supply MAP with the national reports prepared for the United Nations Commission for Sustainable Development and to facilitate the comparative studies on Mediterranean issues undertaken by the Blue Plan.
- The Contracting Parties are invited to mobilise national statistical institutes for the gathering of data, and to instruct national environment and development laboratories to monitor and enhance indicators at the national level.

ering of data, and to instruct national environment and development laboratories to monitor and enhance indicators at the national level.

• MAP will follow up this work through the activities centres, and the MCSD will monitor the situation.

Tourism and sustainable development

• Anticipate and reduce the negative impact of development, urbanisation and tourist infrastructures: the Mediterranean states and local authorities are urged to acquire the instruments needed to evaluate the environmental impact of tourist programmes and large scale projects, to carry out evaluations of carrying capacity, to strengthen or establish legislative tools, regulations and property management leading to the control of tourist urbanisation and the protection of the most precious sites.

• Reduce the consumption of natural resources and the pollution caused by tourist accommodation and activities, and in particular develop all means that may lead to spreading the tourist season over the whole year, avoiding any additional negative impact on ecosystems.

• Control the development of tourist leisure activities affecting the marine and coastal environment (adoption of measures on pleasure boats, access to and use of beaches).

• Promote sustainable tourism as a factor in sustainable social, cultural and economic development, by developing national and local strategies aimed at better reconciling tourism, the environment and sustainable development, and in particular develop concertation between the authorities dealing with tourism, the environment and regional development, and the pertinent players.

• Promote the diversification of tourism and balanced regional development (emphasising cultural, ecological and rural tourism compatible with the environment, and highlighting our heritage).

• Develop Mediterranean cooperation, particularly through the implementation of a regional programme within the framework of the «sustainable management of coastal zones» part of the Euro-Mediterranean partnership, the promotion of eco-labels, the promotion of economic and financial tools for protecting and managing sites, and the organisation in the year 2002 of a regional symposium. ■

An interview with MR. F. ZAMMIT DIMECH, MALTESE MINISTER OF THE ENVIRONMENT AND PRESIDENT OF THE NEW BUREAU OF THE CONTRACTING PARTIES

In your opening speech at the XIth Ordinary Meeting of the Contracting Parties you said that the scope of this meeting should transcend its simple title, and you referred at length to the 1995 Barcelona agreement on the Euro-Med partnership. Do you think that MAP and the Euro-Med process, which you described as «converging processes», should be more highly integrated, and if so, how?

At present there is hardly any relationship at all between MAP and the Euro-Med process. I think co-operation between the two could start modestly and indeed minimally by agreement on the joint establishment of some pilot project, such as the Mediterranean Centre for Research and Development in Marine Industrial Technology (MEDITECH) proposed by the Government of Malta for the first time as far back as 1987, and supported by both UNEP and UNIDO.

This project is a form of private-public sector partnership (inspired by the EUREKA System set up by the European Union for Europe) in a form applicable to the Mediterranean. With Euro-Med support, it could now be best undertaken under the auspices of the Mediterranean Commission for Sustainable

Development. However, in my opinion, such a joint project should be regarded as only a first step in a gradual movement towards complete integration, since the purpose of the Commission for Sustainable Development is now hardly less comprehensive than that of the Euro-Med process and they match perfectly in purpose: «to enhance regional co-operation



and rationalize the intergovernmental decision-making capacity in the Mediterranean basin for the integration of environment and development issues» (MCSD mandate). Its composition constitutes the best agency through which the European Union could conceivably channel the funding which it has allocated to

network building across the Mediterranean.

Since Malta is taking over the presidency of the Bureau of the Contracting Parties for a two-year term at a time when she is also involved in pre-accession negotiations with the European Union, do you feel that you can play a facilitating role in getting the prospects of the Euro-Med partnership put to better use? You stated that the current system for allocating funds gave rise to difficulties in terms of judicious spending. Could you be more explicit on this point?

I expect that Malta will be able to play a much more effective role once accession to the European Union has been achieved. Nevertheless, we will obviously do all we can until then. When I referred to finding the most cost-effective ways of utilizing the funds allocated by the European Union to the Euro-Med partnership, I had in mind the use of MAP as an almost ideal channel either for specific projects or even as a way in which the allocations could be made in general, i.e. in the most democratically participatory way possible.

Both the Athens meeting of the focal points and the XIth Ordinary Meeting in Malta showed

that whilst they unanimously supported the setting up and the work of the Mediterranean Commission for Sustainable Development, the Mediterranean countries were more divided on how best to ensure the follow-up to its recommendations, on its range of themes and, in more general terms, on its place within MAP. As President of the Bureau, what line would you suggest to make the MCSD really effective?

There could be the danger that concern with the general development issues would push what appear to be purely environmental issues somewhat to the side, without perhaps any great success being even achieved on the development side itself due to inadequate funding. I really believe, however, in the concept of sustainable development - that is, that all development schemes have to be conditioned by environmental considerations and that the best protection of the environment can only be obtained through appropriately controlled development. The essential task facing us seems to be that of securing adequate resources for all aspects of our work.

Malta is one of the Mediterranean's two island states. As such it is aware of the problems and constraints caused by insularity, which are dealt with in the dossier which follows. What do you see as being the most

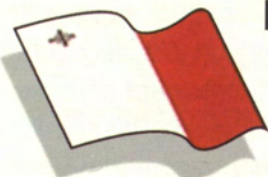
important of these problems? And what measures have been taken or are planned for in order to tackle them?

I believe that perhaps the best answer to your question is contained in the Valletta Declaration of the 27 November 1998, of which I am a signatory. A list of the special problems of Island States - if insularity is taken to refer not just to the communications dimension but to all aspects of Island Statehood - is given in Article 3 of the Declaration. It mainly includes the economic disadvantages of small size and the fragility of island eco systems in the face of such threats as natural disasters and global warming. I am afraid that specific measures taken so far have not been of any radical significance. Possibly the most important thrusts should be, firstly, the exploitation of the electronic revolution in the telecommunications sector (including the ways in which aviation and shipping are affected) through increased cooperation between Small Island Developing States (SIDS); and, secondly, joint marketing in the tourism sector, since the vagaries of this sector are a main factor of both economic and environmental vulnerability.

Let us stay with the question of insularity. It is covered in the treaties of the European Union - under the peripheral, isolated and island regions - but maybe not to the degree that some

would have wished. Given its central location in the Mediterranean and the prospect of its accession to the European Union doesn't Malta have an important role to play in bringing this problem and the consequent measures it demands of the EU and its various regional development programmes to the fore? More specifically, have you already taken, or are you planning to take any steps to raise awareness of the island issue amongst European leaders?

In the European Union context one of the most promising initiatives may be that of research intended to provide essential support for the development of Island Management Systems such as those referred to in several places in the Valletta Declaration. Such systems are obviously intended to take into account the fact that Island States are characterized by the special intensity of interactions and by the interdependent nature of the environmental and socio-cultural aspects of insular life. IMS is, of course, nothing but a special version of Integrated Resource Management (IRM). I am also confident that the European Union, only recently defined by its Commission President Romano Prodi during his visit to Malta as a «Union of Minorities», is a very capable institution for effectively addressing all peripheral issues by giving them the attention they deserve, not least on the basis of the principle of solidarity. ■



MALTA: A PROFILE

Location: at the heart of the Mediterranean, 96 km south of Sicily and 290 km north of the Libyan coast of Africa.

The State of Malta is made up of an archipelago of 5 islands, 3 of which are inhabited: the island of Malta itself, 246 km² with 137 km of coastline; the island of Gozo, 6.4 km to the north west, 68 km² and with 43 km of coastline (important tourist role) and, sandwiched between the two, the small island of Comino, 2.8 km², which basically receives holiday makers in high season.

Population: Malta accounts for 330,000 of the total 390,000 inhabitants- i.e. a density of around 1,200 inhabitants per km² (1,400 in Malta and 420 in Gozo, not counting the area of the tiny uninhabited islands). It has the highest density in the Mediterranean (Monaco being a case apart), which is only exceeded at world level by Singapore and Macao (before it was returned to China). According to estimates, this density swells to 3,655 during the summer with the tourists. 800,000 Maltese citizens live abroad, with an increasing number of them coming home in later life to their native isle.

Religion: Catholic (98% of the population).

Official Languages: English and Maltese (a Semitic language, influenced by Arabic and having absorbed many Sicilian, English and French words).

Status: Republic, member of the Commonwealth. Chamber of Representatives with 69 members elected for a 5 year term.

Economy: with a per capita GNP of 9,500 dollars, a number of visitors which rose from 12,500 in 1959 to 1,181,000 in 1998 (i.e. 100-fold, tourist earnings accounting for at least 20% of GNP), inflation at around 3% and unemployment at 3.3% (1995), the country's economic situation- as in the case of Cyprus- bodes well for accession to the European Union, which has officially accepted Malta's candidature. Pre-accession negotiations are underway.

Industries: textiles, footwear, plastics, shipyards, electronic components. 2,323 companies, 75% of them employing less than 5 people. Financial cen-

tre. Free port. Malta ranks 7th in the world (1997 figures) in terms of the tonnage of its merchant fleet.

History: B.C.: following a megalithic civilisation, Phoenician colony in 800, Carthaginian in 600, Roman in 218; A.D.: 1st Christians in Western Europe after the shipwreck of St. Paul off the island; Arab colony in 870, Sicilian in 1090. In 1518, Malta is ceded by Charles V to the Order of St. John of Jerusalem (driven out of Rhodes). 1565: Valletta besieged by the Ottoman fleet which lifts the siege after 5 months. 1798: en route for Egypt, Bonaparte forces the Order to cede its rights of sovereignty and ownership of the island to the French Republic. 1800: Malta comes under British sovereignty. After the First World War constant rumblings in favour of autonomy. During the Second World War Malta suffers heavy bombardment by the German and Italian airforces because of its shipyards and its strategic position in the Mediterranean. 1961: autonomy. 1964: Independence. 1970: association agreement with the EEC; 1979: evacuation of the British base. 1990: request for accession to the EEC. 1999: official acceptance by the EU of Malta's status as a candidate country for accession.

Sites: Two archaeological sites listed as World Heritage: the Hypogeum and the Neolithic temples: Tarxien, Hagar Qim, Mnajdra, the Ghar Dalam caves, the catacombs of Rabat; several magnificent XVIth century buildings in Valletta: St. John's Cathedral, the hospital and palace of the Grand Masters; historical village of Mdina, Gozo Citadel. ■





AN ISLAND IDENTITY UNDER THREAT

“Small islands, big problems”, was the slogan of the Barbados Conference (1994) on the development of Island States. The Maltese archipelago is a good example. Flying over Malta one gets an idea of the scale of urbanisation within such a limited area. In 1986 the built-up area accounted for 15% of Malta's surface area, and 10% on Gozo. Today it exceeds 20%. Pressures on natural resources and the environment are in line with the surface area and population figures just quoted in the preceding country profile, and Malta will have her work cut out to fall into line with the community “acquis” on this front.

