

PROPOSED PRIORITY ACTIONS FOR THE IMPLEMENTATION OF THE ACTION PLAN FOR THE CONSERVATION OF MEDITERRANEAN MARINE TURTLES

INTRODUCTION

The Contracting Parties to the Barcelona Convention¹ adopted in 1989 an Action Plan for the Conservation of Mediterranean Marine Turtles. The Meeting of Experts on the Implementation of the Action Plan for the Conservation of Mediterranean Marine Turtles (Arta, Greece, 27-29 October 1998) produced a revised version of the Action Plan. The same meeting suggested the convening of a further meeting aimed at producing a list of recommended priorities to be submitted to the next meeting of the Parties. The present meeting was therefore convened to this purpose.

This document was prepared by the Regional Activity Centre for Specially Protected Areas (SPA/RAC) with a view to assist the meeting in the identification of priorities in the further implementation of the Action Plan. The recommended priorities focus on action, rather than on policy, this latter being considered already addressed by the action plan itself.

The proposed priorities have been identified on the basis of a comparative analysis of the following main reports:

- Report of the Meeting of Experts on the implementation of the Action Plan for the Conservation of Mediterranean Marine Turtles adopted within MAP (Arta, 27-29 October 1998), Doc. UNEP(OCA)/MED WG.145/4;
- Review and analysis of the available knowledge of marine turtle nesting and population dynamics in the Mediterranean, Doc. UNEP(OCA)/MED WG.145/Inf.3 (September 1998);
- Interaction of marine turtles with fisheries in the Mediterranean, Doc. UNEP(OCA)/MED WG.145/Inf.4 (September 1998);
- Report of the Meeting of the Group of Experts on the conservation of Amphibians and Reptiles (Thessaloniki, Greece, 28-31 May 1998), Doc. T-PVS(98)28;
- Marine turtle conservation management in the Mediterranean - Recommendations for a new approach (published in October 1998 by WWF Mediterranean Programme).

The proposed priority actions appear in *italic* Font and on grey background in the text. Most of them are followed by a paragraph which explains the rationale on which the proposal is based.

A first section of the document proposes priority actions expected to be undertaken at regional and/or subregional level. Two of the proposed actions are actually expected to be implemented at a national and/or local level; however they are addressed to nearly all Mediterranean countries. Their inclusion in this section is aimed at avoiding their boring repetitions in each country chapter, and can be further justified by the fact that national actions are expected to be triggered and assisted by appropriate regional

¹ Convention for the Protection of the Mediterranean Sea against Pollution

initiatives. Proposals are presented according to the subdivision in chapters of the revised Action Plan.

The second section includes proposals of priority actions addressed to individual countries. Countries differ greatly one from the other in terms of number of proposed actions and degree of detail: this reflects differences in the importance (and therefore in the responsibility) of the various countries with respect to the conservation of turtles, as well as a difference in the amount and quality of information available.

RECOMMENDED ACTIONS AT THE REGIONAL AND SUB-REGIONAL LEVELS

A. PROTECTION AND MANAGEMENT

A.1 Legislation

Elaborate guidelines for the design of legislation and regulations dealing with the conservation and management of marine turtle populations and their habitats

Several Mediterranean countries still have to enact legislation for the conservation and management of marine turtle populations and their habitats, while others should improve the existing one. The elaboration of guidelines to this purpose could trigger and assist such processes.

A.2 Protection and Management of Critical Habitats

Known marine turtle critical habitats lay in general within national boundaries, and their protection and management is, therefore, the responsibility of the individual States. Initiatives at the regional or sub-regional (multinational) level could be envisaged in the future for feeding and overwintering areas and migration routes stretching in the high seas, once such areas will be more clearly identified.

A.3 Reducing Mortality at Sea and Eliminating Local Consumption and Use

Develop large-scale education and training programmes for fishermen on techniques for correctly hauling, handling, releasing and recording incidentally caught turtles.

Marine turtles significantly interact with the fisheries of nearly all Mediterranean countries. Awareness, education and training of fishermen are considered powerful tools to reduce fishery-related mortality. The development of such programmes is therefore to be recommended in the great majority of Mediterranean riparian countries. While such programmes should be implemented at the national and local levels, however their establishment could be triggered and assisted by an appropriate regional initiative (see § A.5).

A.4 Establishment of a Mediterranean Network of Marine and Coastal Protected Areas for Marine Turtles

Prepare an inventory of nesting areas all around the Mediterranean, which should subsequently be regularly updated. Compile and synthesize the information in an Atlas of marine turtles nesting beaches in the Mediterranean.

