

Research and Management Techniques for the Conservation of Sea Turtles

Prepared by IUCN/SSC Marine Turtle Specialist Group

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Preface

In 1995 the IUCN/SSC Marine Turtle Specialist Group (MTSG) published *A Global Strategy for the Conservation of Marine Turtles* to provide a blueprint for efforts to conserve and recover declining and depleted sea turtle populations around the world. As unique components of complex ecosystems, sea turtles serve important roles in coastal and marine habitats by contributing to the health and maintenance of coral reefs, seagrass meadows, estuaries, and sandy beaches. The *Strategy* supports integrated and focused programs to prevent the extinction of these species and promotes the restoration and survival of healthy sea turtle populations that fulfill their ecological roles.

Sea turtles and humans have been linked for as long as people have settled the coasts and plied the oceans. Coastal communities have depended upon sea turtles and their eggs for protein and other products for countless generations and, in many areas, continue to do so today. However, increased commercialization of sea turtle products over the course of the 20th century has decimated many populations. Because sea turtles have complex life cycles during which individuals move among many habitats and travel across ocean basins, conservation requires a cooperative, international approach to management planning that recognizes inter-connections among habitats, sea turtle populations, and human populations, while applying the best available scientific knowledge.

To date our success in achieving both of these tasks has been minimal. Sea turtle species are recognized as “Critically Endangered,” “Endangered” or “Vulnerable” by the World Conservation Union (IUCN). Most populations are depleted as a result of unsustainable harvest for meat, shell, oil, skins, and eggs. Tens of thousands of turtles die every year after

being accidentally captured in active or abandoned fishing gear. Oil spills, chemical waste, persistent plastic and other debris, high density coastal development, and an increase in ocean-based tourism have damaged or eliminated important nesting beaches and feeding areas.

To ensure the survival of sea turtles, it is important that standard and appropriate guidelines and criteria be employed by field workers in all range states. Standardized conservation and management techniques encourage the collection of comparable data and enable the sharing of results among nations and regions. This manual seeks to address the need for standard guidelines and criteria, while at the same time acknowledging a growing constituency of field workers and policy-makers seeking guidance with regard to when and why to invoke one management option over another, how to effectively implement the chosen option, and how to evaluate success.

The IUCN Marine Turtle Specialist Group believes that proper management cannot occur in the absence of supporting and high quality research, and that scientific research should focus, whenever possible, on critical conservation issues. We intend for this manual to serve a global audience involved in the protection and management of sea turtle resources. Recognizing that the most successful sea turtle protection and management programs combine traditional census techniques with computerized databases, genetic analyses and satellite-based telemetry techniques that practitioners a generation ago could only dream about, we dedicate this manual to the resource managers of the 21st century who will be facing increasingly complex resource management challenges, and for whom we hope this manual will provide both training and counsel.

Karen L. Eckert
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Editors

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International Conservation Treaties

Douglas Hykle

UNEP/CMS (Convention on Migratory Species) Secretariat, Martin-Luther-King-Str. 8, D-53175 Bonn, Germany; Tel: +49 (288) 815-2401/2; Fax: +49 (288) 815-2449; email: cms@cms.unep.de and dhykle@cms.unep.de

A variety of legal instruments concluded among governments underpins much of the conservation work related to sea turtles. This section describes a number of conservation treaties operating on a global and regional level which are directly or indirectly relevant to the conservation of these animals. The coverage is necessarily incomplete: in the limited space available it is possible only to summarize the main features of the most prominent conventions. Each subsection includes information on the date of adoption of the treaty, an acronym or short form in common use, the date of entry into force, and the membership status at the time of writing. No attempt is made to present the many regional action plans that have been developed worldwide, some of them having at least tacit governmental endorsement. Some of the conventions adopt a species-oriented approach to conservation, others place more emphasis on habitat measures, while others are all-embracing. A feature common to all of the treaties is that their effectiveness and usefulness depends on the political motivation and availability of resources to implement them.