The crucial question of water

Because of its geological make-up, its low relief (rising to a mere 253m) and its climate, Malta cannot bank either on constant surface water or on a regularly replenished water-table. The island is composed of a slab of porous limestone which was created from alluvial sediment and material from the skeletons of dead marine organisms- such as the globigerina which formed a layer at a depth of between 23 and 200m, giving the famous and very soft “Maltese stone” which has been used in most of the country's houses and buildings. Some of the quarries which are no longer productive have been landscaped, others have simply been abandoned and are a blot on the landscape. Waterproofing of the soil, particularly as a result of road building, has increased run-off, which carries soil particles to the sea, which in turn causes erosion and a lower rate of rainwater percolation. The groundwater runs off into the sea, either in diffuse form or through springs linked to the karstic layer. Average rainfall is 500mm with a

long dry season (May to October). The percentage of rainwater which is not lost either through run-off or evaporation is low; it is estimated that 15-25% seeps into the limestone layer and feeds the water-table. Natural water resources amount to 50m³ per inhabitant per year.

Thus water supply is a huge problem for Malta, as it has been for centuries. When they built Valletta, the Knights of the Order of St. John were careful to construct an adequate system for transporting water, which was completed in the mid XVIth century and was composed of aqueducts linked to springs and a large number of cisterns and reservoirs. But galloping urbanisation and the tourist boom of recent decades have increased pressure to breaking point. Pumping possibilities have been seriously limited as a result of saltwater seepage. Faced with tourists needs on top of domestic and agricultural requirements the authorities initially tried to reduce surface run-off by building dams to encourage seepage and the replenishment of the groundwater. Old cisterns were renovated, and new ones built on house rooftops. Reuse of wastewater was encouraged. But faced with ever-growing demand the authorities were forced to turn to the desalination of seawater, firstly by distillation. In 1981, the Maltese government signed a contract for the construction of the first reverse osmosis desalination unit in Ghar Lapsi. The process caught on. From 10 million m³/annum in 1986, production has now reached some 30 million m³, i.e. almost two thirds of the island's total consumption. Obviously the island pays a heavy price for its dependence on desalinated water- its water costs around 15 times more

than in the Northern countries.

The tourist challenge

Tourism has grown into a major economic activity, providing work for more than 10% of the active population, and generating one third of the island's hard currency revenue. For historical reasons it is highly dependent on the British mass market. So dependent, in fact, that in spite of the spectacular developments of the last two decades, there have been year-on-year fluctuations, with a 40% drop in the number of visitors between 1980 and 1984, for example. In the early 1990s the Maltese government therefore decided to improve the quality of what was on offer, to encourage the spread of the tourist season (“cultural winter tourism for senior citizens”) and to launch advertising campaigns in other countries. From 76% of visitors in 1980, the UK dropped to 40% in 1997, Germany taking second place with 18% and Italy in third place with 13%. Large stretches of the 200 km of coastline on the inhabited islands, which are almost entirely rocky- half of them are inaccessible- have been developed in order to provide small artificial beaches or swimming amenities, with a critical effect on the ecosystem. The few small natural sandy beaches have been washed away by erosion. Outside Valletta tourism is concentrated around the coasts which are being urbanised at a steady rate and utterly regardless of the age-old architectural traditions: Sliema, St.Paul's Bay, St. Julian's/Paceville, Buggiba/Quawra. 94% of tourist facilities are on the coast, 30% of which has been developed. The number of pleasure boats is on a constant upward trend, and some of the best known

bathing sites have become «unofficial marinas». One sector of the media and public opinion is even pushing for new areas of land to be reclaimed from the sea in order to expand national territory, which would further aggravate the negative effects of development. As Malta has a very valuable archaeological and historical heritage, many sites are over-visited, starting with the ones in Valletta and Mdina. Waste becomes a real problem during summer, when many unofficial dumps compete with the two official ones in Malta and Gozo. Amongst other things they receive the spoils from the building sector, to such a degree that the authorities are working on a "stone recycling" system. As for waste water, it is released into the sea through outfalls, in other words after simple primary treatment, causing health problems for the most popular bathing areas. Finally, the impact of tourism still has to be assessed on a host community which was ill-prepared for the socio-cultural shock which comes with such a major in-

«In Malta, tourism simply compounds an already difficult situation, one of the facets of which is political. Should Malta increase the number of seawater desalination plants which are expensive on fuel and which produce water of only average taste, or should she rather enter into agreements with the states on the northern rim to bring in water by tanker? Is it better to be dependent on fuel or on water imports? The problem here is one of foreign policy options for an entire state.»

Michel Sivignon, in «Water resources and tourism on Mediterranean islands», FIS, University of Malta, 1990.

flux, the equivalent of almost three times the resident population even though, in Malta's case, there is no major clash of habits and practices between the tourists and the locals.

Biodiversity in Malta

The Maltese islands are home to an exceptionally rich and varied collection of plants and animals, particularly considering the small area in which they live, the limited number of habitat types, and the strong pressures coming from man. 900 species of angiospermae or flowering plants can be found there. Apart from their local interest, certain elements of Maltese flora and fauna are very important at regional level:

- Numerous endemic species and subspecies of plants and animals have been described from these islands, and are of evolutionary and biogeographical interest;
- A number of endemic Maltese plants and animals (i.e. which are only found there) are relics from the pre-glacial age and have no close relatives anywhere else in the world;
- Numerous species of Maltese flora and fauna have a restricted Mediterranean distribution; some that are locally relatively common are threatened on a European scale;
- Some taxonomic groups with a restricted Mediterranean distribution were first described in Malta, which is their type locality;
- The tiny island of Filfla close to the south of the main island of Malta supports one of the largest known breeding colonies of the Storm Petrel (*Hydrobates pelagicus*), a web-footed seabird which skims the surface of the water when it flies, and which can barely walk;
- Situated between the northern and southern banks, and the western and eastern basins of the Mediterranean, the Maltese islands are at the meeting point of these four regions, particularly for migrating birds, and the marine biota of the islands is of great biogeographical interest.

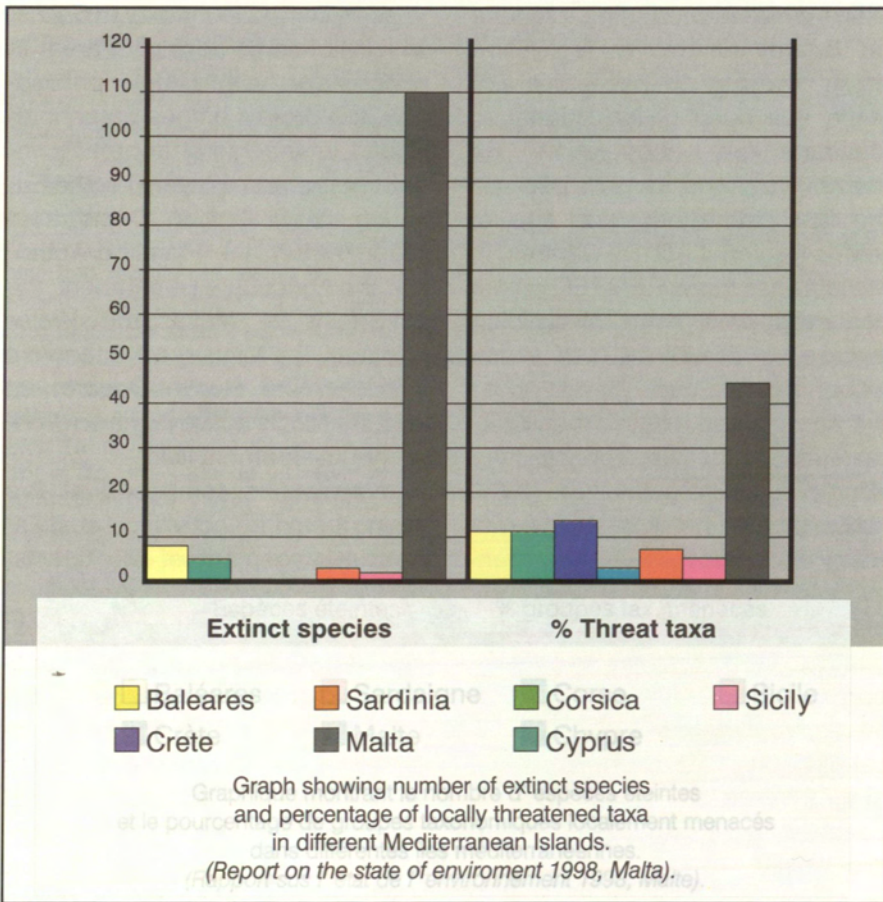
Obviously the Maltese flora and fauna have most in common with Sicilian ones, Sicily being the closest land mass, but they are not simply an appendage to them. For example, although the vast majority of Maltese vascular plants are also found in Sicily, and are endemic in the two areas, there are several which are only to be found in Malta, such as the Aleppo Spurge (*Euphorbia Aleppica*) or the olive-leaved bindweed (*Convolvulus oleifolius*).

An assessment of the conservation status of terrestrial, freshwater and marine species was made in 1989 in accordance with IUCN criteria, when the Red Data List for the Maltese Islands was prepared. It established that 103 species of magnoliophyta (flowering plants) had become extinct, 71 were endangered, 44 were vulnerable and 136 rare. Moreover, 163 species of coleoptera and 32 species of lepidoptera were in a precarious situation. Since 1989 there have been many changes. Knowledge of some groups has increased considerably, so that some new species need to be added to the Red List. In-depth exploration of the islands has led to the rediscovery of certain species believed to have been extinct for years. But the Maltese landscape has undergone radical change as a result of economic and demographic growth, and intensive urbanisation, and certain habitats have become rare. The Red List is therefore due for revision, which will require lengthy investigations. A case study carried out on the vascular plant group reveals certain major trends. There has been a sharp drop in the 900 known taxonomic groups which are considered to be indigenous or to have existed in Malta for centuries- which is a high figure compared with other regions of Europe and given the country's size- since

44% of the indigenous flora are rare, threatened or already extinct. This is the highest rate amongst Mediterranean islands. As the comparative table below illustrates, the

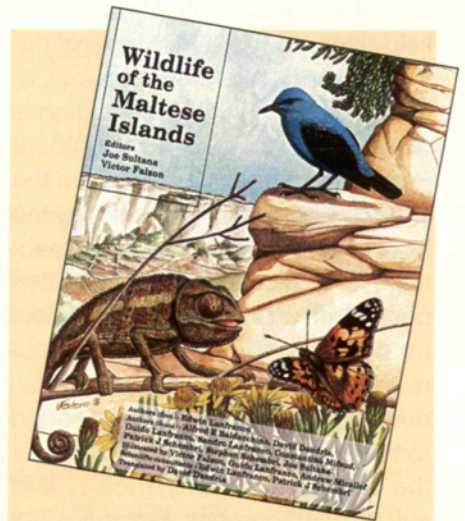
A concerted effort towards rehabilitation, planning and information