This action corresponds to a specific provision of the action plan. The greatest part of the Mediterranean coast have been surveyed for marine turtles nesting, available data and information allow therefore the preparation of a rather comprehensive inventory. The preparation of an Atlas synthesizing the information in a cartographic form would constitute a useful complement to the inventory.

Establish a network of managed and monitored nesting sites, aimed at facilitating the exchange of information and experience and the coordination of research and monitoring programmes.

Several nesting sites benefit at present by active management and regular monitoring. The benefits of regular exchanges and effective coordination between the responsible persons, organizations and institutions is evident.

A.5 Information, Education and Training

Develop systematic public awareness projects, structured in such a way that the objectives and target groups are clearly defined. Some of the main target groups involve local residents and tourists at nesting sites, local and national authorities, schoolchildren, fishermen and recreational boat owners.

There is consensus on the important of public awareness projects as conservation instrument. The development of such programmes is therefore to be recommended to all Mediterranean riparian countries. Indeed, projects are already underway in several countries, where anyway deserve to be strengthened. While such programmes should be implemented at the national and local levels, however their establishment could be triggered and assisted by appropriate regional initiatives.

Prepare training and information/awareness modules and tools (e.g. manuals) addressed to fishermen aimed at reducing the mortality of marine turtles incidentally caught in fishing gear.

The usefulness of awareness, education and training programmes addressed to fishermen for reducing fishery-related mortality has already been discussed (see § A.3). The initiative proposed here above, undertaken at the regional level, is expected to facilitate the development of such programmes at the national and local levels.

B. SCIENTIFIC RESEARCH AND MONITORING

B.1 Scientific Research

Undertake co-ordinated research programmes aimed at assessing the interaction between turtles and Mediterranean fisheries, giving priority to those situations where

fishing activities interact with the largest size classes and/or in areas with a high density of turtles, and where the fishing activity is greater.

Available data on Mediterranean fisheries-sea turtle interactions are still either scarce and uneven. While research on the impact of the different fisheries is primary a responsibility of the individual countries they belong to (see section on priorities at the national level), however the undertaking of joint research project is to be recommended particularly in those situations where the same sea turtle population interacts with different fisheries. Besides facilitating the gathering and subsequent comparison and analysis of data, co-ordination in the research is expected to facilitate the subsequent adoption of harmonized management measures by the countries concerned.

Develop models to monitor population responses to management policies.

Population models are important tools for understanding populations dynamics; guiding demographic research and conservation management policy.

B.2 Monitoring

Establish a coordinated long-term monitoring programme among selected sites in different areas and countries. The programme should follow standardized methods of research and estimation of the demographic parameters. Saturation tagging should be undertaken where feasible.

Mediterranean populations of marine turtles likely consist of different, functionally independent sub-populations, i.e. management units. A Mediterranean policy should be based on the monitoring of a representative sample of those units. Standardization of methods is necessary to allow the comparison of data and the analysis of population trends.

C. COORDINATION

Convene a pan-Mediterranean meeting on marine turtles.

The proposal was put forward at the meeting in experts held in Arta, and was received with favour by the participants.

Organize a meeting, bringing together fishermen's organizations and stakeholders in the marine environment, to discuss fishing techniques and their impact and the possibilities of improving such techniques.

Most initiatives aimed at reducing the impact of fisheries on marine turtles imply the participation in the negotiations and decision making of the persons in charge with fishing activities, at national and international levels. However, their involvement have been until now very limited. It is urgent to establish a constructive dialogue between the representatives of the conservation and the fishing sectors.

Establish a directory of sea turtle specialists working in the Mediterranean

Such a directory should be aimed at facilitating the contacts, and the consequent exchange of information and experience among researchers and conservationists.

RECOMMENDED ACTIONS BY COUNTRY

Albania

Grant full legal protection to marine turtles.

According to available information, marine turtles are still unprotected in Albania.

Undertake a survey aimed at assessing the occurrence of marine turtle nesting on Albanian coasts.

Albanian coasts are among the few remaining areas in the Mediterranean which have still to be surveyed for marine turtle nesting. Proximity to known important nesting sites (Greek Ionian islands) and occasional reports of marine turtle tracks on Albanian beaches during the nesting season suggest that marine turtle nesting in Albania should be considered possible.

Algeria

Speed up procedures for the enacting of legal texts granting protection to marine turtles.

Marine turtles are still unprotected in Algeria. However, relevant legal texts have already been drafted and deposited at the competent administrations.

Establish a monitoring programme on by-catches of marine turtles by Algerian fisheries.

