



# Convention on the Conservation of Migratory Species of Wild Animals (CMS)

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### **Recommendations on Future CMS Activities for Marine Turtle Conservation**

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#### **Summary**

A rapid evaluation was conducted on the status of marine turtles, as well as various activities related to the conservation of these migratory animals and their habitats, with special reference to the Convention on the Conservation of Migratory Species of Wild Animals (CMS). Far more Parties are relevant to this issue than has been frequently assumed. Information organised by ocean basins, and not by political realms, shows that some Parties – formerly thought to be insignificant – are critical to marine turtle conservation in several regions. Being long-lived animals, slow to mature, depending on diverse ecosystems (including terrestrial, coastal, benthic and epipelagic), and dispersing and migrating over vast areas, there are tremendous challenges in conserving marine turtles. They are the paradigm “flagship species”, and a clear indicator of the ability of modern States to collaborate in the conservation of shared resources.

In general, marine turtle populations have been greatly depleted, and the ecosystems on which they depend have been seriously degraded by coastal development, pollution, extractive enterprises and modern fishing operations. Although most marine turtle work is done on nesting beaches, the greatest challenges in both investigation and conservation are at sea. Many Parties to the CMS have conservation activities and legislation relevant to marine turtles, but there are a variety of general deficiencies.

There is no question whatsoever that the conservation of marine turtles and their habitats is fully contemplated by the Convention; however, administrative structures could be fortified. The Parties and Secretariat of the CMS can – and should – play leading roles in developing integrated programmes for these “ambassadors of the oceans”, and thereby promote global conservation of shared resources.

Effective conservation programmes need to: acquire accurate information, on both environmental and social factors; disseminate and evaluate this information; motivate decision-makers and share-holders to act appropriately; and integrate diverse parts of society in various activities, at differing levels from local to global. Based on this conceptual framework, recommendations for future activities of the CMS focus on nine basic themes:

### Development of human resources and increase in research capacity

Provide direct support as well as catalyse and fortify networks, bilateral and multilateral interchanges using a variety of teaching and instructional mechanisms to make diverse training opportunities available to people at different professional and social levels.

### Basic research and assessments

Promote well-directed information-gathering activities for both biological and social issues, involving the Parties, building partnerships with other organisations, as well as producing and distributing research guides and findings.

### Protected areas and integrated conservation activities

Promote an integrated approach to habitat conservation by linking activities using various mechanisms associated with other conservation and management activities to existing CMS Agreements, providing technical and legal support, and building collaboration at national and multinational levels.

### Environmental education

Encourage Member States to greater action, in order to explain the interactions and dependencies between society and the environment, especially to the more powerful ranks of societies, by developing partnerships with other organisations and supporting workshops and activities designed to promote the "multiplier effect" with educators.

### Community participation

Ensure that the principle civilian participation is embraced in all other conservation activities, as well as promote and support specific workshops and interchanges focused on developing, enhancing and evaluating community participation activities.

### Legislation

Promote the up-dating of national laws so that they are integrated with other environmental and social priorities, both at national and regional levels, by nurturing partnerships between specialists in environmental law and competent national authorities, independent of whether or not a State is a Party to the CMS.

### International instruments

Exhort the relevant Parties to ratify the Inter-American Convention for the Protection and Conservation of Sea Turtles, as well as the Agreement for Conservation of Sea Turtles on the Caribbean Coasts of Panama, Costa Rica and Nicaragua.

### CMS Agreements

Develop an Agreement on marine turtles and their habitats before the end of 1998.

### Role of the CMS Secretariat

Execute certain functions (apart from those entailed in the above recommendations) to insure that Member States appreciate their obligations to the Convention, and facilitate the fulfilment of these obligations.

## Introduction

1. There are several reasons why conservation measures need to be implemented and co-ordinated on a regional basis. As the economies and societies of the world become ever more inter-linked through the processes of "modernisation" and "globalisation", actions taken (or not taken) at any place in the world may impact – sometimes immediately – many other societies and ecosystems. When species that move over vast areas of the planet are involved, the need for regional – if not global – co-operation becomes obvious: no single nation can conserve these animals without the full co-operation of other countries which form part of the geographic range. Marine turtles not only disperse and migrate over tremendous areas, but they require decades to mature, potentially live and reproduce for many more decades, and depend on a wide diversity of coastal and marine environments.

2. In many ways, marine turtles serve as index species, a barometer of how successful modern societies have been in co-operating toward the protection of common resource bases. If animals with life cycles as complex as those of marine turtles can be conserved in a rational, collaborative manner, there will be hope that other complex challenges to globalised, modern societies can be adequately resolved and managed.

3. The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is a unique international instrument, not only for its subject matter, but also for its structure. As in other international accords and treaties, States become Parties to CMS by formally ratifying or acceding to the Convention. In addition, States may join Agreements, or Memoranda of Understanding (MOU), developed under the Convention's auspices for particular species or taxonomic groups. The possibility to participate in CMS Agreements or MOUs extends to any State interested in collaborating in the solution of common conservation problems, independently of whether or not the State is a member of the parent Convention. At present, there are five Agreements and two Memoranda of Understanding within the aegis of CMS: there are 52 Parties to the CMS, while 80 States are included in the wide range of Agreements and MOUs. Although none of these Agreements or MOUs directly involves marine turtles, the expertise gained in their development and implementation is transferable to other contexts.

4. CMS is uniquely designed not only to catalyse concerted conservation actions for migratory species threatened with extinction, but also to foster a co-operative, co-ordinated approach to marine turtle conservation on a regional or even broader level. In this regard, CMS is an essential complement to the Convention on International Trade in Endangered Species (CITES), which is necessarily limited to aspects of international commerce, and lacks the legal means to promote well integrated, regional collaboration or indeed to regulate harvesting of migratory species within single countries.

5. There is no doubt whatsoever that marine turtles - and their conservation needs - are fully included within the legal terms of the Convention on the Conservation of Migratory Species of Wild Animals. Six of the seven living species of marine turtles are listed in Appendix I of the Convention (only *Natator depressus*, endemic to Australian waters, is not listed). Paragraphs 4 and 5 of Article III are especially pertinent:

"4. Parties that are Range States of a migratory species listed in Appendix I shall endeavour: to conserve, and where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction; to prevent, remove, compensate for or minimize, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species; and to the extent feasible and appropriate, to prevent, reduce or control factors that are endangering or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating, already introduced exotic species."

"5. Parties that are Range States of a migratory species listed in Appendix I shall prohibit the taking of animals belonging to such species. Exceptions may be made to this prohibition only if: the taking is for scientific purposes; the taking is for the purpose of enhancing the propagation or survival of the affected species; the taking is to accommodate the needs of traditional subsistence users of such species; or extraordinary circumstances so require; provided that such exceptions are precise as to content and limited in space and time. Such taking should not operate to the disadvantage of the species."

6. A consolidated, well-directed initiative by CMS to support marine turtle conservation would be invaluable. This would serve not only for the conservation of these endangered species, but also as a model for regional co-operation in the conservation of shared resources in a world ever more complex and inter-linked.

### Background to this report

7. On 20 August 1996, the Deputy Co-ordinator of the CMS Secretariat circulated a letter to the CMS focal point in each of 28 countries, requesting that they provide answers to a comprehensive three-page questionnaire, and send them to Dr. Karen Eckert by 30 September 1996. As of 15 November 1996, reports written specifically in response to the questionnaire had been received from Morocco, Philippines, Saudi Arabia, South Africa and Sri Lanka. In addition, Saudi Arabia supplied a number of additional reports from the National Commission for Wildlife Conservation and Development (NCWCD), and Australia sent documents considered to be relevant to the questionnaire. As additional information from Member States was not forthcoming, and as Dr. Eckert had acquired other commitments, it was mutually agreed in December 1997 that another consultant be asked to undertake a more limited review.