The environmental degradation which is evident in Malta is more or



Maltese islands have the highest number of extinct species (109 taxonomic groups), second place being taken by the Balearic islands with a mere 8 groups. The picture is almost identical for the threatened taxonomic groups, with Corsica coming in second (12% as opposed to Malta's 44%). Rehabilitation of the Maltese environment and natural habitats, the refocusing of development on sustainability, and the inclusion of threatened species on the lists annexed to legislation and protection measures are therefore a priority for the protection of the tremendously rich biodiversity of these islands, and of the role of crossroads and meeting point which they play in the Mediterranean.

less the same as is to be found around a large proportion of the Mediterranean coast, only it is maybe more obvious here because of the small area involved. As in the Balearic islands and faced with the same threats not only to the environment and resources, but also to the country's cultural identity, both leaders and people alike have realised that a laissez-faire attitude would seriously undermine the future. A series of measures have therefore gradually been taken to more rationally organise development, to rehabilitate and protect the natural and historic sites, and to give a new direction to the country's tourist vocation. Malta is a signatory to most major international conventions in the environmental



Wildlife of the Maltese islands

This book, translated into English from the original Maltese «Flora u Fawna ta' Malta» which was originally published under the guidance of Joe Sultana and Victor Falzon as a contribution to the Council of Europe's «Year of Nature Conservation» in 1995, could have been included under our «Books-Reviews» heading in the place of honour, but in a sense it provides the counterpoint to the preceding brief overview of biodiversity in Malta. At the same time, it is also much more than a book, it is an act of faith, a political move towards biodiversity, an incentive to safeguard such wealth for future generations. Published under the aegis of the Environment Protection Department, it stops a gap in Malta's natural history. Its 336 pages cover more than 1,000 species of the archipelago's wild flora and fauna, it targets a wide audience but makes no concessions whatsoever to simplicity. Wonderfully illustrated by plates showing the major species, it is broken down into 3 parts: 1) the islands; 2) the plants; 3) the animals, and includes in its annex a glossary, a highly comprehensive bibliography, an index of English names and an index of the corresponding scientific names.

field (including the new texts of the Barcelona Convention and four of its Protocols). Maltese legislation is governed by the 1991 Environment Protection Act which lays down the main obligations. It is flanked by the forty or so regulations or implementing decrees which have also been passed in a great variety of fields, ranging from trade in fauna and flora, checks on outlet emissions, dumps and motor vehicles through to the enforcement of standards for the air, water quality, noise, and waste management. But the 1998 «Report on the State of the Environment» admits that effective implementation is still a pipedream in the absence of any inspectorate or a police force responsible for checks. In 1992, the Structure Plan and Development Planning Act added to and strengthened the battery by providing a long term strategy for land planning, economic and social policy. The governmental agency specifically responsible for implementing environmental policy is the Environment Protection Department, but the other governmental departments (fisheries, agriculture, health, etc.) also have environmental commitments under the 1991 Act. As this means that there are overlaps and some conflict of competence which hamper implementation, a revision of the institutional structure and legislation is in the pipeline for the environment and development field. At educational level, much effort has been put into the school environment since the mid 90s under the National Environmental Education Strategy (NEES). Another initiative, Dinja Wahda («One single World») which has public authority backing, has meant that one NGO- Birdlife- has been able to coordinate information campaigns in primary schools, and it is planned to extend this initiative to secondary schools and other sectors of the community.

The Coastal Areas Management Programme (CAMP) for Malta

In this context, apart from its imminent accession to the European Union which is prompting it to take on board community legislation whilst enjoying pre-accession aid, Malta has been giving priority to Mediterranean cooperation for many years, and in 1976 became the first country to host one of MAP's Regional Activity Centres. In Malta's case this is REMPEC, which deals with emergency intervention in cases of accidental marine pollution, and has been placed under the aegis of the IMO for the implementation of the «Emergency» and «Dumping» Protocols. In 1997, Malta signed an agreement with REMPEC to establish a contingency plan whilst awaiting the completion of its own national contingency plan. This is a particularly important issue for Malta seeing that the archipelago is situated at a critical junction of Mediterranean shipping channels, and is therefore constantly exposed to the risk of oil slicks which would have devastating consequences for her natural resources and economy. The Maltese government also turned to MAP in the field of planning and integrated coastal management, a field on which the island's viability hangs. In 1993, the Contracting Parties to the Barcelona Convention approved the launch of a CAMP for Malta. Preparatory activities got underway in 1996, and the relevant agreement was signed between the Permanent Secretary of the Ministry of the Environment and the Split-based

PAP/RAC in November 1999.

The CAMP focuses on sustainable development for Malta. It extends over an area of 117 km² in the north west of the island, stretching from Wied iz-Zurrieq to the bay of Salina, which will serve as a pilot area. In accordance with CAMP philosophy, the project hinges on an integrated inter-sectoral approach, involving the main players i.e. the Environment Protection Department (coordinator), the Planning Authority, the Agriculture Department, the University of Malta, the Water Services, the Ministry for Economic Services, the Health Department and the NGOs active in the environment-development field.

The project is composed of five main thematic activities: sustainable management of the coasts; marine protected areas; integrated management of water resources; management and control of erosion/desertification; tourism: the impact on health. Each activity is to be tackled by a team, where necessary with the assistance of an expert provided by MAP. The project will run for two and a half years; it kicked off in February 2000 with an opening workshop for team members, and is due to finish in June 2002, with follow-up through until June 2004. The CAMP will help the Maltese authorities continue the efforts which they have been putting in for some years in order to rechannel the development of their island towards sustainability, drawing on the expertise of all MAP's Regional Activity Centres, MED POL/WHO, and probably also FAO (on erosion/desertification). ■

References used: *Blue Plan fascicules on tourism and water, State of the World 2000, Quid 2000. For further information consult the Maltese Environment Protection Department's website, [www:environment.gov.mt](http://www.environment.gov.mt), which provides a wealth of documentation from which most of the information in the preceding dossier is taken, particularly the «biodiversity» part and the two graphs- see report «State of the Environment» under the Publications/General Information section.*

The Meeting of the MCSD Steering Committee

(Tunis, 20 and 21 January 2000)

Preparing the Strategic Review for the Year 2000

This meeting was opened and chaired by Mrs. Faiza Kefi, minister for the Environment and Land Use Planning for Tunisia, and President of the MCSD Steering Committee. Following in the immediate wake of Malta, the main purpose of the meeting was to look at preparation for the «Strategic Review for the Year 2000» as foreseen in the MCSD's mandate, and for which a steering committee was set up at the 6th MCSD meeting in Rome. Present at the meeting were: Mr. Bernard Fautrier, Minister Plenipotentiary, and Mr. Bernard Van Klaveren, technical adviser, for Monaco; Mr. George Giourgias for the Group of Chambers of Commerce for the Development of the Greek Islands (EOAEN); Mrs. Kumru Adanali for Turkey, Mr. Franco la Torre for the City of Rome; and Mr. Paolo Guglielmi for the WWF. Mr. Arab Hoballah, Deputy MAP Coordinator, presented a set of 5 documents drawn up by the Secretariat assisted by MAP's consultant, Mr. Ennabli: a focus paper, methodological approach, draft model report, questionnaire, and terms of reference for carrying out the Review. For his part, Mr. Lucien Chabason, MAP Coordinator, stressed that drawing up the review was going to be an essential task over the year which was just beginning, and that its presentation at the sixth meeting of the MCSD in Tunis next November should be the crowning achievement of an ambitious attempt. The steering committee agreed on several points concerning the content of the report and the questionnaire which would be used to collect the data:

- ✓ To remain within a context of sustainable development without favouring the environment to the detriment of the development components;
- ✓ To recall throughout the whole project that there is still a disparity between the two banks of the Mediterranean;
- ✓ To avoid over-focusing on MAP, and to extend the Review to the other players in sustainable development;
- ✓ To focus on the institutional aspect of implementation;
- ✓ To put the Mediterranean in the global perspective.

On a practical level it was decided that work should begin without delay, by establishing the necessary contact with the members of the MCSD, sending them the questionnaire, and making the best possible use of information already available. Monaco joined

the ranks of the steering committee, and is set to host its first meeting; the working structure was decided upon. Finally, as far as financing is concerned, it was decided that priority would be given to the use of already existing resources (from MAP and Monaco) in drafting the documents to be synthesised into the Review. The next meeting of the steering committee is planned for Corfu (Greece), at the invitation of the EOAEN.

The Sixth Meeting of the MCSD in Tunis: a new dimension

Having examined the question of new themes and decided that they should be classified according to priority at the next meeting of the MCSD on the basis of pre-feasibility studies, before then being selected and finally launched at the 7th meeting in Turkey, the meeting then approved the idea of rolling the 6th meeting in Tunis into one with the regional consultation foreseen with the United Nations Commission for Sustainable Development (UN-CSD). The forthcoming meeting of the MCSD would thereby take on a whole new dimension which would mean that the Review could be made known far and wide. The date of 21- 25 November 2000 was set for this MCSD meeting which should also contain a ministerial section. ■

XVIIIth Meeting of the MED Unit and the Regional Activity Centres on MAP's Programme

(Athens, 24 and 25 January 1999)

As every year, the management of the Athens-based MED Unit and the directors of the Regional Activity Centres got together in Athens to examine their respective activities for the year 2000 in the light of the recommendations of the Eleventh Ordinary Meeting in Malta. In accordance with the conclusions of the 3rd meeting of the MCSD Steering Committee each component was asked to throw their weight behind the preparation of the Strategic Review for the Year 2000, which «is the absolute priority and should crown MAP's work for the current year». The Review should be neither an assessment nor a state of the environment report, but rather an overview of efforts made in the region towards the implementation of Agenda 21, particularly at political and institutional level. It should produce a coherent, objective document which is balanced in its comments and assessment of the effectiveness of what has been done in the Mediterranean to date, in order to shed some light on the strategic options for the future. ■

Agreement between MED POL and the University of Genoa on Biomonitoring

Biomonitoring is a new component in phase III of the MED POL programme for the monitoring and control of pollution in the Mediterranean. It is gradually being integrated by all countries into their own national monitoring programmes. It provides an «active, sensitive and real» picture of pollution since it involves monitoring the effects of contaminants on organisms (apart from the «passive» measurement of these contaminants in water and sediment). When exposed to harmful pollutants/contaminants in the environment these organisms show several symptoms which indicate a biological change, the first ones appearing at cellular level- these are the so-called «sub-lethal» effects (less serious than the ones which lead to the death of the organism). By using sensitive organisms- known as «biomarkers»- in the lab, the responses obtained serve as «early warning» instruments for pollution monitoring, which make it possible to indicate the appearance of harmful effects at cellular and sub-cellular level. Biomonitoring also includes eco-toxicological tests and the ecosystem's responses. Within this component MED POL has recently concluded an agreement with the Inter-University Research Centre of Genoa University (Italy), according to which the Centre will organise: training courses for researchers and technicians who wish to undertake activity in the biomonitoring field; individual training courses for researchers wishing to solve some specific technical problem or to further develop research; a website which will be constantly updated, in cooperation with RAMOGE, on the results of the various regional biomonitoring plans; and an intercalibration exercise to ensure the quality of the data collected. Finally, the Centre will develop new technologies in the biomarkers field. ■