The amount of incidental catches of marine turtles is estimated at 250-300 specimens per year, based on inquiries at fishing harbours. Such figures, and the proximity of Algerian waters to sea areas where a high incidence of by-catches of marine turtles has been reported, suggest that a not negligible impact of Algerian fisheries on turtles in the Western Mediterranean should be considered possible.

Croatia

Develop research and monitoring on loggerheads in Croatian waters, focused on the following main topics:

- *overwintering and feeding areas and ecology,*
- *migration patterns, population structure and dynamics ;*
- *impact of fisheries.*

Available data, although limited and non-conclusive, indicates the possibility that the Adriatic is an overwintering and feeding area for loggerheads belonging to the populations nesting on Greek coasts. Yearly incidental catches of loggerheads by the Croatian fishing fleet was estimated at 2,500 specimens, mostly by bottom trawlers during winter (Nov.- May). The role of shallow water areas along Croatian coasts as overwintering and feeding areas for Mediterranean loggerhead nesting populations, and the actual and potential impact of fishing activities, deserve to be clarified.

Undertake surveys aimed at assessing the occurrence of marine turtle nesting on Mljet island sandy beaches

Sporadic observations of sea turtle tracks have been reported by locals on the beaches of Sapunara and Blace bays (Mljet Island). Anecdotal information exists on the domestic consumption of turtle eggs in the past in the same island.

Strengthen the legal protection of the sandy habitats of Sapunara and Blace Bays by moving them from the present protected landscape category to the protected botanical and zoological reserve category.

Besides their possible value as loggerhead nesting grounds, the above-mentioned beaches constitute almost unique examples of those habitats along Croatian coasts.

Establish bottom trawling restrictions in northern Croatian waters throughout the winter in areas where the sea is less than 50 m deep.

Pending accurate identification of feeding and overwintering areas and assessment of the impact of fisheries, a precautionary approach calls for measures aimed at reducing incidental catches. Currently available data indicates that most by-catches are made by bottom trawlers operating on bottoms between 20 and 50 m in depth, during the winter months (Nov.- May).

Cyprus

Ensure the long-term conservation of nesting beaches by including their protection and adequate management in all coastal management plans, notably in relation to tourist development, and by including the most important nesting beaches into a long-term monitoring and protection plan.

Endorse the management plan for the Akamas peninsula prepared within the METAP project.

The Lara Toxeftra reserve provides legal protection for some of the most important nesting beaches. However, the surrounding area continues to be the object of proposals for tourist development, which if realized might jeopardize the suitability of those beaches as nesting sites. Other important nesting beaches (e.g. Polis Limni) are still unprotected, and are currently threatened by tourist development projects.

Pursue the project on the hatching and captive rearing of juvenile stages (head-starting) of green turtles, and assess its results in terms of the contribution made to the wild population.

Head-starting is a technique whose efficacy has still to be proven, but which might be of considerable conservation interest, particularly in the most critical situations. Its results however can only be assessed over long periods. Cyprus is at present the only Mediterranean country where head-starting experiments have been carried out over the

last few years. These experiments deserve to be continued with a view to assessing the conservation interest of this technique.

Egypt

Reduce substantially, and finally eliminate, intentional mortality by:

- enforcing existing legislation protecting marine turtles and promulgating new legal texts where appropriate;
- establishing well-targeted environmental education and public awareness programmes for key Mediterranean coastal communities where sea turtle consumption still takes place.

Numerous recent reports testify to the trading and killing of sea turtles in Egypt, mainly for local consumption and use. Egypt already possesses legal texts on the protection of marine turtles, which could be complemented by other specific texts where appropriate. Sea turtle consumption seems to be an old tradition in Egypt. Acceptance by local populations of conservation measures should be facilitated by appropriate information and public awareness campaigns.

Create and enforce specific regulations for the reduction of by-catch and fishery-related mortality in bottom trawl and small coastal fisheries in the benthic feeding grounds along the coasts of the Nile delta.

There is evidence that the sea area off the Nile delta is a major feeding area for marine turtles, in particular *C. mydas*.

Identify and grant adequate protection and management to the most important nesting beaches along the Mediterranean coast

A first survey of the coast between Alexandria and Sallum was carried out in 1993. A project is now under way which includes the survey of the coast between Rafah and Sallum. The project is expected to collect the data and information necessary for the identification of nesting beaches deserving protection and the definition of protection and management measures.

France

Pursue the development of an observers' network along the Mediterranean coast of France

A network of observers is currently being established within the implementation of the National Action Plan For Marine Turtles.