8. In January 1998, questionnaire responses were sent to Dr. J. Frazier, who agreed to dedicate 12 days to producing a synopsis and recommendations, based on these and other information sources which he could obtain quickly. Hence, neither the materials nor the time available were what had originally been intended, so the scope of the present report is necessarily less ambitious than what was first projected. In particular, the originally planned "Review of Implementation in Member States" – an ambitious undertaking under the best of conditions – was possible only as a sketch. Many more details will need to be gathered and synthesised to be able to meet the objectives of the original initiative, and this report is meant as a guide to that end.

### Synopsis of the conservation status of marine turtles, in relation to the CMS

9. A brief synopsis of the conservation status and activities relevant to marine turtles is needed in order to put the recommendations of this report into context. Although the relationships and obligations that Parties have to the CMS are in a political context, the objective of the Convention is to resolve environmental issues as they relate to migratory species. Hence, biological information must be structured in a way meaningful to the ecology of the species involved, not forced into an artificial political organisation, which is relevant at other levels of discussion. Some individual CMS Parties have considerable relevance to marine turtle conservation in more than one ocean basin; and because the environmental, social and political realities are distinct in each of these regions, groupings of States in this report are based on ocean basins – not political entities. Hence, some States are relevant to as many as five, or even six, of the eight regions discussed below. In the following regional lists, the names of CMS Parties appear in bold text, Signatories are in italics (and extra-continental territories of Parties are in parentheses); the order of presentation of States is usually geographic – roughly north to south and east to west. The following eight regional synopses are based on a preliminary attempt to organise basic information on the conservation status of marine turtles in CMS Member States, as shown in Annex I of this document.

#### North-eastern Atlantic:

**Norway, Finland, Sweden, Denmark, Germany, Netherlands, Belgium, United Kingdom, Ireland, France, Spain, Portugal** (including Azores)

10. Five species are recorded (*C. caretta*, *Ch. mydas*, *D. coriacea*, *E. imbricata*, and *L. kempii*); there is no recorded nesting, but there are foraging areas for at least 2 species: *C. caretta* and *D. coriacea*. There are evidently also "migration corridors" for at least these two species; individuals of some species in this region depend on western Atlantic and Caribbean environments during parts of their life cycle. Since nesting occurs outside of European Atlantic waters, the importance of this region to marine turtles has customarily been underestimated or dismissed – today, there is no doubt that a considerable number of *C. caretta* and *D. coriacea* regularly depend on this region for some part of their life cycle. The latter species also seems to depend on south-eastern Atlantic waters. Population trends are unknown because of a paucity of data on

stock composition and distribution, as well as a lack of systematic historic and contemporary information on numbers. With the exception of studies in Azores and France, there has been little systematic work on marine turtles in the north-eastern Atlantic. Nonetheless, the scholarly works of Dr. Leo Brongersma, compiling and synthesising six centuries of observations on marine turtles in European Atlantic waters, are classics in marine turtle biology.

11. Harvest of eggs and nesting females is not relevant in this region, but in Portugal (and Azores) *C. caretta* have been captured at sea. Incidental capture in industrial fisheries has been known to occur in the south of the region for some time, and there is growing evidence that this insidious problem is also consequential in more northerly waters. The absence of information is no proof that there are not fisheries-related risks in other areas. It is likely that marine contamination is a threat in many parts of this region because of the high degree of industrialisation.

12. Although most citizens of the countries of this region do not regard marine turtles as a normal part of their indigenous fauna, they are exposed to high quality educational programs, including "exotic" animals. Hence, many Europeans are likely to be aware of, and sympathetic to, the plight of endangered marine turtles, and they will be enthusiastic about conservation initiatives for these migratory animals.

13. Several of the more southern European States have comprehensive legislation specific to protecting marine turtles. There appear to be no States in the region, critical to marine turtle conservation, that are not Parties to CMS.

#### Central and South-eastern Atlantic:

**Portugal (Madeira), Morocco, Spain (Canary Islands), Senegal, Guinea-Bissau, Guinea, Côte d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon, Democratic Republic of the Congo, and the United Kingdom (Ascension Is. and St. Helena)**

14. Six species are recorded (*C. caretta*, *Ch. mydas*, *D. coriacea*, *E. imbricata*, *L. kempii* and *L. olivacea*). Although *L. kempii* occurs only at the northern extreme of this region, this is one of the few regions in the world where both species of *Lepidochelys* occur. Nesting has been recorded for all species except *L. kempii*; and foraging areas for at least *C. caretta*, *Ch. mydas* and *D. coriacea* are known to occur. There are also migration "corridors" of *C. caretta* and *D. coriacea*, and probably also *L. kempii*. Individual turtles found in this region may occur at some stage in their life cycle in both the north-eastern Atlantic and especially the western Atlantic, where some of the largest nesting populations in the Atlantic Basin occur. While there is every reason to assume that most West African populations have declined, trends are unknown because of a lack of basic information on genetics and population sizes.

15. Harvesting of eggs and nesting females are thought to be major threats throughout the region, and the taking of turtles at sea is also known to occur in the waters of some Parties. With the intensity of fishing, often by foreign fleets, there is growing evidence that incidental capture is an occult, but consequential problem; commercial fishing vessels flying flags of several CMS Parties are especially common. Coastal perturbations, notably on beaches, are also likely to be significant. A major problem is the lack of basic information on both the turtles and their habitats, and an on-going study by Jacques Fretey, commissioned by the CMS, will be instrumental in rectifying this situation. Without a doubt, best known in this region is the migratory population of *Ch. mydas* on Ascension Island, where classic studies have been conducted. By all accounts, the small island of Poilao, Guinea Bissau, also has a major nesting population of *Ch. mydas*.

16. Environmental education related to marine turtles and their habitats, is carried out in some countries of the region. However, given the extreme problems throughout much of western Africa with intense droughts, scarcity of basic resources and burgeoning human populations, community participation in turtle conservation is likely to be minimal. Guinea Bissau may be a notable exception.

17. Legislation, specific to protecting marine turtles and their habitats, exists in most Parties, although enforcement is rarely adequate. Several States, not Parties to CMS, are critical to the conservation of marine turtles, including the Cape Verde Islands, Congo and Angola: in each of these countries there are indications of regionally significant nesting and feeding areas for marine turtles.

Mediterranean: Spain, France, Monaco, Italy, Greece, Israel, Egypt, Tunisia, Morocco

18. Three species are recorded regularly (*C. caretta*, *Ch. mydas* and *D. coriacea*), and *L. kempii* may occur as a vagrant. *C. caretta* and *Ch. mydas* nest, and there are assumed to be foraging areas for all three of the regularly occurring species. Genetic studies indicate that a large proportion of *C. caretta* in the Mediterranean are from stocks that nest in the western Atlantic, showing the need to co-ordinate conservation activities between these distant regions. Preliminary studies indicate that there are large (in Mediterranean terms) nesting populations of *C. caretta* in some North African States. The limited information available indicates that most populations have declined, but systematic data are rare. Information on *Ch. mydas* and *D. coriacea* is particularly scarce, and the estimated numbers nesting annually in all the Mediterranean are no more than 500 of the former.

19. Direct harvests of eggs, nesting females, and turtles at sea are not thought to be significant, with the exception of some Parties from North Africa. Incidental captures in fisheries, however, are known to be widespread and consequential, and thought to be the largest source of mortality in many areas: of known importance are the fisheries of Spain and Morocco. Throughout much of the region coastal development and pollution are important threats, especially to nesting animals. Indeed, marine pollution in the Mediterranean provides one of the worst examples known worldwide. There have been important long-term studies of marine turtles in Greece, a Signatory to CMS, and also Cyprus, not a Party.