Global Conventions

1. Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973 (CITES): entered into force 1 July 1975; 145 member States

Arguably the most widely-known wildlife treaty, CITES strives to regulate international trade in a wide range of wild animals and plants through a system of export and import permits. The provisions governing trade from one member State to another of species listed in Appendix I of the Convention are particularly stringent: permits are required certifying that a specimen has been obtained legally, and that the import will not be detrimental to the survival of the spe-

cies and is not for primarily commercial purposes. All sea turtles are listed in Appendix I: therefore, commercial trade in live or dead specimens, their parts and derivatives is effectively prohibited between CITES parties—except for those which formally enter a reservation exempting them from the Convention's provisions in relation to the species in question. In November 1994 the Conference of the Parties to CITES adopted guidelines for evaluating proposals that may be submitted by Parties in order to permit the ranching (rearing in a controlled environment of specimens taken from the wild) of sea turtles for the purpose of regulated international trade. At the time of writing, the guidelines had not been put into practice. CITES benefits from a broad membership and relatively well-established national implementation structures, and it attracts considerable attention from governmental and non-governmental bodies. CITES regulates only international trade and does not impose on its Parties legally-binding measures with respect to the domestic harvesting of sea turtles.

Secretariat: CITES Secretariat, 15, ch. des Anémones, C.P. 456, CH-1219 Châtelaine-Geneva, Switzerland; Tel: (+4122) 979-9139/40; Fax: (+4122) 797-3417; email: cites@unep.ch; Website: www.wcmc.org.uk/CITES

2. Convention on the Conservation of Migratory Species of Wild Animals, 1979 (CMS or Bonn Convention): entered into force 1 November 1983; 57 member States

The Convention on Migratory Species contains strict measures for the protection of sea turtles at the national level and encourages regional cooperation through specialized Agreements and joint research activities. Parties which are Range States for species listed in Appendix I (which includes all sea turtles

except *Natator depressus*) are to endeavor to conserve their habitat, to counteract factors impeding their migration, and to control other factors that might endanger them. Above all, Parties are obliged to prohibit the taking of animals of these species with few exceptions. Appendix II lists migratory species that require or would benefit significantly from international cooperative Agreements—which may range from legally-binding treaties to less formal memoranda of understanding. The more formal Agreements should provide for coordinated species conservation and management plans; conservation and restoration of habitat; control of factors impeding migration; cooperative research and monitoring; and public education and exchange of information among Parties.

Sea turtles have been identified as a priority group for concerted action by the decision-making bodies of CMS. The Convention is sponsoring basic research (e.g., surveys of critical nesting beaches, genetic studies to help elucidate migration patterns), information activities (e.g., identification posters for Atlantic sea turtles, publications such as a review of the state of knowledge of sea turtles along the Atlantic coast of Africa, a prototype GIS map facility for nesting beaches of the Indian Ocean) and capacity building (e.g., regional training/policy workshops, conservation techniques manual.) Starting at a regional level and focusing in particular on developing countries, CMS is working towards an interlinked, global framework for the conservation of sea turtles.

Secretariat: UNEP/CMS Secretariat, Martin-Luther-King-Str. 8, D-53175 Bonn, Germany; Tel: (49)(288) 815-2401/2; Fax: 815-2449; email: cms@cms.unep.de; Website: www.wcmc.org.uk/cms

3. Convention on Biological Diversity, 1992 (CBD): entered into force 29 December 1993; 174 member States

The objectives of CBD are “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources...”. Parties are obliged *inter alia* to develop (or adapt existing) national strategies, plans, or programs for the conservation and sustainable use of biological diversity, to carry out *in situ* conservation activities (e.g., establishment of protected areas, rehabilitation and restoration of degraded ecosystems, regulation or management of activities affecting biological diversity), to undertake identification and

monitoring activities, and to encourage customary use of biological resources compatible with conservation or sustainable use needs. The Convention does not explicitly address the conservation of sea turtles—indeed, the CBD contains no annexes of species to which its provisions are to apply. However, it does provide a framework within which broader conservation objectives are pursued. While the Convention has attracted wide political and financial support, implementation of specific components of the CBD is expected to be achieved through other instruments.

Secretariat: Secretariat of the Convention on Biological Diversity, World Trade Centre, 413 St. Jacques Street, Office 630, Montréal, Québec, Canada H2Y 1N9; Tel: (+1 514) 288-2220; Fax: (+1 514) 288-6588; Website: www.biodiv.org

Regional Conventions

1. Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, 1940 (Western Hemisphere Convention): entered into force 1 May 1942; 22 member States

The Western Hemisphere Convention’s stated objectives are to protect and preserve all species and genera of native flora and fauna from extinction, to promote the establishment of protected areas, and to foster greater international cooperation. Strict protection is to be accorded to species listed in the annex to the Convention (actually, a compilation of national species lists), including five species of sea turtles. Innovative for its time, the Convention attracted a wide membership and it is said to have provided a conceptual foundation for the creation of protected areas and to have stimulated technical cooperation. For the most part, however, the Convention has not lived up to its potential—lacking a fully-fledged secretariat and without broad governmental support to revitalize it.