Assess the impact of fishing activities, with special attention to drifting long-lines and drift-nets.

The number of turtles incidentally killed by fishing gear has been roughly estimated as

between several tens and several hundreds per year. Data is lacking particularly concerning the impact of drifting long-lines and drift-nets.

Greece

Finalize the process of setting up the National Marine Park of Zakynthos and its managing body, and monitor the enforcement of the relevant conservation and management measures.

The nesting beaches of Zakynthos hold the most important rookery of loggerheads in the Mediterranean. Their value as nesting grounds is however threatened by activities related to the area's tourist development, despite already existing restrictions. The establishment of a National Marine Park, which should ensure the long-term protection and management of the area, has been envisaged for several years. The process should be now in its final stage, but is still to be finalized.

Grant adequate protection and management to, and where appropriate restore, other important nesting areas, in particular the following: Bay of Kyparissia, Lakonikos Bay, Rethymnon, Bay of Chania, Bay of Messara.

The nesting beaches of the above-mentioned areas are included on the national list proposed for Natura 2000 European Network. Management plans have been, or are in the process of being, elaborated, and are in some cases already being implemented, mainly by NGOs. These initiatives need an adequate legal support.

Assess sea turtle mortality, intentional and unintentional, caused by bottom trawl, coastal fisheries and powered pleasure boats, and elaborate relevant conservation measures.

Important by-catches are suspected to be made by trawl fisheries working on the supposed benthic feeding grounds along the coasts of Peloponnese. Coastal fishing (using potentially harmful gear such as gill/trammel nets and bottom long-lines) is widespread in Greece (more than 17,000 vessels, without taking into account several thousand sports fishermen). In addition to incidental mortality, intentional killing or injury by coastal fishermen of incidentally caught turtles is suspected to be frequent. Collision with powered pleasure boats is a significant cause of sea turtle mortality near nesting areas with intensive tourist development.

Develop research programmes aimed at identifying feeding and/or overwintering areas along Greek coasts, and assessing the origins of the stocks.

Lakonikos Bay (southern Peloponnese) is considered a possible feeding and/or overwintering area for immature loggerheads and green turtles of unknown origin. The Northern Aegean is another possible feeding/overwintering area which needs further investigation.

Italy

Assess the impact of Italian fisheries on marine turtle populations, particularly in the Adriatic and Ionian seas, and elaborate relevant conservation measures.

Presently available data on by-catches, and the size of Italian fishing fleets, suggest an important impact of Italian fisheries on marine turtle stocks. The Adriatic and Ionian seas are to be considered priority areas for research due to their probable role as feeding/overwintering areas (both Adriatic and Ionian) and the presence of important nesting sites (Greek Ionian coast).

Ensure the protection of the few remaining nesting beaches, having them considered in any possible development plan, and provide a commitment for long-term monitoring.

Limited loggerhead nesting is recorded on beaches of the islands of Lampedusa and Linosa.

Lebanon

Enact legislation banning the consumption and sale of products derived from sea turtles.

According to available information, legislation in Lebanon has no provisions in this regard.

Undertake a survey aimed at assessing sea turtle nesting on the coast of Lebanon.

The coast of Lebanon is among the few remaining areas in the Mediterranean for which marine turtle rookeries have still to be surveyed. Nesting of loggerheads is known to occur in the Palm Island Reserve. Nesting on beaches on the mainland has occasionally been reported.

Establish a programme for the long-term monitoring of sea turtle nesting in the Palm Island Reserve.

Libya

Further study the dimension of the nesting populations and nesting distribution along the coasts.

There is evidence that Libya might hold one of the most important loggerhead rookeries in the Mediterranean. Presently available data, however, based on single surveys of only part of the over 1,000 km. of sandy shoreline, does not allow accurate estimations to be made of the nesting populations' size and of the distribution of nesting activity along the coast.

Identify the most valuable nesting beaches, grant them adequate long-term protection and management and include them in a long-term monitoring programme. The following beaches are already identified as deserving special attention: Eastern beach of Ain-Algazala, Aboulfraes, Kouf National Park, 20 km west of Sirte.

While several valuable beaches have already been identified, others could be discovered in areas still to be prospected. Although sandy shores do not seem in general to be submitted at present to important pressure from human activities, however, important nesting areas deserve to be protected in advance against impacts from future development. Long-term monitoring of the beaches is essential to provide the basic data for the management of the nesting populations, and should be combined with conservation techniques aimed at increasing the number of offspring (e.g. protection of nests against predation; translocation of nests; etc.).

Assess the impact of coastal fisheries on marine turtles.