20. Model environmental education campaigns have been carried out in Greece, where there have also been some notable successes in involving members of local communities in conservation activities and the establishment of protected areas for nesting. Much of this has been accomplished, despite an atmosphere of conflict in beach use, having produced valuable lessons for marine turtle conservationists.

21. Protective legislation exists in many countries, but enforcement is irregular – especially in terms of habitat protection. There are repeated reports of slaughter and open sale of marine turtles in Egypt (particularly Alexandria), despite numerous national and international laws (including the CMS). While on a world level the numbers of turtles nesting on beaches of Cyprus, Libya and Turkey are small, by Mediterranean standards these are important, and the collaboration of these States – not Parties to CMS – in regional marine turtle programs would be invaluable. Despite its relatively small area, there is an urgent need for better regional co-operation in the Mediterranean.

Red Sea: Egypt, Israel, Saudi Arabia

22. Five species are recorded (*C. caretta*, *Ch. mydas*, *D. coriacea*, *E. imbricata* and *L. olivacea*), but only *Ch. mydas* and *E. imbricata* are known to nest in the Red Sea. Nesting populations of *E. imbricata* in the region are among the largest known. There are foraging areas for these two species, and possibly also for *D. coriacea* on a seasonal basis. Known migrations of *Ch. mydas* (and probably also *D. coriacea*) link the Red Sea with the Western Indian Ocean and adjoining seas. Although there are no data with which to evaluate population trends, there is every reason to assume that populations in this region have declined.

23. Eggs and nesting females have been harvested in some areas, and there has been ongoing take of turtles in the water – probably for centuries. Fishing interactions, although poorly documented, are known to be important in some areas, and they are likely to be significant and widespread. Development on beaches and contamination – notably from crude oil – are major threats to marine turtles in the Red Sea. There have been no long-term or systematic, in-depth studies of marine turtles in this region.

24. There are various marine and coastal protected areas in the Red Sea. Environmental education and community participation activities are minimal, or non-existent in this region.

25. Protective legislation is common in many countries of the Red Sea, although enforcement is often inadequate. The collaboration of Sudan, Eritrea and Yemen (not parties to CMS) is critical, given the large nesting populations, and evidently also feeding grounds, that occur in their waters.

Western Indian Ocean and Arabian Sea:

**Somalia, Madagascar, France (Europa, Mayotte, Juan de Nova, Reunion, Tromelin), South Africa, Saudi Arabia, Pakistan, India, Sri Lanka, United Kingdom (British Indian Ocean Territory - BIOT)**

26. Five species are recorded, all of which nest in the region (*C. caretta*, *Ch. mydas*, *D. coriacea*, *E. imbricata* and *L. olivacea*). Here are some of the largest known nesting populations of *C. caretta* (Oman), *Ch. mydas* (Somalia and France), and *L. olivacea* (India). There are known to be important foraging areas for *Ch. mydas* and *E. imbricata*, and evidently the other three species also have foraging grounds within the region, or they would not occur in the numbers that they do. There is some interchange of turtles between this area and the Red Sea. Little is known of actual migratory routes, but results of tagging studies show a complex network of interconnections from South Africa along much of the coast of east Africa; from Yemen down to Somalia and into the Red Sea; and from the French islands to the seas around Madagascar. Decades of beach protection in South Africa have resulted in clear increases in annual numbers of nesting *C. caretta* and *D. coriacea*, and there is evidence of a similar phenomenon with *E. imbricata* on Cousin and Cousine Islands, Seychelles (not a Party). With these notable exceptions, and despite a general lack of systematic data, it is widely held that the western Indian Ocean region has experienced decreases or even decimation of most marine turtle populations.

27. Exploitation of eggs, nesting females, mating turtles, and foraging turtles has been practised by diverse peoples of the region for generations, and there are numerous cultures in which marine turtles are of central importance. Historic information on exportation of marine turtles from this region provides classic examples of resource over-exploitation. Interactions between fisheries and turtles are, as usual, generally not well documented, but where information exists (e.g., Saudi Arabia, India and Sri Lanka) it shows that modern fishing methods regularly represent serious threats to marine turtles. Beach and coastal development is a common and serious problem, and in some places contamination – particularly crude oil – is of great concern. Long-term studies are on going in French islands and South Africa (as well as non Party Seychelles). Deraniyagala in Sri Lanka and Hornell in ex-British territories produced early classics of marine turtle work from this region.

28. A number of Parties in this region have educational programs and protected areas for marine turtles. The environmental education and community participation focused on total beach protection have been especially strong in the South African program, where there have been singular increases in annual numbers of nesting *C. caretta* and *D. coriacea*. This serves as a beacon for other marine turtle programs, where nesting populations have been decimated. Other community-based activities are on going in Sri Lanka, and to a lesser extent India and Pakistan. Many Parties in the region have protected areas; France and the United Kingdom have entire islands that are turtle sanctuaries.

29. Protective legislation exists in most States of the region, with varying degrees of enforcement. A number of States, not Parties to CMS, are critical to marine turtle conservation in this region; in geographic order they include: Yemen, Oman, Maldives, Seychelles, Kenya, Tanzania, Mozambique, Comores, and Mauritius, as well as most States of the Arabian/Persian Gulf. Nesting and foraging areas of regional – or world – importance are documented in all of these territories.

Western Pacific:

**Philippines, Australia, France (French Polynesia), United Kingdom (S. Pacific Islands)**

30. Six species are recorded, all of which nest in the region (*C. caretta*, *Ch. mydas*, *D. coriacea*, *E. imbricata*, *L. olivacea* and *Natator depressus*). *N. depressus*, although not included in the CMS listing, is unique to this area, and warrants attention in regional accords. Nesting populations of *Ch. mydas* and *E. imbricata* (both in Australia) are among the world's largest. There are known to be important foraging areas for all six species in different parts of the region. Tagging studies show that there are extensive movements of turtles throughout the region, and for some species there are linkages with the eastern and north-western Pacific. Where systematic information is available, most populations are known to be in decline, often despite comprehensive conservation programs at a national level.

31. Direct exploitation of eggs, nesting females, mating and foraging turtles has long been carried out in this region, and some harvest levels have been extremely heavy. In those areas where data are available, it is known that contemporary fishing activities represent serious threats to marine turtles. Beach and coastal development is a widespread threat throughout the region. Long-term studies in Australia serve as a benchmark for marine turtle biology and conservation over much of the world.

32. There are nine marine turtle sanctuaries, including a Trans-frontier protected area, in Philippines; and Australia has large protected areas. The "Turtle Islands Heritage Protected Area", with six Philippine Islands and three Malaysian islands (not a Party), is the first trans-frontier protected area for marine turtles in the world. Environmental education has been carried out in both Australia and Philippines, and the involvement of Australian fishermen in finding means to reduce the incidental mortality of marine turtles in shrimp trawls is an outstanding example of community participation involving the fishing community.

33. Protective legislation specifically for marine turtles exists throughout the region, but it is not evenly enforced. Many States in this region, not Parties to CMS, are critical to marine turtle conservation: Indonesia, Malaysia, Thailand, Papua New Guinea, Japan and China. All of these countries have significant nesting populations of at least two species; they all have, or have had, major amounts of direct exploitation of marine turtles, and a major global impact through national and/or international commerce in marine turtles or their products.

**Eastern Pacific: France (Clipperton Is.), Panama, Peru, Chile**

34. Five species are recorded, (*C. caretta*, *Ch. mydas*, *D. coriacea*, *E. imbricata* and *L. olivacea*); of these, only *C. caretta* does not nest in this region. The numbers of nesting *D. coriacea* and *L. olivacea* (both species in Mexico as well as Costa Rica, both non Parties) are among the largest known. There are known to be important foraging areas for all five species; and all species with the exception of *E. imbricata* are known to make extensive migrations and developmental dispersions in this region, linking many States of the eastern Pacific with the western Pacific. Some of the most dramatic declines in marine turtle populations have been documented from this region during recent years.