Depository: Organization of American States, Secretariat for Legal Affairs, 19th Street and Constitution Avenue NW, Washington, D.C. 20006; USA; Tel: (+1 202) 458-3395; Fax: (+1 202) 458-3250

2. Convention for the Protection of the Mediterranean Sea against Pollution, 1976 (Barcelona Convention): entered into force 12 February 1978; 20 member States and the European Union

Protocol concerning the Mediterranean Specially Protected Areas, 1982 (SPA Protocol): entered into force 23 March 1986; 20 member States and the European Union.

The Barcelona Convention has general provisions for the protection of the Mediterranean marine environment, while sectoral issues are covered by a series of protocols. The Convention and the protocols are the legal component of the Mediterranean Action Plan (MAP), which functions under UNEP's Regional Seas Programme. In 1995 the Barcelona Convention was amended (new title: Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean). The amendments, not yet in force, *inter alia* oblige Contracting parties to "take all appropriate measures to protect and preserve biological diversity, rare or fragile ecosystems, as well as species of wild fauna and flora which are rare, depleted, threatened, or endangered and their habitats...". In 1985 the Contracting Parties, in their Genoa Declaration, adopted ten priority targets to be achieved. Among these was the protection of marine turtles. In addition, a network of Regional Activity Centres deal with sectoral issues (see below).

Secretariat: Coordinating Unit for the Mediterranean Action Plan (UNEP), Cas. Konstantinou 48, P.O. Box 18019, 11610 Athens, Greece. Tel: (+301) 72 73 100 (switchboard); Fax: (+301) 72 53 196/7; e-mail: unepmedu@unepmap.gr

The SPA Protocol currently in force deals with issues related to the establishment of specially protected areas. In addition to its provisions related specifically to SPAs, an Action Plan for the conservation of marine turtles was adopted in 1989. In November 1998 this Action Plan was revised and is to be submitted to the next Contracting Party meeting (October 1999) for approval. In 1995 a new Protocol was adopted and will, in time, come into force and replace the current SPA Protocol (new title: Protocol concerning Specially protected Areas and Biological Diversity in the Mediterranean). It contains general obligations similar to those found in the Convention on Biological Diversity. In addition, the Protocol requires Contracting Parties to protect, preserve, and manage threatened or endangered species (including the prohibition of taking, possession, killing, commercial trade, disturbance, etc.), to establish protected areas, and to coordinate bilateral or multilateral conservation efforts. In addition to the declaration of Specially Protected Areas of Mediterranean Importance (SPAMIs), the new Protocol has an Annex listing endangered species for protection and conservation. Marine turtles are included in this list.

Secretariat: Regional Activity Centre for Specially

Protected Areas, Centre International de l'Environment, 1080 La Chargaia, Tunisia. Tel: (+216 1) 795 760; Fax: (+216 1) 797 349; e-mail: racspa@tunisia.eu.net

3. Convention on the Conservation of European Wildlife and Natural habitats, 1979 (Bern Convention): entered into force 1 June 1982; 36 European and African States and the European Union

The Convention's aims are to "conserve wild flora and fauna and their natural habitats, especially those species and habitats whose conservation requires the cooperation of several States and to promote such cooperation. Particular emphasis is given to endangered and vulnerable species including endangered and vulnerable migratory species." The Contracting Parties undertake *inter alia* to protect the species of fauna and flora listed in Appendices I and II, as well as their habitats. Five species of marine turtles are included in Appendix II, as strictly protected species. They are, *Chelonia mydas*, *Caretta caretta*, *Eretmochelys imbricata*, *Lepidochelys kempii*, and *Dermochelys coriacea*, with most attention focused on the first two. NGOs are actively participating in the work of the Convention and are often the prime movers in specific protection and monitoring operations. The Convention's Standing Committee can and does adopt generic and specific recommendations. Several files have been opened on marine turtle conservation issues and recommendations have been addressed to several States. The Convention is building a network of protected areas known as the Emerald Network of Areas of Special Conservation Interest, and is also responsible for coordinating a European Action Programme on Threatened Species within the framework of the Pan-European Biological and Landscape Diversity Strategy.