There is virtually no data on by-catches and the related mortality of marine turtles in Libyan fisheries. The widespread use of gill nets and long lines by coastal fisheries could however cause important mortality.

Morocco

Grant full legal protection to marine turtles.

According to the available information, marine turtles are still unprotected in Morocco.

Establish a monitoring programme on by-catches of marine turtles by Moroccan fisheries.

There is little data on incidental catches of marine turtles by Moroccan fisheries, particularly in the Mediterranean Sea. However, the high concentration of marine turtles and the important by-catches by other fisheries recorded in the Alboran Sea suggest that there could be a not negligible impact of Moroccan fisheries on turtles in the Western Mediterranean.

Spain

Assess the impact of Spanish fisheries on the marine turtle populations frequenting the Alboran and the Balearic seas. Assess the effects on marine turtle by-catches of existing regulations for surface long-line fisheries.

Available data indicates that the Alboran and Balearic seas are likely to be pelagic feeding grounds for immature loggerheads belonging to stocks of both Atlantic and Mediterranean origin. A certain amount of data is already available indicating important by-catches mainly by surface long-line fisheries. The actual impact of this and other gear however still has to be carefully assessed. Several regulations have recently been issued with the main aim of regulating tuna fisheries' activities which might have an

effect on marine turtle incidental capture; their actual effectiveness in this respect deserves to be evaluated.

Syria

Undertake a survey aimed at assessing sea turtle nesting on the coast of Syria.

Marine turtle nesting on Syrian coasts have been reported by several authors. A detailed survey of the whole coast aimed at identifying main nesting areas and the size of the nesting population has still to be undertaken.

Tunisia

Develop research and monitoring programmes aimed at:

- *assessing by-catches and related mortality by fisheries, particularly in the Gulf of Gabes;*
- *assessing the value of the Gulf of Gabes as a feeding/overwintering area.*

A certain amount of data exists on incidental catches of marine turtles by Tunisian fisheries. This data deserves to be completed by further research and monitoring in view of an accurate assessment of the fisheries' impact. The Gulf of Gabes is considered a major overwintering and feeding area for loggerheads. The magnitude of the population and the origin of the overwintering turtles deserve to be further studied.

Undertake surveys aimed at identifying possible unknown nesting sites.

Several surveys of Tunisian coasts have been undertaken with a view to assessing marine turtle nesting. Recent occasional reports suggest, however, the possible existence of hitherto unsuspected nesting beaches.

Grant the nesting site on the Kuriat islands adequate protection and management, and include it in a long-term monitoring programme.

Kuriat island is the most important nesting site on Tunisian coasts. It has been the object of a monitoring programme for the last few years.

Turkey

Reconsider tourist investment projects, ongoing or planned, concerning important marine turtle nesting beaches or their surroundings. Ensure that an Environmental Impact Assessment (EIA) is made an integral part of tourism and development projects connected with those beaches.

Seventeen major nesting beaches have been identified along Turkish Mediterranean coast. According to recent reports, the value of most of these beaches as nesting grounds is seriously threatened by the tourist development of those areas, in some

case by specific, well identified projects. Regulations concerning EIA need to be modified with a view to make such a process mandatory for all tourist and development projects.

Ensure the most important nesting beaches adequate legal protected status. Monitor the enforcement of relevant regulations at the protected sites.

Of the 17 major nesting beaches, only 3 have SPA status and 1 is a Natural SIT site. At protected sites, violations of existing regulations are reported, in particular with regard to illegal building and illegal sand extraction.

Regulate activities related to tourist use affecting the value as nesting ground of important nesting beaches, and in particular: the use of speed boats and jet-skis; night visiting of beaches; riding and driving on beaches.

The above-mentioned leisure activities are reported to be common practice, without any control or regulation, at several important nesting sites.

Take all appropriate measures to prevent illegal sand extraction from the important nesting beaches.

Illegal sand extraction have been identified as a major cause of beach degradation and erosion at several sites, and notably Anamur, Kazanlı and Samandag, the last two being major nesting sites for *C. mydas*.

Create and enforce specific regulations for the reduction of by-catch and fishery-related mortality in bottom trawl and small coastal fisheries in the benthic feeding grounds of the Bay of Iskenderun.

There is evidence that the Bay of Iskenderun is a major benthic feeding area for marine turtles, in particular for *C. mydas*. In addition, the coast of the bay includes the single most important nesting beach of *C. mydas* in the Mediterranean. Concerning possible measures, there have been proposals for the use of Turtle Excluder Device (TED) by bottom trawlers. To this purpose a pilot study has been envisaged.