35. Harvesting of eggs is legal in some communities in Panama, but not relevant to other CMS Parties in this region. Large numbers of turtles are harvested at sea in Peruvian waters, and incidental capture during fishing operations (drift nets as well as long-lines) is well documented in both Peru and Chile. The dramatic decline of *D. coriacea* in the eastern Pacific is attributed in part to mortality in South American commercial fisheries – in both native and foreign fleets. In this region, coastal development is much less a problem than is marine pollution.

36. Although certain marine areas are provided legal protection status, there are no specific marine turtle sanctuaries in any of the CMS Parties. There are environmental education activities in the continental states, and valuable initiatives in community participation in Panama.

37. All CMS Parties in this region have protective legislation for marine turtles, but enforcement on the open sea is next to impossible. All States in this region are eligible to join the Inter-American Convention for the Protection and Conservation of Marine Turtles. States that are not Parties to CMS, but that are critical to the conservation of marine turtles in this region include: United States, Mexico, Nicaragua, Costa Rica and Ecuador (Galapagos). All of these countries have major commercial fisheries operations in the region, and with the exception of the United States, they all have major nesting populations of from one to three species; they all have important foraging areas.

**Western Atlantic and Caribbean:**

**United Kingdom** (Bermuda, British Virgin Islands, Cayman Is., and Falklands/Malvinas Is.), **France** (French Guyana, Guadeloupe, and Martinique), **Netherlands** (Netherlands Antilles), **Jamaica**, **Panama**, **Uruguay**, and **Argentina**

38. Six species are recorded (*C. caretta*, *Ch. mydas*, *D. coriacea*, *E. imbricata*, *L. kempii* and *L. olivacea*); this is one of the few regions in the world where both species of *Lepidochelys* may occur. Nesting has been recorded for all species, and this is the only region where *L. kempii* nests (mainly Mexico).



Nesting populations of *Ch. mydas* (Costa Rica) and *E. imbricata* (Mexico) are among the largest in the world. There are important foraging areas for all species. Migrations and developmental dispersions are known to link many of the States of North and South America, as well as this region with both the north-eastern and south-eastern Atlantic regions. The historic declines of marine turtles in this region have long served as classic examples of resource decimation, showing the devastating effects of globalised economies hundreds of years ago. Classic studies in this region by Archie Carr and collaborators have served as a world-wide inspiration for marine turtle research and conservation, and there are on-going long-term studies in several non-CMS Parties in this region.

39. Harvests of eggs, nesting females and turtles at sea have long been practised by many peoples of this region. During more recent times some of these activities have been controlled, although there is still considerable harvest of eggs in French Guyana, as well as capture of turtles in Panama and neighbouring countries. Incidental capture in fisheries operations is not well documented in general, but long-lines in Uruguay are known to be a serious threat. Coastal development, tied to the burgeoning sun-and-sea tourist industry, has resulted in the loss of vast areas of nesting beaches and foraging areas throughout the region, notably coral reefs. Marine contamination is also a serious problem in some areas.

40. Protective legislation exists in many Parties in this region, although enforcement is not always consistent. As with the eastern Pacific, all States in this region are eligible to join the Inter-American Convention for the Protection and Conservation of Marine Turtles. States that are not part of CMS, but that are critical to the conservation of marine turtles in this region include: United States, Mexico, Cuba, Honduras, Nicaragua, Costa Rica, Venezuela (Aves Is.), Trinidad and Tobago, Suriname and Brazil. All of these countries, except Honduras, Nicaragua and Venezuela, have important nesting populations of at least two species; they all have, or have had, intense levels of exploitation, with consequential national and international commerce. The Wider Caribbean Sea Turtle Network (WIDECAST), active in this region, serves as a model for other areas.

### Recommendations

41. There are four broad priorities basic to developing regional marine turtle conservation programmes:

- acquiring competent and up-to-date information, not only on turtles and their habitats, but also on the perceptions, expectations, needs and interactions of coastal peoples in relation to these animals and their habitats;
- disseminating and evaluating reliable information; this is especially relevant for those people and institutions which are charged with conservation and management of turtles and the diverse marine and coastal environments which are critical to the survival of these animals, as well as for those people and institutions responsible for development and fomenting social activities in the coastal zone;
- motivating share-holders and decision-makers to take appropriate actions based on the best available information; and
- integrating all sectors of society in diverse activities basic to the conservation of the animals and their habitats; this consists of developing meaningful national, regional and global collaboration in which co-operation is not sacrificed to local interests.

Specific actions to meet these goals can be organised in thematic areas. Both the actions and the thematic areas overlap and interact, and the overall response must be iterative.

#### Development of human resources and increase of research capacity:

42. People at different professional and social levels must have access to training opportunities, and a variety of teaching and instructional mechanisms are needed, on a continual basis. The CMS should provide direct support as well as catalyse and fortify networks, bilateral and multilateral interchanges for these purposes.

43. Central to all four of the above priorities is the development of a competent, motivated and effective cadre of professionals, who will not only provide and update the basic information, but will be able to appreciate the relevance of different problems, and portray them to decision-makers in such a way that the issues will be effectively addressed and resolved. A less obvious, but no less important, issue is the integration and empowerment of diverse actors involved in the use of different marine and coastal environments, so that they will appreciate the importance of protecting endangered species and their habitats.

44. Training of marine turtle biologists and conservationists is a high priority, and this is especially true in many countries of the South. Almost by definition, countries of the North have far greater economic and technological resources, and to facilitate and expedite the training process, it is recommended that South-to-North educational partnerships be established as an on-going commitment. For example, universities and organisations in francophone Europe (e.g., Belgium, France and Switzerland) could host graduate students from francophone African nations, while universities and organisations in anglophone Europe (e.g., Germany, Netherlands, Sweden and United Kingdom) could host graduate students from anglophone African nations, as well as Asia. There are obviously many more possible partnerships, and what is essential is that there be a long-term commitment to quality education, and the repatriation of qualified professionals to the South.

45. On the other hand, the social, political and environmental realities of the South are distinct from those of the North, and a wealth of valuable experiences are available – both in and outside of – an academic setting. To benefit from these opportunities and promote better understanding and collaboration, it is essential to develop and strengthen training activities in the South. Both South-to-South and North-to-South exchanges should be intensified and supported.

46. To meet these training goals the CMS Secretariat would not necessarily need to expend money, but rather could act as a catalyst and co-ordinator to nurture bilateral and regional agreements which would provide the collaboration and support required.

47. Intensive training programs focusing on field techniques, and open to a variety of staff, including technical personnel, are also extremely important in the development of human resources and the standardisation of techniques. The CMS helped support regional workshops for the Western Indian Ocean in 1995 and for the Northern Indian Ocean in 1997; and a sequel to the ECOFAC training course, carried out in Gabon in 1997, is planned for nearly all States of West Africa. A similar activity is planned for the Arabian region in 1998. It will be important to extend similar activities to other regions, and it is also fundamental to do follow-up courses, and not rely on just one injection of training effort in a particular area.