THE PROTOCOL ON SPECIALLY PROTECTED AREAS AND BIODIVERSITY IN THE MEDITERRANEAN CAME INTO FORCE ON 12 DECEMBER 1999

The SPA/Biodiversity Protocol is the first of the renewed Barcelona system to have come into force- on 12 December 1999, following ratification by 6 Contracting Parties (Spain, Italy, Malta, Monaco, Tunisia, EU). It replaces the former SPA Protocol which was adopted in Geneva in 1982 and came into force in 1984. After the Rio Summit and the 1992 Convention on Biodiversity this Geneva Protocol no longer provided an adequate framework for the effective conservation of

Protocol would have to be drawn up. Compared with the 1982 version, the 1995 Protocol brings in some essential new elements: the extension of the geographical scope of implementation which now also includes the seabed (and therefore marine plant life) and its sub-soil, as well as the wetlands; and clear, specific measures for the conservation of threatened or endangered species. For this purpose a list of 104 species has been added to Annex 2 of the Protocol, whilst a third annex lists 28 species whose exploitation should be regulated. Moreover, the Protocol invites countries to see habitats as being important in the conservation of species.

Finally, the Protocol introduces a new concept for the region: the list of specially protected areas of Mediterranean interest (SPAMIs). Thanks to this new protocol each state in the region may propose areas coming under their own jurisdiction for inclusion on the list of SPAMIs. The Parties may also suggest the inclusion of areas situated in the high seas outside the limits of their own jurisdiction.

Only sites of regional interest with adequate and effective legal protection and with the management means sufficient to achieve the aims of conservation may figure on this list. The criteria for selecting protected marine and coastal areas which could be included on the list of SPAMIs as well as the procedures governing the inclusion of sites on the list are laid down by the Protocol.

One innovative aspect of the SPAMIs is that they may be wholly or partly located in the high seas outside the jurisdiction of the Parties.

The entry into force of the Protocol was the subject of a joint conference given on the fringes of the MCSD steering committee to the national and international press in Tunis on 21 January 2000. At this press conference, given

by Mrs. F. Kefi, the Tunisian minister for the environment and land use planning, Mr. B. Fautrier, the Minister Plenipotentiary for Monaco, and Mr. L. Chabason, MAP Coordinator, it was made clear that in the new Protocol the «proclamatory» type of law contained in its predecessor was now making way for something more «prescriptive». ■

AN SPA/RAC MISSION TO LIBYA

As part of its activities to support countries in implementing the Action Plan for Sea Turtles and the development of protected areas, the SPA/RAC organised a visit to Libya in the course of which it participated in a meeting of experts held in El Baidha on 26 and 27 November 1999, alongside the MAP Coordinator, the WWF, MEDASSET, the Med Turtle network and all the national and local Libyan players on the scene.

The main aim of the meeting was to present the results of the studies conducted by the SPA/RAC and the Libyan authorities for the inventory of sea turtle nesting sites along the whole of the Libyan coast, as well as the essentials of the geo-referenced data base on biodiversity and protected areas in Libya. Participants had the opportunity to identify the activities to be conducted over the next two years and to prepare a programme of activities between the SPA/RAC and the Libyan authorities. The programme plans for the training of Libyan managers responsible for the setting up and development of the data base on protected areas and biodiversity, the writing of a brochure on the El Kouf National Park, and backing for a pilot exercise for an inventory and description of habitats on Faroua island or at the Boughzala site. ■

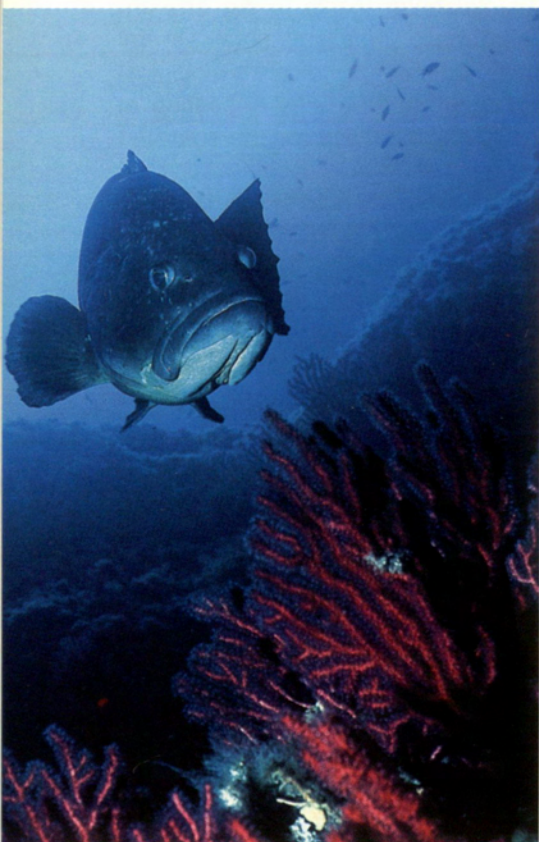


PHOTO: SPA/RAC, Tunis

the elements making up biodiversity, which is what prompted the Tunis-based SPA/RAC to convene an experts meeting (Ustica, Italy, 1993) to look into the possibility of amending it. But it soon turned out that given developments in international law in this field, it would not be enough simply to amend the Protocol- what was needed was a complete re-draft. In other words, a new

THE FRENCH-ITALIAN-MONEGASQUE SANCTUARY FOR MARINE MAMMALS

In the late 80s NGOs (such as SOS grand Bleu and Greenpeace), scientists and local MPs condemned the sudden multiplication in the number of fishing vessels using drift nets and the multiple reports of cetaceans becoming entangled in the nets. Caught up by this movement, in 1991 the Thethys Institute along with the European Rotary Association for the Environment presented the «Pelagos» project (a huge protected area in Corsican, Ligurian and Provençal waters) at a meeting held in Monaco, supported by Rotary from the Principality, Milan and Saint Tropez, and assisted by many NGOs. Several French-Italian-Monegasque governmental meetings resulted in the signing of a Declaration on the setting up of a sanctuary for the protection of marine mammals in the Corsican-Ligurian-Provençal basin on 22 March 1993.

In 1999, negotiations on an agreement to breathe life into the declaration were held in Rome and Paris. The text of the Agreement was signed on 25 November and will be deposited in the Principality. The sanctuary extends over an area of 100,000 km², adding part of the Tyrrhenian sea and the Tuscan archipelago to the 1993 project.

Since the Roman Empire certain place names along the Ligurian coast have related to visits by cetaceans: the area between Ventimiglia and Albenga was called the Costa Balenae, and Portofino has taken its name from Portus delphini. Popular sightings were later confirmed by scientists. In fact, everything converges to provide a scientific explanation for why these animals frequent the area in question. There is a combination of physical and climatic conditions in the Corsican-Ligurian-Provençal basin which make it an exceptionally productive Mediter-

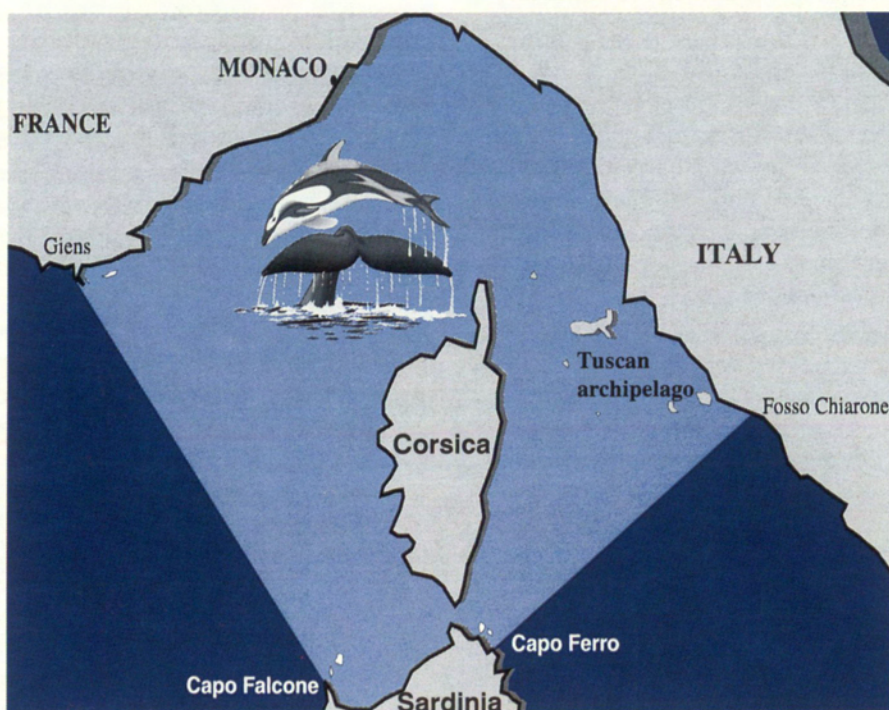
anean pelagic area which is rich in living species. The movement of masses of water in this basin is influenced by the Mediterranean's general circulatory system, which produces the Ligurian current in particular. Thanks to new sampling strategies coupled with satellite remote sensing it is now known that certain areas of the Western Mediterranean, and in particular the Corsican-Ligurian-Provençal Basin have productivity rates almost on a par with the notoriously productive waters of the Atlantic.

Oceanographic phenomena specific to these areas produce large numbers of food chains which are marked by great diversity of species: Plant plankton, animal plankton (including the crustaceans which serve as a staple food for whales), fish and cephalopods (the staple food of dolphins and sperm whale). The planktonic identity of this area has now become a well-known fact. One of the main reasons for setting up the protected area of the sanctuary is related to this development of marine life at all levels. The

Corsican-Ligurian-Provençal Basin is one of the regions in the Mediterranean with the largest cetacean presence, both in terms of the number of individuals and their species diversity. This statement can now be backed up by the results of much research and numerous spotting campaigns run during the summer season throughout the whole of the Western Mediterranean. A census carried out in 1992 revealed that during the summer more than 25,000 examples of blue and white dolphin and more than 1,000 examples of common finback whales visited this type of area. Recent genetic studies have shown that some of these species belong to populations which do not hail from the Atlantic stocks. These observations further increase the need for protection: were the Mediterranean individuals to disappear one day they could not be replaced by Atlantic ones.

The sanctuary's legal framework

The sanctuary extends over 100,000km², including inland waters,



territorial seas and the adjoining areas of the high seas.