Secretariat: Council of Europe, Environment Conservation and Management and Regional Planning Division, F-67075 Strasbourg Cedex, France. Tel: (+33 88 412000); Fax: (+33 88 413751), e-mail: gianluca.silvestrini@coe.fr; Website: www.coe.fr

4. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, 1983 (Cartagena Convention): entered into force 11 October 1986; 21 member States

Protocol concerning Specially Protected Areas and Wildlife (SPA Protocol): adopted 18 January 1990; annexes adopted 11 June 1991 (not yet

in force: only 7 of the required 9 ratifications)

The Cartagena Convention urges Contracting Parties to “individually or jointly, take all appropriate measures to protect and preserve rare or fragile ecosystems, as well as the habitat of depleted, threatened, or endangered species, in the Convention area.” Its SPAW Protocol provides for a comprehensive set of protection measures benefiting sea turtles, including the establishment of protected areas, regulation or prohibition of deleterious activities, development of management regimes, and international cooperation. All six species of sea turtles inhabiting the Wider Caribbean (*i.e.*, *Caretta caretta*, *Chelonia mydas*, *Eretmochelys imbricata*, *Dermochelys coriacea*, *Lepidochelys kempii*, and *L. olivacea*) are listed in Annex II of the Protocol. Article II of the Protocol prohibits for species in Annex II: (a) the taking, possession, or killing (including, to the extent possible, the incidental taking, possession, or killing) or commercial trade in such species, their eggs, parts, or products, and (b) to the extent possible, the disturbance of such species, particularly during breeding, incubation, estimation, migration, and other periods of biological stress. Exceptions to the prohibitions—for scientific, educational, or management purposes—are not allowed. Although it is not yet in force, the adoption of the SPAW Protocol has already stimulated the development and implementation of the Regional Programme for Specially Protected Areas and Wildlife under the framework of the Caribbean Environment Programme. This includes sea turtle conservation activities implemented through the WIDECASST network (see Trono and Salm, this volume) as well as other relevant activities (*e.g.*, establishment and management of marine protected areas and MPA networking).

Secretariat: Caribbean Environment Programme Regional Co-ordinating Unit, 14-20 Port Royal Street, Kingston, Jamaica. Tel: (+1 876) 922 9267-9; Fax (+1 876) 922 9292; email: uneprcuja@toj.com; Website: www.cep.unep.org

5. Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, 1986 (SPREP Convention): entered into force 22 August 1990; 11 member States

The South Pacific Regional Environment Programme (SPREP), formally established in 1980, gave its name to the convention that was adopted at one of its meetings in 1986. Parties to the SPREP Convention shall “take all appropriate measures to protect and preserve rare or fragile ecosystems and

depleted, threatened, or endangered flora and fauna as well as their habitat” and “establish protected areas, such as parks and reserves, and prohibit or regulate any activity likely to have adverse effects on the species, ecosystems or biological processes that such areas are designed to protect.” A Regional Marine Turtle Conservation Programme, developed under SPREP’s Natural Resource Conservation Programme, promotes sea turtle conservation and monitoring work in the SPREP region, and helped to launch a Year of the Sea Turtle campaign in 1995.

Secretariat: South Pacific Regional Environment Programme, P.O. Box 240, Apia, Western Samoa; Tel: (+685) 21 929; Fax: (+685) 20 231; email: sprepeg@apctok.peg.apc.org

Other Instruments

Various other legal instruments are relevant, directly or indirectly, to the conservation of sea turtles, including the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL: entered in force 2 October 1983), the Convention on Conservation of Nature in the South Pacific, 1976 (Apia Convention: entered into force 28 June 1990), the United Nations Convention on the Law of the Sea, 1982 (UNCLOS: entered into force 16 November 1994), the ASEAN Agreement on the Conservation of Nature and Natural Resources, 1985, and the Convention for the conservation of biodiversity and protection of priority wild areas in Central America, 1992 (Conenio para la conservación de la biodiversidad y protección de áreas silvestres prioritarias en América Central). Other treaties are also relevant, but have yet to enter into force (as of the time of writing), such as the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, 1985 (Nairobi Convention) and its related protocol on Protected Areas and on Wild Fauna and Flora in the Eastern African Region, 1985. The Inter-American Convention for the Protection and Conservation of Sea Turtles, the world’s first treaty dedicated to sea turtles, was concluded in 1996; it requires eight ratifications before entry into force. The objective of the Convention is “to promote the protection, conservation, and recovery of sea turtle populations and of the habitats on which they depend...” The Convention addresses intentional harvest, accidental capture, and habitat destruction and encourages states outside the Americas to sign complementary protocols consistent with its goals.