48. Regional workshops are invaluable for integrating people from different countries, dependencies and disciplines; and they provide a springboard for the development of networks of professionals of different disciplines, from field biologists to policy makers. Initiatives which are underway and merit the support of the Parties and Secretariat of CMS included the following five workshops:

- North-western Indian Ocean and adjoining seas, from Somalia to Pakistan: a workshop is now in the planning stages with the CMS Secretariat; this region has one of the largest rookery of loggerheads in the world, at Masirah Island, Oman – a unique resource which would be invaluable for hands-on instruction.
- Southeast Asia, or ASEAN region: within this region are marine turtle populations for which there are singularly lengthy historic records of exploitation, and clear examples of the effects of overuse. Mediterranean region: the regional meeting “Research and Conservation of Island and Coastal Ecosystems in the Mediterranean” (MEDMARAVIS, scheduled for 29 September to 3 October 1998, in Malta) should provide a perfect forum from which to develop plans for a workshop on marine turtle conservation in the Mediterranean.
- Western Africa: a follow-up and amplification of the ECOFAC workshop in Gabon is now in the planning stages with the CMS Secretariat.

- Central America: the Third Central American Workshop, to be held in Panama in 1998, is now being planned; given the advances of past workshops held in Guatemala and Costa Rica, this initiative warrants CMS support.

Basic research and assessments of marine turtles and their habitats:

49. Numerous themes require basic information, and these include both biological and social issues: priorities are listed for both disciplines. A mechanism for involving the Parties in these activities is proposed, and the CMS should promote well-directed, high priority information-gathering activities by building partnerships with other organisations, as well as the production and distribution of research guides and summaries of research findings.

50. Although marine turtles have been under scientific study for more than half a century, many basic facts of their life history still are not understood or even known, because the marine environment essentially makes them "invisible" to scientific inquiry. During the past decade, it has become clear that one of the most pernicious, yet underestimated threats to marine turtles, is from modern fishing activities. There is an urgent need to gather up-to-date information on the interactions between different fishing operations and marine turtles (a recommendation that is totally consistent with numerous international accords and United Nations agreements). Through its connection with the United Nations Environment Programme, CMS should nurture collaborative relationships in which fishery organisations of Parties and their collaborators gather, systematise and disseminate basic information on fishing effort and bycatch, relevant to marine turtles and their habitats. Clearly, a strong working relationship with the fisheries division of FAO would also be invaluable.

51. Another issue that has escaped attention is that of identifying and then protecting oceanic areas used by marine turtles during their feeding activities, migrations and developmental dispersion. As with the issue of bycatch, regional collaboration will be essential for effective and efficient research on this topic, for the turtles freely cross between jurisdictional areas of many nations. Here also, the CMS can serve as a catalyst, making use of both its UN links as well as its Member States, to promote regional accords in addressing this issue.

52. There are many other basic themes which need to be investigated, such as genetic research to identify populations; identification of the major sources of mortality in different parts of the life cycle; research on the causes and cures of diseases, notably fibropapillomas; techniques for increasing hatchling recruitment; improved techniques for marking, tagging and tracking; and a wide gamut of educational, social and cultural aspects fundamental to empowering and enlisting coastal peoples in conservation activities. In all cases, the CMS Secretariat, working through both multilateral and national contacts, should help encourage well-directed research activities.

53. It is essential that the Parties and Signatories of CMS participate fully in the initiative to produce a complete, up-to-date foundation of information on the basic issues of marine turtle biology and conservation. The questionnaire circulated on 20 August 1996 was very thorough, but because it was so ambitious, it is not surprising that only 25% of the invited Parties responded. A second approach, co-ordinated by the CMS Secretariat, could involve circulating forms to each CMS State, with information filled out as best as can be based on the data available. By using a step-by-step, iterative process, it should be possible for CMS to more fully involve the relevant focal points, and scientific advisors, in each of the States, and to produce a more complete evaluation of the conservation status of marine turtles. This will permit the identification of priority actions that need to be undertaken with greater precision. Because marine turtles disperse and migrate over vast distances – independent of national boundaries – it is essential that surveys address biologically relevant areas, which will routinely include both Parties and non-Parties to CMS. For example, detailed, systematic surveys are needed for Northern Africa, from where preliminary information indicates that there are important nesting populations, even although major concentrations apparently occur in several non-CMS Parties. Annex II of this report is a proposed format for gathering additional information in a systematic manner from each State, which would later be incorporated in an update of the scheme used for the regional synopses presented above (based on Annex I of this document).

54. Basic research must include not only biological and ecological questions, but also root issues involving the human communities that interact with marine turtles and their habitats. Without understanding the human

factor, conservation plans – no matter how good the biology – will be incomplete and flawed. Major issues in the social arena needing attention include the evaluation of socio-cultural interactions between societies and marine turtles and their habitats, socio-political structures and mechanisms of coastal communities, educational needs and methodologies, and questions of empowerment. In this case, the CMS should develop partnerships with other UN organisations such as the United Nations Research Institute of Social Development (UNRISD), which, although small, is active in elucidating the relationships between societies and the environment.

55. Specific initiatives under way include the publication of the research manual: Research and Management Techniques for the Conservation of Marine Turtles funded in part by CMS, and authored and edited by members of Marine Turtle Specialist Group (MTSG, part of the World Conservation Union's Survival Service Commission IUCN/SSC), and other experts. Other such training materials would be invaluable aids to regional workshops and training programs, and CMS should develop partnerships with printing houses to provide manuals and basic literature on marine turtle biology and conservation to key conservation organisation and research libraries in the South.

#### Protected areas and integrated conservation activities:

56. Areas critical for marine turtles need to be identified and protected using various mechanisms integrated with other conservation and management activities, assuring long-term permanency. The CMS should promote an integrated approach to habitat conservation by linking activities to its existing Agreements, providing technical and legal support, and building collaboration at national and multinational levels.

57. A variety of categories of protected areas relevant to marine turtles exist in different nations. In addition to nature reserves and sanctuaries, these include: restricted islands; closed or controlled nesting beaches; restrictions in coastal zones, in which there are feeding grounds and refuge areas for marine turtles (such as marine pastures and coral reefs); and fishing regulations (closed seasons and/or areas). In many cases, some form of control provided for coastal development, beach use, and/or fishing activities – while not specifically focused on marine turtles – serves as a legal means of establishing protected areas for marine turtles.

58. A clear priority is to identify and protect on a long-term basis (i.e., for decades) principal nesting beaches for each species in each region, and the same applies to major foraging areas, where they are spatially fixed. As information becomes available on other critical oceanic areas, such as "migration corridors", these will also require special protection. CMS should work with Member States to provide technical and legal support for the establishment of these protected areas. In this respect, the pilot GIS-based mapping project in collaboration with the World Conservation Monitoring Centre (WCMC), should be given serious consideration for CMS funding.

59. Because these animals have complex life cycles, it is imperative that conservation activities be integrated: one single type of control or protection is inadequate for conserving marine turtles. Hence, protected areas – no matter how large or well enforced – although invaluable for the conservation of these animals, must be used in conjunction with numerous other activities, for a marine turtle is likely to spend only a part of its life within any single protected area.

60. The CMS can provide an invaluable role for marine turtle conservation, by working through its Parties and Signatories, as well as multinational organisations, emphasising the need not only for protected areas, but also for integrated conservation activities. In many cases, these actions can be easily linked with existing CMS Agreements.

#### Environmental education:

61. More and better environmental educators are required; they must target not only children but also the most powerful ranks of societies, elucidating the interactions and dependencies between society and the environment. The CMS should exhort its Members to greater heights in this arena, develop partnerships with other organisations, and support workshops and activities designed to promote the "multiplier effect".

62. There are differing approaches to environmental education, depending on social, economic, cultural and educational situations. Nonetheless, one of the greatest priorities for all States is the production of greater numbers of educators who will be better motivated and informed. Because marine turtles are characterised by complex life cycles and long lives, they serve as ideal vehicles for integrating diverse disciplines in a thematic approach.