Since the Sanctuary consequently falls under the application of international law which is undergoing major change, it should be slotted into a network of international agreements covering the area: the Barcelona Convention and its new Protocol on specially protected areas and biodiversity in the Mediterranean; Natura 2000, the European Community's process which aims to build up a network of special conservation areas intended to retain the distribution and the abundance of threatened species and habitats both on land and in the sea; the Bern Convention on Europe's wild fauna and flora.

Finally, in a broader geographical context, the work which in 1996 gave rise to the Monaco Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) under the aegis of the Bonn Convention on migratory species should also be included, this being the first instrument to link the countries of the 2 sub-regions concerned.

The Agreement on the Sanctuary

The French-Italian-Monegasque Agreement makes reference to the pre-cited regional texts in laying down the bases for sub-regional cooperation between the three States. Besides a ban on any direct harm to cetaceans (capture, harassment, etc.), the Agreement also foresees the implementation by the three Parties of international and community rules and regulations governing the use and ownership of drift nets (on this point a total ban will come into force in 2001).

From an institutional point of view, the Agreement stipulates that the Contracting Parties shall meet within the framework of an organisation already active in the region, the RAMOGE Commission's structures having been sounded out for this purpose. In the

spirit of the ACCOBAMS Agreement which attributes the setting up of Protected Areas to the Barcelona Convention, the text explicitly foresees that this vast protected area shall be proposed by the three Parties as a specially protected area of Mediterranean interest (SPAMI) under the Specially Protected Areas Protocol. Thus the structures for the comprehensive pro-

tection of cetaceans in the Mediterranean region are virtually complete, and inter-state cooperation and the means for allowing the participation of civil society are gradually being set up. (Most of the above text is taken from informal documents sent to MAP by the government of Monaco. For additional information, contact the interim ACCOBAMS Secretariat: e-mail: mcvan-klaveren@gouv.mc.) ■

GREECE: THE NATIONAL MARINE PARK OF ZAKYNTHOS IS LEGALLY ESTABLISHED



The first marine park in the Mediterranean to protect sea turtles has been legally established on the Greek island of Zakynthos (Zante) in the Ionian, the relevant Presidential decree having been published in the Official Journal in late January 2000.

Zakynthos is the single most important nesting area for the loggerhead sea turtle (*Caretta caretta*) in the Mediterranean, with an average of 1,300 nests per season on a total of 5km of beaches. In 1984 the Greek government started taking protective measures which sparked a lively reaction from the local population, particularly towards NGOs which were pushing locally to have the measures respected. Banned activities continued, leading to a deterioration in the *Caretta caretta*'s situation which was of concern to the Council of Europe and the European Commission, which planned to open proceedings before the European Court of Justice for failure to comply with the "Habitats" directive.

The National Marine Park of Zakynthos incorporates and in certain cases expands the existing protection zones on land and at sea. It introduces new nature reserves. It makes provision for the creation of a non-profit making body to manage the park under the supervision of the Greek Ministry of the Environment and in cooperation with other competent authorities and NGOs active in this field. Effective implementation obviously still has to be achieved, and in particular the management body needs to be created and rapidly come on-stream, because the many problems which exist in the field are not simply going to disappear as if by magic. Nevertheless there is at least now a solid, irrevocable legal basis to gradually do away with the resistance of tour operators, property promoters and beach-lovers. For the associations who have given their all over two decades to save the sea turtles this is indeed a success for which they more than anyone deserve the credit (for further information contact the Sea Turtle Protection Society of Greece, [website: www.archelon.gr](http://www.archelon.gr)). ■

MASS DIE-OFF OF GORGONIAN COMMUNITIES IN THE MEDITERRANEAN

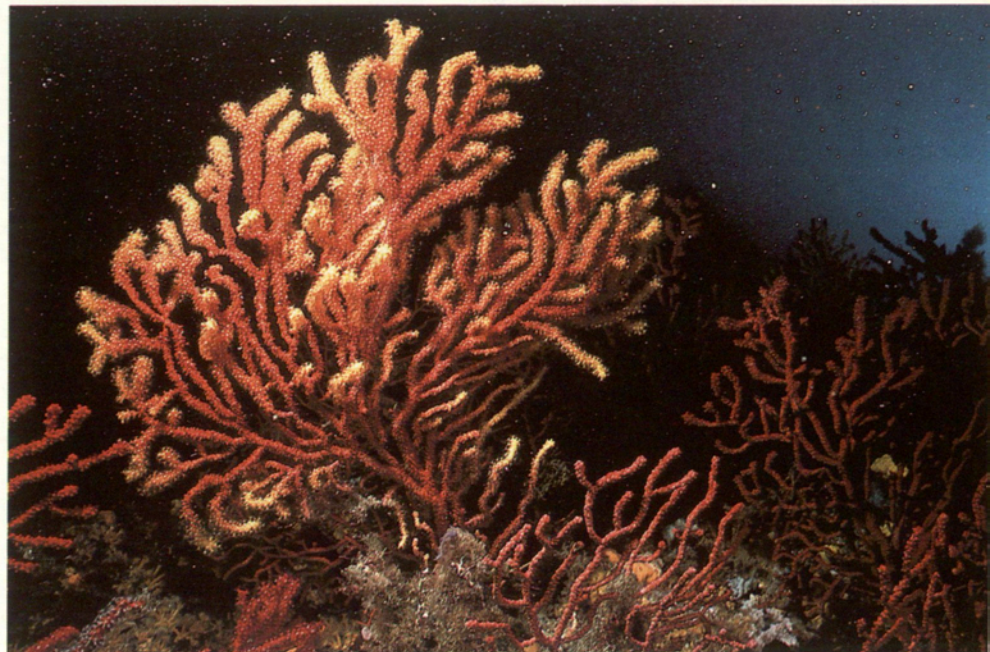
Alarming signals about the state of gorgonians are arriving from various points in the Western and Eastern Mediterranean. Despite resembling tree-like plants in the depths of the sea, gorgonians are in fact animals which belong to the class of anthozoans (from the Greek «anthos» meaning flower, and «zoon» meaning animal), the cnidarian group and the coelenterate branch. Like other anthozoans such as corals and sea anemones (actinias) they live attached to the bottom of the sea and form colonies of polyps arranged like flowers around a horny calcareous skeleton. The tissue surrounding the skeleton is the living part. They are well-known to divers for their flamboyant appearance and red, white, orange or bright yellow colour depending on the species.

Since last summer, however, an epidemic the cause of which is still not known has been seriously affecting gorgonian populations from Genoa to Marseilles, in other words along the entire Ligurian coastline and that of Provence-Côte d'Azur. The seabed around the islands of Porquerolles and Port-Cros have been seriously affected and the first symptoms are now appearing in northern Sardinia and on the island of Elba, i.e. necrosis of the polyps swiftly followed by the death of the organism. The marine biology laboratories in Italian (Genoa), French (Laboratoire d'Environnement Marin Littoral/Nice and Endoume/Marseilles) and Spanish (Barcelona) universities are endeavouring to establish the exact cartography of this new scourge which is spreading through most colonies of red coral (*Corallium rubrum*), white (*Eunicella singularis*), red (*Paramuricea clavata*) and yellow (*Eunicella cavolinii*) gorgonians and other animals such as sponges, and stony coral or madrepores (which also form polyp colonies). And to establish the causes. Several hypotheses are currently being put forward and will doubtless require lengthy and repeated investigation before they can be validated: a 2 degree or so increase in sea temperature over 10 years since gorgonians are stenothermal, in other words

highly sensitive to slight variations in temperature; the presence of one or more pathogenic germs; various pollutants such as oil, organochlorides or heavy metals. These factors could also well act in association or in synergy. According to information given to *Medwaves* in March 2000 by Mr. Patrice Francour, coordinator of the «Gorgonians» dossier in the Nice-based Laboratoire d'environnement Marin Littoral, although few new elements have emerged in the first months of 2000, the latest studies confirm the rise in temperature as the trigger factor- and not as the direct cause of mortality. Analyses have already isolated some bacterial strains, and now a culture has to be grown in healthy gorgonians to ensure that they do indeed cause mortality. But with so many different species having been affected it is not possible to rule out other causes- such as phytoplankton. To date 24 species affected by mass mortality have been identified. For the eastern Mediterranean, a further observation has been received from the university of Thessaloniki where biologists (H. Chintiroglou and G. Skoufas, personal communications) using a series of chronological data going back to 1994 for the Aegean ecosystem, have noted a sharp drop in gorgonian populations which are

being suffocated under algae: according to the authors this phenomenon, which first affects the white gorgonian *Eunicella singularis*, occurs when the polyps stop secreting an anti-fouling mucus (which behaves in the same way as anti-fouling paints applied to the hulls of ships to protect them against invasion by marine organisms).

After the *Caulerpa taxifolia* invasion, if this die off of gorgonian populations is confirmed and spreads it will create another threat of imbalance for the Mediterranean ecosystem, since these marine animals have an important role to play in the carbon cycle of coastal waters, and provide a support for a very varied epifauna. In an article in the American scientific magazine «Science» (no. 285, September 1999) and entitled «Emerging Marine Diseases- Climate Links and Anthropogenic Factors», 13 scientists from American and European universities list Mediterranean gorgonians amongst various communities which have been victims of mass mortality over recent years in different parts of the world ocean, and mention physiological stress linked to climate change and human activity which apparently reduce the host's resistance and therefore also increase the frequency of opportunistic diseases. ■



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THE ACTIVITIES OF THE PRIORITY ACTIONS PROGRAMME (SPLIT)

Regional Workshop on Integrated Urban Water System Planning

(Luqa, Malta, November 25-27, 1999)

Achieving effective management of the water «flowing» through an urban environment so as to achieve sustainable urban development is a difficult but very challenging task. This should be directed towards the integration of environmental objectives with urban planning, and implementation at the level of the town, neighbourhood and individual household. Furthermore, urban planning and its water aspects should encompass integration beyond the city limits, considering both the river basin where the city is located and the surrounding region affected by and interacting with the city. In addition, all relevant actors must be functionally and meaningfully involved in this process, including education, agriculture, finance and energy. Public involvement is also essential for effective results (Paris Declaration, 1998).

The current use and management of urban water systems must not be at the expense of future generations. The goal of integrated urban water system management is to meet present and future needs by developing lower-cost but adequate services that can be implemented and sustained at the community level. This workshop was organised as a step towards the achievement of this goal.