63. Since many environmental issues related to marine turtles have direct linkages to problems with other wildlife species, as well as with social problems, education programs would be more relevant and acceptable to many people by showing these interactions, and integrating ecological and social issues. This is especially important in countries of the South, where life styles are much more dependent on the direct use of marine resources, and where capital reserves and human survival alternatives are relatively limited in comparison with nations of the North.

64. It must also be appreciated that the usual strategy of focusing environmental education on school children, although unquestionably necessary, is an incomplete approach. Given that it may take ten to fifteen years before today's school children are even beginning to take on roles of decision makers in their respective communities, no matter how well founded and articulate their concerns for environmental protection, they will have to "clean up" after another decade of inaction. Hence, all sectors of society must be involved in environmental education activities, not the least of which are high-ranking adults in decision-making positions. This very definitely includes officials of transnational corporations, engrossed in the processes of globalisation, as well as their supporters in governments and multinational organisations.

65. It is imperative that the Secretariat and CMS Members take active roles in promoting increased environmental education. To respond to the issues described above, the CMS should stimulate and develop working partnerships between Member States and organisations such as UNESCO, in particular its environmental education program "Connections". Workshops to bring together people active in running, designing, co-ordinating and funding environmental education activities should be supported at all possible levels.

#### Community participation:

66. As much as an activity, community participation is a principle: civilian support is essential for lasting and effective conservation. The CMS should insure that this principle is conspicuous in all other conservation activities, as well as promoting and supporting specific workshops and interchanges focused on developing, enhancing and evaluating community participation.

67. With a foundation of improved information – biological as well as social – and educational methods, it will be propitious to provide support for coastal peoples to take on greater roles in the stewardship of their own resource base. This is no mean task, given ever-increasing pressures on marine and coastal resources, burgeoning numbers of humanity, and relentless pressures for resource extraction and habitat modification to feed global markets. However, by showing the clear links between the condition of the environment with present and future generations, the logic of biological conservation is easier to appreciate and accept.

68. In this respect, the conservation of marine turtles serves as a flagship, or symbol, in the long-term protection of renewable resources. By employing these charismatic animals as ambassadors of the oceans, educators and social workers can consolidate concern for myriad environmental and social issues, and work toward the integration of diverse community activities, including coastal development, fishing and resource extraction, education, pollution, and policy making. Empowering coastal communities to evaluate and resolve these issues, under the banner of marine turtle protection, will increase the chances of lasting conservation of coastal resources.

69. The role of the CMS should be to help promote general concepts of community participation among the scientific and administrative representatives of Member States. It should also encourage and support specific workshops and interchanges focused on the promotion, development and evaluation of community participation activities, as well as the incorporation of fundamental concepts and approaches of community participation in general workshops and interchanges.

True community participation is generally absent or poorly developed, and it is necessary to involve specialists and organisations according to their level of accomplishment, not by their membership in the Convention. Where expertise is found outside the CMS, it should be availed of – e.g., Projecto TAMAR in Brazil.

#### Legislation:

70. Most Parties to the CMS appear to have some legislation relevant to marine turtle conservation, but these laws need to be up-dated and integrated with other environmental and social priorities, both at national and regional levels. The CMS should promote collaboration, independent of whether or not the State is a Party, by establishing partnerships between specialists in environmental law and competent national authorities.

71. The information reviewed for this report indicates that the majority of CMS Parties has national legislation relevant to marine turtle protection. Laudable as this is, in most cases these laws and regulations could be up-dated with what is known of marine turtle conservation needs. The realisation of these legislative modifications must be included in national plans for marine and coastal conservation, and the CMS should provide support by pairing environmental law NGOs with the competent authorities for each of the States, despite whether or not they are Members of the Convention.

72. In the case of regional neighbours, the legislation will be much more effective if States collaborate in common issues, such as closed seasons, trans-frontier protected areas, and enforcement efforts. To this end, the CMS should promote and facilitate collaboration in the development of legislation between coastal States, independent of whether or not they are Parties to the Convention.

#### International instruments:

73. Under the mandate of its own Convention, the CMS Secretariat should exhort the relevant Parties to ratify the Inter-American Convention for the Protection and Conservation of Sea Turtles as well as the Agreement for Conservation of Sea Turtles on the Caribbean Coasts of Panama, Costa Rica and Nicaragua, for these specifically deal with regional co-operation in marine turtle conservation.

74. The fledgling Inter-American Convention for the Protection and Conservation of Sea Turtles is open for signature until the 31st of December 1998. This is the only international instrument uniquely focused on marine turtles, and it has tremendous potential for stimulating regional co-operation in the conservation of regional marine resources. In addition to the obvious countries of the American tropics, including Jamaica, Panama and Peru, CMS Parties such as Argentina, Chile and Uruguay should be encouraged to sign and ratify, for their waters host large and significant populations of different species of marine turtles. In addition, France, Netherlands and the United Kingdom should also be encouraged to sign and ratify, for they have territories in the region with considerable relevance to marine turtle conservation. The CMS Secretariat, under the mandate of Article III (Paragraphs 4 and 5) and Appendices I and II of its own Convention, is in the unique position to vigorously promote the signing and ratification of the Inter-American Convention by all relevant Parties.

75. Another recent regional initiative is the Agreement for Conservation of Sea Turtles on the Caribbean Coasts of Panama, Costa Rica and Nicaragua (Tri-Partite Agreement). This involves the collaboration of three neighbouring countries in the conservation of common stocks of marine turtles that during different parts of their life history depend on marine and coastal environments in one of these countries. The fundamental issue in the Tri-Partite Agreement is co-operation in the protection of common, migratory resources, and to accomplish this it will be necessary to integrate legislation between regional neighbours so that the fullest protection is provided at critical times and places. Once again, under the mandate of Article III (Paragraphs 4 and 5) and Appendices I and II of the CMS, the Secretariat is in the unique position to exhort the three States involved to develop and ratify this Agreement, encouraging Panama, a Party to CMS, to take the lead.

76. There is a seemingly infinite number of international instruments – some global, some regional – involving conservation of endangered species, conservation of shared migratory species, fisheries resources

and activities, marine and coastal ecosystems, and marine pollution. Remarkably, conservationists, and even specialists in environmental law, are not well informed about many of these treaties and agreements, many of which are germane to marine turtle conservation.

77. Because of their complex life histories, including long maturation period, dispersion and migration over vast areas of the planet and dependence on a great variety of marine and coastal ecosystems, marine turtles can only be conserved through integrated, long-term conservation activities, which include the protection of diverse marine environments. For example, these animals will not be effectively protected without addressing the ponderous global problems of overfishing and bycatch. Numerous international and regional accords dealing with fisheries (overfishing, bycatch, gear selectivity, etc.) embody principles fundamental to conservation of marine turtles, although not written with this in mind.

78. As States involved in the CMS also have multiple international and regional obligations through these and other instruments, it would be invaluable to consolidate information on the full gamut of treaties and accords with relevance to marine turtles and their habitats. This could take the form of a matrix, in which the situation of a State in relation to diverse instruments is compiled and synthesised. The column of totals would provide a rapid indication of the number of international accords relevant to marine turtle conservation for each State. Annex III of this document is a proposed format for compiling this information.

#### CMS Agreements:

79. The CMS should develop an Agreement focused on marine turtles and their habitats before the end of 1998. It is remarkable that despite its many broad-encompassing Agreements, as mandated by Article IV, the CMS has no formalised administrative structure dealing with marine turtles. Since these are the paradigm "keystone species", serving as "ambassadors to the oceans", marine and international conservation could only be strengthened by CMS formalising a more active role in marine turtle conservation. Given the commitment of CMS to the Indian Ocean, and the recent advances in the development of a regional network, CMS should develop an Indian Ocean Agreement for Marine Turtle Conservation. A Central American Agreement is also justified, and as regional integration in West Africa, the Mediterranean, Arabian area, and Southeast Asia progress, these regions should also be supported by CMS agreements.