The Workshop was organised by UNEP-MAP/PAP in co-operation with the Institute of Water Technology (IWT), Malta. It was held on November 25-27, 1999. The Workshop was attended by 17 representatives from 15 Mediterranean countries, as well as 3 Maltese experts invited by the IWT. Amongst the set of recommendations which were ado-

pted, PAP was invited to continue with the finalisation of the Guidelines taking into consideration the conclusions of this Workshop, to carry out its work in close cooperation with the MCSD Working Group on urban management, and to undertake activities aimed at capacity building and training in this field (for further information: www.pppa.te.hr) ■

Workshop on integrated coastal area and river basin management

Toulon, 10-12 January 2000

The problems coastal areas are facing have long been the focus of attention of international organisations and institutions dealing with the management of coastal resources and the environment. The prevailing approach at the dawn of the new millennium is the extension of the management of coastal areas to the adjacent watershed areas. The physical and socio-economic relationship between the river basins and the adjacent coastal areas provides the basis for managing development according to the principles of sustainability.

UNEP through the Regional Seas and other water related programmes, in conjunction with the Priority Actions Programme (PAP) operating in the Mediterranean through the Coastal Area Management Programme (CAMP) have built up a high-level of expertise in integrated coastal area management (ICAM). One of a number of joint initiatives in this sphere is the preparation of a Conceptual Framework and Planning Guidelines for integrated coastal area and river basin management (ICARM). The document elaborates the ICARM concept, which is intended to be the first step towards the realisation of practical activities and projects.

The next step in the implementation of this initiative was the organisation

of a workshop with the aim of discussing the conceptual and practical questions concerning the implementation of ICARM. The Workshop was held in Toulon (France), from January 10 to 12, 2000. At the Workshop, the Guidelines for the implementation of ICARM were presented and their appropriateness for relevant projects was discussed. Besides, several case studies had been specially prepared for the Workshop to demonstrate the practical application of the document. ■

Demonstration Project for Cetina River: Environmental and Socio-Economic Profile

This demonstration project which is being jointly run by UNEP and the Split-based PAP/RAC deals with the integrated management of the Cetina river basin and the adjacent coastal area. It aims to present a new approach to the management of river basins and their impact on the adjacent coastal areas. The River Cetina watershed has been chosen as the most appropriate example to illustrate such an approach. In 1999, the area's so-called ecological and socio-economic profile was prepared as the basis for future planning and management activities. To this end, and with the support of UNEP, a Working group was set up to prepare a document which was discussed at a meeting of stakeholders. The meeting was held on 14-15 January 2000 in Split, at the PAP/RAC premises. The main objective of the meeting was to present the 1st phase of the project: ecological and socio-economic profile, conflict situations, possibilities and constraints. At the meeting proposals were made to amend the project and to improve the Cetina management system. Proposals for the 2nd Phase of the project were also presented. ■

The Tunis Workshop on environment and development «observatories» in Mediterranean countries

(18-20 November 1999)

By Silvia Lara, Blue Plan

Five years after the first Rabat conference on Mediterranean Observatories the Tunis workshop which was organised by Blue Plan/MAP and the Tunisian authorities with European Commission (LIFE) backing, brought together representatives from 14 countries (Albania, Cyprus, Egypt, Spain, France, Greece, Italy, Lebanon, Malta, Morocco, Slovenia, Syria, Tunisia and Turkey) and regional organisations (European Environment Agency, CEDARE, MAP, Blue Plan, Specially Protected Areas).

At the workshop significant headway was made towards clarifying and defining the tasks expected to be performed by the observatories. Seventeen experiments at national or regional (Mediterranean, European) level were presented and discussed. The lessons learned from these experiments produced conclusions which form a sort of «guide» as to what we should be striving towards in the Mediterranean.

Diversity of national situations

The development of the observatories is based on social and political demand. For the various Mediterranean countries which are members of the European Union, the creation of the European Environment Agency in 1993 was a crucial step. The European countries were forced to build up their environmental monitoring/assessment capacity, and in certain cases to construct major national observatories (France and Italy in particular), the use of which is now widely recognised.

In countries to the south and east of the Mediterranean, Morocco set the ball rolling when it set up the first general observatory in 1994. Morocco decided to go down this path in the light of an assessment indicating that the annual cost of environmental degradation on its territory amounted to 8% of its GDP, and that therefore strategic information should be developed which could help decision takers redirect the line of development by integrating the environment. Tunisia then followed suit. Other countries in the south and east are currently striving

to develop a similar set up (Slovenia, Malta, Albania, Turkey, Syria, Lebanon, Algeria...). Although their status covers a broad range (public body under supervision, ministerial department, project unit within an agency), the various Mediterranean «observatories» share the triple aim of collecting information on the environment and development, utilising data to introduce indicators, and disseminating information.

The observatories' role and methods

The role of an observatory is therefore not to create data but rather to generate indicators, to analyse trends, and to produce and circulate value-added information of use in public decision taking («reporting»). Environmental reporting means that on a regular basis information on the quality of the environment, the pressure of human activity upon it and society responses (public authorities, private sector, households and consumers) to environmental concerns can be made public. Rendering this type of information accessible to the public can generate a positive impact on the behaviour of civil society and help produce the necessary contradictory discussion of the development/environment link and the type of action to be taken.

For an «observatory» the preparation of reports on the environment requires a high degree of upstream networking in order to collect the data (statistics, scientific and geographical information...) needed for the diagnosis and depending on the themes selected, as well as essential thematic expertise for analysing the problems and interpreting data, and possibly also for filling in any gaps in the quantitative information.

Several Mediterranean countries publish reports on the environment at regular intervals. In countries where the «observatory» role is still in its teething stages the initial report of this type will inevitably be incomplete and imperfect; it will however be drafted on the basis of a phased programme of activities and a method which

defines the content (environmental and developmental themes to be tackled, scales of observation and logical structure) and the target public, particularly decision takers and grassroots contact channels (NGOs, media).

The preparation and use of indicators lie at the centre of any «observatory» role. Indicators enable past trends to be measured, current developments to be shown, possible developments to be pre-empted upon and alarm bells to be sounded in situations of non-sustainability which need to be rectified or averted.

Indicators can also help establish quantitative objectives for the results to be achieved, and to measure progress or the distance still to be covered in comparison with the aims already established (indicators of environmental performance).

The preparation of indicators helps to identify priority data in terms of sustainable development and to use it in order to produce information which can be of use in decision taking and can provide an incitement to act. The «Indicators» activity should be developed in all countries within a harmonised framework. The common core of Mediterranean indicators which was adopted through application of the MCSD's recommendations, now provides the reference.

Essential partnership work

The «observatories» should not substitute data sources (statistical institutes, sectoral institutions with useful data). They should on the contrary develop a dynamic partnership with the main data providers without under-estimating the time needed to collect the data and the skills required for discussing with the providers.

It is essential from the word go and in accordance with the principle of subsidiarity to involve the main data sources in the observatory's activities. Even if at the outset such interplay may be based on informal networks, later on it will have to be couched on a more solid basis (material or financial incentives, cooperation protocol, legal fra- /..

mework), and extended to other partners by setting up steering committees.

Useful information systems and data bases

Practical lessons learned from different experiences show that data structuring is not only a question of technology, and that in reality there can be no standard information systems unless the context and the development of priorities over time are taken into account. Since the stumbling block tends usually to be «where do we start?» a precondition for any system design must necessarily be to have a clear definition of the aims to be achieved, the environmental themes and economic sectors to be covered, and the intended use of the data to be collected and structured.

What are the priorities for action in the Mediterranean?

All too often the setting up of national observatories still runs up against institutional difficulties and inadequately expressed or over-tentative political will. Within this context Mediterranean cooperation becomes of the essence in supporting the emergence of national «observatories» and better defining the type of synergy to be developed between the regional and national levels.

In accordance with the decisions taken by the Contracting Parties (Malta, October 1999), the Mediterranean countries are invited on a voluntary basis to collect the data required to calculate the 130 Mediterranean indicators listed by the MCSO and to effectively contribute to MAP's preparation of the first Mediterranean report on sustainable development, scheduled for the year 2002, which will largely build upon the indicators chosen.

In Tunisia, the national observatories for the environment and development and their equivalent agencies were invited to participate in this work with MAP, particularly in the calculation of the chosen indicators which can be worked out at national level and, if possible, how they break down for the coastal areas and the coastline. Once this work has been completed a Mediterranean meeting will be organised by Blue Plan/MAP to enable countries to present their contributions. ■

DEPARTURES....

Mr. Adnan Aksel, Computer Officer, left the Unit at the end of December 1999, his post having been converted into that of Information Officer, for which the recruitment process is underway. A Turkish citizen born in Yalova, having completed secondary schooling in his own country he then went on to university in the United Kingdom, obtaining his degree (B.Sc) in computer studies in 1980. On his return to Turkey he studied for a Masters (M.Sc) in physical oceanography at the Middle East Technical University (METU), which he completed in 1983. He joined MAP in July 1987 where he became known to everyone as «Mr. P.C.» or simply «Adnan».



He is to be credited for the gradual introduction over the next few years of the Athens Unit's computer and data processing system, for training the staff in the new skills required as a result in all applications, in particular in the secretarial and communications fields, the setting up of various data bases, networking, and MAP's website. Aided by his dual background in marine biology and computing, he was particularly responsible for the management, processing and graphical presentation of MED POL data, an essential task during phases I and II of the programme which focused on the first major inventory of pollution. In 1996/97 he took over the design and publication of Medwaves issues 33 and 34 on a test basis within the Unit, which allowed it to «go coloured» and to be presented more attractively. Adnan Aksel personified the introduction of new information/communication technologies to MAP.

Mrs. Polly Ballis, who retired at the end of February 2000 personifies for MAP's support services the «heroic age» when the programme had to be built from scratch- scientifically speaking, of course, where very little was known about Mediterranean pollution, but also in terms of the administrative work involved in preparing documents and their different language versions, mail, contact with countries and institutions, and the often gruelling running and organisation of the main institutional meetings. After her appointment to MAP in 1983- when the MED Unit was being set up in Athens- she held down various jobs in the secretariat before becoming Ibrahim Dharat's «right hand lady» at one of the programme's nerve centres. And since the Athens Unit or MAP is often called the «Secretariat» («of the Barcelona Convention» being implied), this is an opportunity to recall that the term should also be taken in its literal and most basic meaning: combining discretion, great courtesy and efficiency, Polly Ballis is one of the «off-stage combatants» without whose dedication MAP's cause would have remained a dead letter.



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....AND ARRIVALS AT THE COORDINATING UNIT

Mr. Fouad Abousamra took up his post as MED POL administrator in the Athens Unit in October 1999. He is involved in the implementation of the «L.B.S.» and «Dumping» Protocols as well as the Strategic Actions Programme (SAP) on combating pollution from land based sources. A Syrian citizen, he studied in France where he acquired his state doctorate in environmental chemistry in 1981. On his return to Syria he held various official scientific posts, particularly within the Higher Institute of Applied Sciences and Technology in Damascus, where he was director of the Environmental Development Laboratory. He also led the Syrian team during Syrian-Russian marine exploration expeditions in the Eastern Mediterranean, and headed the group responsible for preparing the State of the Environment Report for Syria, before becoming technical advisor to the Syrian Ministry of the Environment in 1998.