80. There will be administrative advantages for developing regional agreements, but the possibility must be kept open for working toward one, world-wide CMS Agreement for marine turtle conservation. As more information becomes available on these animals, it is ever more difficult to divide up oceans in such a way that divisions are biologically meaningful.

81. A major advantage of developing a CMS Agreement is that it expedites the evolution of a formal, international framework for the conservation of migratory species. Once this is in place, fundamental aspects such as international collaboration in research, training and legislation, as well as funding, are facilitated and strengthened.

#### Increasing the role of the CMS Secretariat:

82. Several specific functions, particular to the Secretariat need to be addressed as priorities to insure that Member States appreciate and fulfil their obligations to the Convention. In addition to the tasks identified above, the CMS Secretariat should, as mandated by the international Convention under discussion, take a more active role on several fronts:

- Raise specific questions of the Parties relevant to the implementation of the terms of the treaty – particularly in regard to Articles II and III.
- Bring to the attention of the Parties, both individually and at the Conference of the Parties (COP), information received about infringements to the accords of the Convention and other relevant anomalies.

- Undertake a regular, tri-annual review of the implementation of the Convention, as it relates to marine turtles.
- Together with each Party, ensure that there is continuing and appropriate expertise on marine turtles on the Scientific Council of CMS, both as a specific Scientific Councillor to CMS and as scientific advisors to the Parties.
- Encourage scientific advisors and country focal points to acquire more basic information on the issues of marine turtle biology and conservation, namely by attending and participating in events which specialise in the dissemination of information on marine turtle biology and conservation, for example the Annual Symposium on Sea Turtle Biology and Conservation.
- Encourage greater participation in the COP of academic and NGO specialists on marine turtles, notably members of the IUCN/SSC MTSG, WIDECAST and other regional networks.
- Promote the ratification and entry into force of international initiatives critical to marine turtle conservation, including trans-frontier protected areas, fishing agreements, environmental accords, the Inter-American Convention for the Protection and Conservation of Sea Turtles, the Agreement for Conservation of Sea Turtles on the Caribbean Coasts of Panama, Costa Rica and Nicaragua, and other regional agreements pertinent to marine turtle conservation.
- Encourage Parties to take the initiative in promoting and executing programmes in training, research, integrated conservation, public education, community participation and other collaborative activities as they relate to marine turtles and their habitats.
- Be vigilant toward the effects of globalisation and the institutionalisation of unbalanced, dominating socio-economic pressures (e.g., the Multilateral Agreement on Investment {MAI} and the World Trade Organisation {WTO}), and their effects on environments and migratory species.

### **Conclusions**

83. The Convention for the Conservation of Migratory Species of Wild Animals can play a unique role in catalysing more integrated conservation activities for marine turtles. Basic information on the conservation status of these animals can be compiled, thereby providing a firm foundation from which to make future decisions. Training and capacity building are clear priorities in all regions, and there are several mechanisms for achieving these goals. The use of protected areas, integrated with other conservation actions, needs to be more fully promoted. Public, environmental education is also a clear priority, and this needs to be presented in a way relevant to the populations concerned, showing the inter-linkages between environment and society. The use of marine turtles, as global flagship species to promote integrated, long-term conservation, should be encouraged within the CMS. Information on the myriad international instruments relevant to conservation of marine turtles and their habitats needs to be consolidated and systematised, in an attempt to draw together the strengths and commitments of these individual treaties and accords.

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CONSERVATION STATUS OF MARINE TURTLES IN CMS PARTIES, BY OCEAN BASIN - Draft Annex 1

|   | Harvest turtles at sea |          |             |              | Fisheries interactions |            |          |             | Inshore threats |           |            |          | Other threats |              |           |            | Basic surveys |             |              |           | Long term studies |          |             |              |           |
|---|------------------------|----------|-------------|--------------|------------------------|------------|----------|-------------|-----------------|-----------|------------|----------|---------------|--------------|-----------|------------|---------------|-------------|--------------|-----------|-------------------|----------|-------------|--------------|-----------|
|   | C. caretta             | C. mydas | D. coriacea | E. imbricata | L. kempff              | C. caretta | C. mydas | D. coriacea | E. imbricata    | L. kempff | C. caretta | C. mydas | D. coriacea   | E. imbricata | L. kempff | C. caretta | C. mydas      | D. coriacea | E. imbricata | L. kempff | C. caretta        | C. mydas | D. coriacea | E. imbricata | L. kempff |
| Red Sea                                 |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Egypt                                   | X                      |          |             | X            |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Israel                                  |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Saudi Arabia                            |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Western Indian Ocean & Arabian Sea      |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Somalia                                 |                        | X        |             | X            |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Madagascar                              |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| France (Reunion Europa Tromelin Mayote) |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| South Africa                            | 0                      | 0        | 0           | 0            | 0                      |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Saudi Arabia                            |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Pakistan                                |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| India                                   |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Sri Lanka                               |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| United Kingdom (Chagos)                 |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Western Pacific                         |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Philippines                             |                        | X        |             | X            |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| Australia                               |                        | X        |             | X            |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| France (Polynesia)                      |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |
| United Kingdom (S. Pacific Is.)         |                        |          |             |              |                        |            |          |             |                 |           |            |          |               |              |           |            |               |             |              |           |                   |          |             |              |           |





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|                        | Protective legislation |                 |                    |                     |                 | All spp. | Sanctuaries       |                 |                    |                     |                 | Public education  |                 |                    |                     |                 | Community involvement |                 |                    |                     |                 | Game & Wildlife Protection Regulations |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|------------------------|-----------------|--------------------|---------------------|-----------------|----------|-------------------|-----------------|--------------------|---------------------|-----------------|-------------------|-----------------|--------------------|---------------------|-----------------|-----------------------|-----------------|--------------------|---------------------|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                        | <i>C. caretta</i>      | <i>C. mydas</i> | <i>D. coriacea</i> | <i>E. imbricata</i> | <i>L. kempi</i> |          | <i>C. caretta</i> | <i>C. mydas</i> | <i>D. coriacea</i> | <i>E. imbricata</i> | <i>L. kempi</i> | <i>C. caretta</i> | <i>C. mydas</i> | <i>D. coriacea</i> | <i>E. imbricata</i> | <i>L. kempi</i> | <i>C. caretta</i>     | <i>C. mydas</i> | <i>D. coriacea</i> | <i>E. imbricata</i> | <i>L. kempi</i> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| North Eastern Atlantic |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Norway                 |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Finland                |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sweden                 |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Denmark                |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Germany                |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Netherlands            |                        |                 | X                  |                     |                 | X        |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Luxembourg             |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Belgium                |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| United Kingdom         |                        |                 | X                  |                     | X               |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ireland                |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| France                 | X                      | X               | X                  | X                   | X               | X        |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Spain                  | X                      | X               | X                  | X                   | X               |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Portugal               | X                      | X               | X                  | X                   | X               | X        |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Portugal (Azores)      |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| European Community     | X                      | X               | X                  | X                   | X               | X        |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| South Eastern Atlantic |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Portugal (Madera)      | X                      | X               | X                  | X                   | X               | X        |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Spain (Canary)         |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Morocco                |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Senegal                |                        |                 | X                  |                     |                 | X        |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ALL 5 SPECIES:         |                        |                 |                    |                     |                 |          |                   |                 |                    |                     |                 |                   |                 |                    |                     |                 |                       |                 |                    |                     |                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |







SUMMARY OF MARINE TURTLES CONSERVATION STATUS (to be completed by each Party) - Draft Annex 2

| COUNTRY NAME:<br>Ocean Basin: | Species of marine turtle |                 |                    |
|-------------------------------|--------------------------|-----------------|--------------------|
|                               | <i>C. caretta</i>        | <i>C. mydas</i> | <i>D. coriacea</i> |
|                               |                          |                 |                    |
| Records of occurrence         |                          |                 |                    |
| Certain (C), Uncertain (U)    |                          |                 |                    |
| Nesting beaches               |                          |                 |                    |
| Number                        |                          |                 |                    |
| Location                      |                          |                 |                    |
| Foraging areas                |                          |                 |                    |
| Area                          |                          |                 |                    |
| Location                      |                          |                 |                    |
| Migratory routes              |                          |                 |                    |
| Population trends             |                          |                 |                    |
| Based on what                 |                          |                 |                    |
| Egg harvest                   |                          |                 |                    |
| Annual number legal           |                          |                 |                    |
| Annual number illegal         |                          |                 |                    |
| Harvest nesting females       |                          |                 |                    |
| Annual number legal           |                          |                 |                    |
| Annual number illegal         |                          |                 |                    |
| Harvest turtles at sea        |                          |                 |                    |
| Annual number legal           |                          |                 |                    |
| Annual number illegal         |                          |                 |                    |
| Fisheries interactions        |                          |                 |                    |
| Type of gear                  |                          |                 |                    |
| Type of boat                  |                          |                 |                    |
| Annual number caught          |                          |                 |                    |
| Annual number drown           |                          |                 |                    |

*L. kempii/olivacea*

*E. imbricata*

*D. coriacea*

*C. mydas*

*C. caretta*

SUMMARY OF MARINE TURTLES CONSERVATION STATUS (to be completed by each Party) - Draft Annex 2

| COUNTRY NAME:                            |  | Species of marine turtle |                 |                    |                     |                    |
|--|--|--------------------------|-----------------|--------------------|---------------------|--------------------|
| Ocean Basin:                             |  | <i>C. caretta</i>        | <i>C. mydas</i> | <i>D. coriacea</i> | <i>E. imbricata</i> | <i>L. olivacea</i> |
| Nesting beach threats                    |  |                          |                 |                    |                     |                    |
| beach development                        |  |                          |                 |                    |                     |                    |
| lighting                                 |  |                          |                 |                    |                     |                    |
| beach driving                            |  |                          |                 |                    |                     |                    |
| sand mining                              |  |                          |                 |                    |                     |                    |
| oil pollution                            |  |                          |                 |                    |                     |                    |
| other                                    |  |                          |                 |                    |                     |                    |
| Inshore threats                          |  |                          |                 |                    |                     |                    |
| boats                                    |  |                          |                 |                    |                     |                    |
| oil pollution                            |  |                          |                 |                    |                     |                    |
| plastics                                 |  |                          |                 |                    |                     |                    |
| other solid wastes                       |  |                          |                 |                    |                     |                    |
|  |  |                          |                 |                    |                     |                    |
| Other threats                            |  |                          |                 |                    |                     |                    |
|  |  |                          |                 |                    |                     |                    |
|  |  |                          |                 |                    |                     |                    |
| Basic survey                             |  |                          |                 |                    |                     |                    |
| occurrence                               |  |                          |                 |                    |                     |                    |
| distribution                             |  |                          |                 |                    |                     |                    |
| status                                   |  |                          |                 |                    |                     |                    |
|  |  |                          |                 |                    |                     |                    |
| Long term studies                        |  |                          |                 |                    |                     |                    |
| tagging                                  |  |                          |                 |                    |                     |                    |
| nest protection                          |  |                          |                 |                    |                     |                    |
| stranding                                |  |                          |                 |                    |                     |                    |
| other                                    |  |                          |                 |                    |                     |                    |
|  |  |                          |                 |                    |                     |                    |
| Species protected by law                 |  |                          |                 |                    |                     |                    |
|  |  |                          |                 |                    |                     |                    |
| Other topics relevant to certain species |  |                          |                 |                    |                     |                    |

SUMMARY OF MARINE TURTLES CONSERVATION STATUS (to be completed by each Party) - Draft Annex 2

|                         |  |  |  |  |  |  |  |
|-------------------------|--|--|--|--|--|--|--|
| COUNTRY NAME:           |  |  |  |  |  |  |  |
| Ocean Basin:            |  |  |  |  |  |  |  |
| Protective legislation  |  |  |  |  |  |  |  |
| National                |  |  |  |  |  |  |  |
| State                   |  |  |  |  |  |  |  |
| Municipal               |  |  |  |  |  |  |  |
| Responsible agency      |  |  |  |  |  |  |  |
| Protected areas         |  |  |  |  |  |  |  |
| Nesting beaches         |  |  |  |  |  |  |  |
| area                    |  |  |  |  |  |  |  |
| responsible agency      |  |  |  |  |  |  |  |
| Coastal areas           |  |  |  |  |  |  |  |
| area                    |  |  |  |  |  |  |  |
| responsible agency      |  |  |  |  |  |  |  |
| Environmental Education |  |  |  |  |  |  |  |
| responsible agency      |  |  |  |  |  |  |  |
| activities              |  |  |  |  |  |  |  |
| Community participation |  |  |  |  |  |  |  |
| Sea turtle specialists  |  |  |  |  |  |  |  |
| Training programs       |  |  |  |  |  |  |  |





PARTICIPATION IN INTERNATIONAL INSTRUMENTS - Draft

Annex 3

| COUNTRY                    | CMS     | ACCOBAMS | ASCOBANS | SEAL | AEWA | BAT | Siberian Crane | Slender-billed Curlew | CITES | CBD | AGENDA 21 | UNCLOS | RAMSAR | Land Based Pollution | MARPOL | LONDON DUMPING | UN DRIFT NET | STRADLING STOCKS | Barcelona: SPA | Fish Council Med. | Bern | African Conv | Nairobi | East Af. | ASEAN | S. Pacific Com. | SPREP | Apia | West. Hem. | Carthage: SPWA | Cent. Amer | Interamer. | IATTC |  |  |  |  |  |
|----------------------------|---------|----------|----------|------|------|-----|----------------|-----------------------|-------|-----|-----------|--------|--------|----------------------|--------|----------------|--------------|------------------|----------------|-------------------|------|--------------|---------|----------|-------|-----------------|-------|------|------------|----------------|------------|------------|-------|--|--|--|--|--|
| Albania                    |         | X        |          |      |      |     |                | X                     |       |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| Angola                     |         |          | X        |      |      |     |                |                       |       |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| ARGENTINA                  | 1.01.92 |          |          |      |      |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      | X          |                |            |            |       |  |  |  |  |  |
| (Armenia)                  |         |          |          |      | X    |     |                |                       |       |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| AUSTRALIA                  | 1.09.91 |          |          |      |      |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          | X     |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| BELGIUM                    | 1.10.90 |          | X        |      | X    | X   |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| BENIN                      | 1.04.86 |          |          |      | X    |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| Bulgaria                   |         |          |          |      | X    |     |                | X                     |       |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| BURKINA FASO               | 1.01.90 |          |          |      |      |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      | X            |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| (Burundi)                  |         |          |          |      | X    |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| CAMEROON                   | 1.11.83 |          |          |      | X    |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| [Central African Republic] | X       |          |          |      | X    |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      | X            |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| [CHAD]                     | 1.xx.9x |          |          |      | X    |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| CHILE                      | 1.11.83 |          |          |      |      |     |                |                       | X     |     |           |        |        |                      |        |                |              |                  |                |                   |      |              |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |
| Cote d'Ivoire              | X       |          |          |      |      |     |                |                       |       |     |           |        |        |                      |        |                |              |                  |                |                   |      | X            |         |          |       |                 |       |      |            |                |            |            |       |  |  |  |  |  |