Mr. Khaled Ben Salah replaces Mr. François Tissot (appointed to UNEP headquarters in Nairobi) as MAP's administrator/fund manager. A Tunisian citizen born in Ez-Zarah near Tunis, he acquired his masters in applied economics at the University of Paris IX Dauphine in 1984. After working in the banking and insurance sector in his own country he was appointed as administrator to the United Nations High Commission for Refugees (HCR) in 1993-1994 in Zaire and Rwanda, and then as head of the Rwanda mission of the French Red Cross -ICRC- for the rehabilitation of health centres. In 1997 he took part in a mission to Iraq for the rehabilitation of 100 schools and health centres within the framework of a mission with an NGO- a UNICEF funded programme. In 1998-1999 he was the regional delegate for finance/administration to the IFRC/FRC in Amman (Jordan).

Technical Reports

MAP-Blue Plan/RAC: *Proceedings of the Seminar on «Prospective Land Planning in the Mediterranean and the player by player approach».* In its opening section this rich volume includes an introduction for decision takers (executive summary) with the report, summary and conclusions of the three day seminar held in Sophia Antipolis from 7-9 November 1996, which brought together around 30 participants from 17 countries under the aegis of the Blue Plan. The second section includes all the presentations, virtually all the discussions and the outcome of the working groups. For several years the Blue Plan has been involved in the systemic and prospective analysis of coastal zones which implies adapting the methods and tools for global prospective planning to the local level. Thus the «Land Use Planning» facet is tacked onto the environment/development issue. This territorial approach has highlighted the fundamental importance of players involved in planning, economic development and environmental protection in the development of the Mediterranean coastal zones, players who in practice it is difficult to encourage to conduct a systemic and prospective study and to convince of the need to take account of the results of such studies in order to then plan in a forward-looking and proactive manner. The aim of the seminar was to present developments in prospective methodology, to test an analysis of the players roles using simulation exercises in small working groups and to think about the stakes of coastal urbanisation and the future of coastal towns as well as the contribution which prospective planning can make to the necessary political decisions. All leaders involved with planning will find food for thought in this technical report based on real cases which were presented and subsequently discussed in detail (Rhodes, Syrian coast, Iskenderun Bay, Fuka-Matrouh area, port of Marseilles) by some of the most eminent experts in this field in the Mediterranean and the world. It is only to be hoped that one day there will also be an English version of this publication (No. 126 of the Series, Athens/MAP, 2000, 197 pages, only in French, e-mail: adavaki@unepmap.gr).

MAP-PAP/RAC: *«Formulation and Implementation of CAMP projects, operational Manual».* Over the years the Coastal Areas Management Programmes (CAMPs) have become one of the mainstays of MAP, which have the advantage of concentrating all of the programme's regional activity centres in the field so that they can work alongside teams of national and local experts. Thus there have been three successive generations of CAMPs in thirteen countries (seven have been completed, four are in the pipeline and one is still on-going). Within this activity the Split-based PAP centre has a leading role to play and has built up tremendous experience in this field. The aim of the manual which it published in late 1999 is to pool this experience and make it available to all stakeholders whilst at the same time identifying the concept and aims of the CAMPs, their role in supporting sustainable development in the region, their institutional provisions, financing, structure and implementation, and finally their follow-up and assessment on completion. It includes 4 annexes providing basic information on the CAMPs, the programme for participation in each project, the selection criteria for the strategy, and finally the tools and techniques used in the CAMPs (86 pages, only in English, PAP/RAC, Kraj 11, P.O. Box Sv. Ivana 74, 21000 Split, Croatia, e-mail: pap@gradst.hr).

MAP-CP/RAC: *Guidelines for integrated coastal area and river basin management (ICARM).* The Conceptual Framework and Guidelines presented in this document are intended to:

- sensitise all those engaged in coastal zone management to river basin management issues;
- sensitise all those involved in river basin management to coastal zone management issues;
- provide a framework of reference for Integrated Coastal Area and River Basin Management (ICARM).

The Conceptual Framework and Planning Guidelines should be seen as general reference tools whilst detailed descriptions of natural processes, human activities and their interactions can be found in the specialised scientific literature. Detailed accounts of environmental management and planning methods and techniques, as well as information on specific tools, can also be provided

by specialised sources.

Part I provides the basic Conceptual Framework for linking the management of coastal areas to river basins and vice versa.

- The first chapter sets out the basic context for integrated management in river basins and coastal areas and outlines the rationale for their joint management.
- The second chapter describes the main physical characteristics and processes in river basins and coastal areas.
- The third chapter deals with the issue of human uses in both river basins and coastal areas focusing on population pressures, economic and resource development activities, urbanisation and infrastructure development and land-use patterns in order to demonstrate their effects on environmental systems (habitat loss, pollution, erosion, etc.) which may also affect human activities.
- The fourth chapter sets out the basic framework and aspects (principles, goals and objectives) for taking joint action in river basin and coastal area management, including alternative strategies for their implementation.

Part II contains the Planning Guidelines for Integrated Coastal Area and River Basin Management.

- Chapter five presents the basic steps in setting up an integrated management plan for coastal areas and river basins. It shows how to organise the process of strategy and action plan development.
- Finally, chapter six provides an overview of some key policy instruments for implementing integrated management, showing their basic features and potential use with emphasis on state-of-the-art tools.

The Guidelines provide a conceptual framework for initiating plans and can also be used on a selective basis for specific aspects of integrated coastal area and river basin management. (*Separate English and French versions, PAP/RAC, Kraj 11, P.O. Box Sv. Ivana 74, 21000 Split, Croatia, e-mail: pap@gradst.hr*).

UNEP/MAP/RAMOGÉ: *«Manual on the Biomarkers recommended for the MED POL Biomonitoring Programme».* The aim of this document is to provide a technical reference for laboratories interested in starting routine biological effects pollution monitoring. Following an introduction on mutagenic processes, cytoplasmic injuries and the utilis-

tion of sub-lethal responses as diagnostic tools, the four chapters then focus on the following evaluations: The fragility of the lysosomal membrane; MFO activity, and metallothionein level. The manual was written with the assistance of scientists from the Universities of Malta and Genoa, the Cancer Institute of Genoa and the Department for the Environment, Urbanism and Construction in the Principality of Monaco, within the framework of cooperation between UNEP and the RAMOGE Agreement- which meant that the manual could be complemented by a video cassette showing the techniques used. (92 pages, in English and French, UNEP/IMAP, Athens, e-mail: adavaki@unepmap.gr)

MEDTAC-Blue Plan/RAC-MAP: «A Mediterranean Vision of Water». This document is the work of Jean Margat et Domitille Vallée on behalf of the Blue Plan and at the behest of the Global Water Partnership (GWP)/MEDTAC, within the framework of the World Vision of Water promoted by the World Water Council. Published in October 1999, it was reworked and further fleshed out in March 2000 for presentation to the World Water Forum in The Hague (Netherlands). Several regional consultative meetings were held in 1999 in Como, Bari, Montpellier and Malta before this reworking took place, in order to gather the views of Mediterranean stakeholders in this field. Following the Blue Plan's forward-looking approach the document explores various possible scenarios for the future development of water management, and draws partly on work already completed by the Centre in this area. Taking the form of a practical brochure it «displays» the data and trends in numerous graphs, tables and insets, taking 3 scenarios for the year 2025: «A conventional water Mediterranean», «A water in crisis Mediterranean», and «A sustainable water Mediterranean». What the authors and all those contributing to this work have endeavoured to do has been to highlight the non-sustainability of development processes which do not respond quickly in anticipation of breakdown, and ways in which to redirect a line of development from the unacceptable back towards the acceptable. (63 pages, only in French, Blue Plan, 15 rue Ludwig Van Beethoven, Sophia Antipolis 06560 Valbonne, France, e-mail: planbleu@planbleu.org; GWP/MEDTAC, 859 rue J. F. Breton, 34090 Montpellier Cedex, France,

e-mail: gwp.medta@mnet.fr).

ANPA-UNEP-ECOMED: *Cleaner Production in the Mediterranean Region, second regional report.* «Cleaner production» consists of constantly improving industrial processes, or in redesigning or replacing existing products in order to avert air, water and soil pollution and to reduce waste at source. It implies a change in attitude as well as the utilisation of specific know-how and the improvement of technology used by industry. It is therefore built upon a philosophy which aims to prevent rather than cure pollution. This document is published by the Agenzia Nazionale per la Protezione dell'Ambiente (Italian National Environmental Protection Agency) in cooperation with the Technology, Industry and Economics division of UNEP (Paris) and Ecomed (Rome). It presents 16 case studies of cleaner production in nine different countries. These complete or update the 3 presentations which were in the first report published in 1995. Furthermore, a chapter detailing useful contacts and expertise on cleaner production processes will no doubt be of great help to anyone promoting or wanting to use these methods in the Mediterranean. The national activities of various riparian states are reviewed, giving numerous practical examples of companies which can rightly claim to be «success stories», their business name and address being provided for anyone wishing to tap their expertise. There is, for example, the case of a Tunisian company which has changed its olive oil extraction process, achieving much lower levels of hexane, and therefore also of polluting wastewater; or similarly the Egyptian yeast and detergent factory which has cut down on water, energy, chemicals and raw materials by installing a computerised control panel. Each case is detailed in English, but is also well summarised in Italian and French. (80 pages, in English, French, and Italian, forward by Jacqueline Aloisi de Larderel, Director of UNEP's TIE division, and Gianni Squitieri, Director of Ecomed, introduction by Walter Ganapini, President of the ANPA. For copies contact ANPA, Via Vitaliano Brancati 48, 00144 Rome, Italy, e-mail: cantoni@anpa.it; or UNEP-TIE, 39-43 quai André Citroën, 75730 Paris cedex 15, Paris, France, e-mail: unepie@unep.fr; or Ecomed, Via di Porta Lavernale 26, 00153 Rome, Italy, e-mail: ecomedit@inroma.roma.it).

CP News: In a sense this bulletin links with the preceding work on a more everyday basis, since it is published by the Regional Activity Centre for Cleaner Production (CP/RAC, Barcelona, Spain) and its national focal points. Each four page issue provides a brief overview of clean production activities in the Mediterranean. Thus, in issue no.5 which was published in December 1999, the reader will find information on projects relating to cleaner production in Croatia, a meeting of experts in Spain, «Environment Friendly New Industrial Cities» in Egypt, and an eco-efficiency workshop held in Barcelona. In his editorial the Director of the Centre, Victor Macià, recalls that preventing pollution at the different stages of the industrial production process means adding value, which consequently implies competitiveness and success. The CP/RAC also publishes a

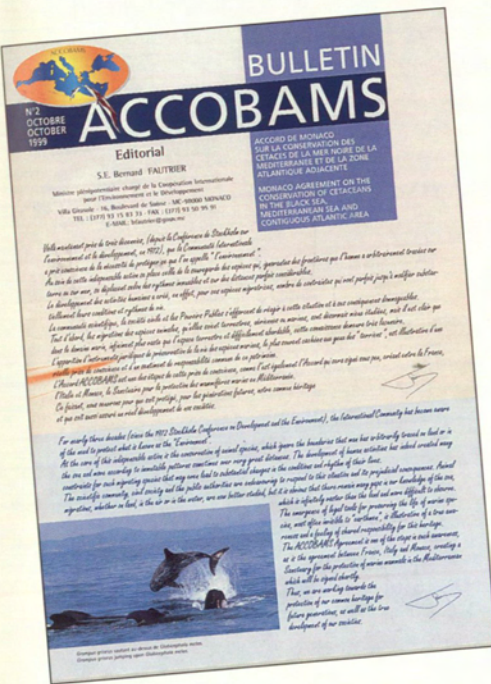


«Medclean» series of case studies which illustrate the concept of cleaner production (each issue of CP News incorporates both the English and the French text: CP/RAC, Trav. De Gracia 56, 108006 Barcelona, Spain; e-mail: cleanpro@cipn.es).

ACCOBAMS Bulletin: Published by the interim Secretariat for the Monaco Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean sea and Contiguous Atlantic Area, this bulletin (in English and French) opens its pages in this its second issue from October 1999 to various excellent contributions from around the Mediterranean covering the legal aspects of the Agreement, human-cetacean interaction, the protection of habitats, research and monitoring, and links with other

UNEP/UNCHS: «The Kosovo Conflict: Consequences for the Environment and Human Settlements». Even before the Kosovo conflict had ended a special team for the Balkans (Balkans Task Force or BTF) had been set up under the aegis of the United Nations Environment Programme and the United Nations Centre for Human Settlements, this in the light of the alarming reports on serious damage to the environment. The team called on international experts from several countries. The BTF was led by Pekka Haavisto, former Finnish Minister for the Environment. In keeping with the new objectives assigned to it by the Governing Council at its 20th Session in 1999, UNEP must be in a position to respond when the need arises by providing relevant neutral scientific assessments on questions such as natural disasters, or the environmental problems caused by human activity. This report fits into the new context and is published following field missions to investigate the effects of the conflict and the air strikes: Four environmental «hot spots» were located in four industrial towns of Serbia-Pancevo, Kragujevac, Novi Sad and Bor-which, according to the report's conclusions, need urgent action to ensure the safety of the environment and the clean-up of these areas. As for pollution of the Danube, the experts believe that it is difficult to assess the role of the recent conflict, since the pollution dates back to the 60s with problems building up over the years. Finally, for weapons dumped in the Adriatic by Nato planes on their way back to base in Italy, the BTF was able to do no more than simply record the information it was given on the location of most of the bombs jettisoned (93), and then destroyed in controlled explosions. As for weapons containing depleted uranium, since it proved impossible to obtain confirmation of their use the BTF recommends that investigations should simply go on, with any material found being safely stored, and the health precautions required in such circumstances being taken. It should be noted that in late March 2000 UNEP indicated that it had received information from NATO on the use of such weapons, and was undertaking further missions to determine

their impact. The conservation of biodiversity in the whole of the area affected by the conflict would seem to be suffering as a result of the destruction of the institutional infrastructure on which it was based. The report contains a chronological run-down of the conflict, a detailed presentation of the observations recorded at each site, the state of human settlements in Kosovo, and legal considerations on the effects of the conflict (particularly in terms of certain provisions in the Bale Convention on the trans-boundary movement of hazardous waste). Mr. Klaus Töpfer, Executive Director of UNEP, writes in the foreword: «The results and recommendations of the BTF make interesting reading. They highlight the linkage between environmental pollution and humanitarian assistance. This report also demonstrates the need for environmental and human settlement planning in conflict management. I am convinced that such a neutral, objective and scientific assessment of the real situation on the ground in a post-conflict situation is essential. This approach provides a much-needed and reliable source of information to the peoples affected. It also provides a management tool for the international community as an integrated part of the needs assessment requirements in the overall emergency humanitarian effort in war-torn areas». This report, the first of its kind from a major United Nations organisation as well as the discussions it has provoked confer a degree of topicality to the theme of environmental protection in times of armed conflict (*further reading: The Environmental Consequences of War: Legal, Economic and Scientific Perspectives*, by Jay E. Austin and Carl E. Bruch eds., Cambridge University Press, 2000; for copies of the UNEP/UNCHS report: SMI Limited, P.O. Box 119, Stevenage, Hertfordshire SG1 4TP, UK, Fax: +44 1438 748844, e-mail: customerservices@earthprint.demon.co.uk). «*Marine Specially Protected Areas, The General Aspects and the Mediterranean Regional System*», published under the guidance of Tullio Scovazzi. This book is the outcome of research projects funded by the Consiglio Nazionale delle Ricerche (Italian National Research Council) and by the Italian Ministry for



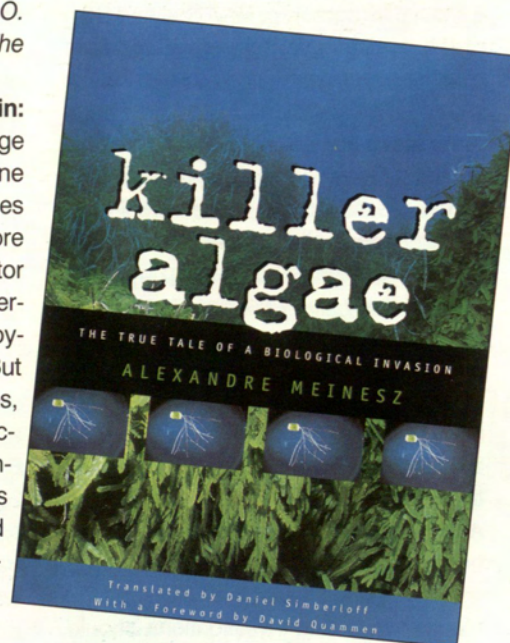
conventions on marine mammals (such as ASCOBANS/Baltic and Bern). An article on Whale Watching by G. Lauriano (ICRAM, Rome) and another by C. Rais (CITE, Tunisia) on the following of strandings introduce a wide audience to two questions which are essential to the survival of marine mammal species. This is a highly interesting bulletin which manages to combine sound scientific work with an attractive lay-out, quality articles and the desire to reach a broader public in a sensitive area of the conservation of biodiversity. It addresses first and foremost all those organisations and NGOs working to protect our Mediterranean natural heritage (Accobams Bulletin, «Villa Girasole», 16 Bd de Suisse, 98000 Monaco, fax (+377) 93 50 95 91; e-mail: mcvan-klaveren@gouv.mc).

Scientific Research. It provides a very full study for each country of the specially protected areas established in the Mediterranean, and regional cooperation in this field and in the area of fisheries (this sector being closely tied in with the sustainable development of marine areas). Tullio Scovazzi is a professor of international law at Milan University, and as the Italian representative he was involved in the revision of the new Barcelona instruments in 1995. No-one was better qualified than he to take on this publication in which he has put his name to seven of the eight chapters. He provides an in-depth study of the national and international legal aspects of protected areas and the restraints on navigation in these areas. Part two incorporates the texts of the main Mediterranean legal instruments, from the Protocols to the Barcelona Convention to the RAMOGE and ACCOBAMS agreements, and provides a series of maps of the Italian marine protected areas (280 pages, in English- with some original French legal texts-, Editions Kluwe Law International, International Environmental Law and Policy Series, volume 52, P.O. Box 322, 3300 AH Dordrecht, The Netherlands).

Espana: un turismo sostenible/Spain: a sustainable tourism. With an average 43 million visitors per year, Spain is one of the world's leading tourist countries and quickly made its mark as such more than 30 years ago. The tourist sector represents 10% of its GOP and generates one million jobs, providing employment for 8% of the active population. But as in the other Mediterranean countries, there is also a down-side to this success, with undesirable effects in the environmental and cultural fields. This document, which is jointly published by the Spanish ministries of the economy and of tourism, sketches out the main ideas for putting tourism back on a sustainable track: a scenario for the development of the sector, the integrated planning of mature, urban and emerging destinations within the social and territorial ecosystem, protected areas, environmental tourist management, information and raising public awareness. Like other countries in the basin

Spain is exploring the avenues of alternative tourism which would respect its exceptionally rich natural and cultural heritage. She has already built up some precious experience in this field- particularly in the Balearic Islands where draconian rehabilitation measures have been adopted- and it is a well-known fact that as co-manager of the thematic group on sustainable tourism she was actively involved in drafting the recommendations and proposals for action of the Mediterranean Commission for Sustainable Development (97 pages, in Spanish and English, Centro de Publicaciones y Documentación, Ministerio de Medio Ambiente, Plaza San Juan de la Cruz, 28071 Madrid, fax: 91 5976186, 1999).

Killer Algae, by Alexandre Meinesz. This is the updated and fleshed out American version of a book which came out in France in 1997. It also includes a report from the workshop organised in Heraklion (Crete) in March 1998 by MAP, the quality of which is underlined by the author, the Leavenworth (Washington, USA) meeting in



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on marine pests, as well as recent genetic studies which have proven the aquarium origin of *Caulerpa taxifolia*, thus putting an end- at least on this point- to a controversy which had been raging for years. Because obviously this book is wholly dedicated to the invasive alga

which made its appearance in 1984. Professor of biology at Nice University's Laboratoire du Littoral Marin (France) and president of the Provence-Alpes-Côte d'Azur environmental commission, Alexandre Meinesz is the first of the «alarmists», in other words the scientists who, when the alga was first spotted in the Mediterranean, insisted that the public authorities in the countries concerned- France, Italy, Spain and Croatia- take steps to eradicate it or at least to control its spread, due to the threat to the marine ecosystem. A large part of the book is taken up by a detailed account of the controversy which moved in fits and starts. Initially scientific, it quickly developed into a political and media issue. These ins and outs apart, the author also draws three conclusions from the «Caulerpa affair». Firstly, that in the absence of ethics and critical scientific reviews, the door is open to the worst sorts of exploitation of new modes of disseminating knowledge. And when decision takers take this as a pretext not to react to an obvious threat, appeals to the media- and thereby to public opinion- are sometimes indispensable, with all the risks of disinformation and twisting of facts which that entails. There is a real dilemma here for the scientist, which has to be carefully weighed up. Secondly, certain biological disciplines such as botany and zoology have been in decline over the past twenty years to the benefit of the chemistry of life- a future source of profit and therefore favoured by sponsors. This reductionist form of biology won through at the very moment when the capital notion of biodiversity emerged. Which prompts the third question asked by the author: how to manage and protect biodiversity at a point when entire areas of knowledge are in the process of decline? One of the merits of this book is that it enters a thinking process based on these three questions, a process which will lie at the very heart of the «risk society»- and therefore the society based on «precaution»- into which we have already moved in many other fields (translated by Daniel Simberloff, foreword by David Quammen, The University of Chicago Press, Chicago 60637, 1999).